THE INTERPLAY OF POSITIVE PARENTING AND POSITIVE SOCIAL INFORMATION PROCESSING IN THE PREDICTION OF CHILDREN'S SOCIAL AND BEHAVIORAL ADJUSTMENT

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THE INTERPLAY OF POSITIVE PARENTING AND POSITIVE SOCIAL INFORMATION PROCESSING IN THE PREDICTION OF CHILDREN'S SOCIAL AND BEHAVIORAL ADJUSTMENT

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DISSERTATION ABSTRACT

THE INTERPLAY OF POSITIVE PARENTING AND POSITIVE SOCIAL INFORMATION PROCESSING IN THE PREDICTION OF CHILDREN'S SOCIAL AND BEHAVIORAL ADJUSTMENT

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There is a well documented literature establishing the relationship of parenting behaviors with child positive (i.e. social skills) and negative (i.e. aggressive problems) adjustment outcomes. However, relatively fewer studies have attempted to establish the conditions (or processes) related to the child's social information processing patterns, (particularly positive patterns) that play a role in this relationship. The goal of the current study is to examine the mediating and moderating role of positive child social information processing in the linkages between positive parenting and changes in child aggressive and socially skilled behavior from K to grade 7.

Data were collected from the Child Development Project, a prospective longitudinal study of child and adolescent development from a community sample of children and their families (*N*=585). Four positive parenting practices (i.e. warmth,

involvement, guidance, and discussion) were assessed in kindergarten, and four steps of positive social information processing (SIP) (namely, encoding relevance, benign attributions , prosocial problem solving, and positive evaluations of competent responses to peer dilemmas) were tapped in elementary school. Teacher ratings of social skills and aggressive behavior were collected during kindergarten and grade 7.

Results revealed that both, early childhood positive parenting and elementary school positive SIP were separately associated with lower aggression and higher social skills in kindergarten and grade 7. Positive parenting also predicted positive social information processing. Furthermore, positive SIP mediated the association of positive parenting and changes in aggressive and socially skilled behavior from K to grade 7. Results of the study provide support for positive SIP as a moderator of the associations of parenting with changes in child aggressive and socially skilled outcomes from K to grade 7. SIP plays a strengthening and compensatory role in the association of parenting and adjustment, depending on the parenting pattern and SIP step. Specifically, at low levels of positive SIP, parent warmth, guidance, and discussion predict lower aggressive outcomes (strengthening role). However, greater parent involvement predicts socially skilled behavior and low aggression for those with superior encoding skills and competent response evaluation (strengthening role), while parental discussion predicts social skills, only when prosocial problem solving and competent response evaluation are low (compensatory role). Intervention implications include a focus on increasing positive parenting and a competent style of processing social information for parent training and child based interventions and universal school based curriculums to promote prosocial behavior and lower rates of antisocial behavior.

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Finally, I would like to dedicate this dissertation to my family—my beloved brother, Xerxes, who has been a constant source of inspiration in my life and whose wisdom, knowledge, and love have taught me some of the deepest lessons of life; my dearest Polly; and, my ever-loving parents: my mom, Sebastiana Arsiwalla and my dad, Dinyar Arsiwalla for their unconditional love, encouragement, and support in all my endeavors and aspirations. This dissertation would not have seen the light of the day without their constant faith and unflinching support.

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I. Introduction

An extensive body of research has examined links between parenting, children's social information processing (SIP) style, and children's adjustment. Most of this research has focused on harsh and abusive parenting, SIP biases and deficits, and behavior-problem outcomes, and most has tested whether the link between parenting and adjustment outcomes is mediated (accounted for) by SIP (Dodge & Pettit, 2003; Pettit & Mize, 2007). However, some research has examined positive aspects of parenting in relation to SIP and child adjustment (e.g., Pettit et al., 1991) and a few recent research reports (e.g., Runions & Keating, 2007) have tested additive (rather than mediated) relations between positive parenting, SIP, and child outcomes. In some of this latter work SIP has been construed in terms of positive and competent processing (e.g., making benign rather than hostile interpretations of peer provocation; generating competent rather than aggressive solutions to hypothetical peer problems) rather than in terms of biases and deficits. Children who display this kind of positive SIP style (sometimes referred to as Pollyanna-like children; see Runions & Keating, 2007) engage in more prosocial behavior than do their more negative or realistic peers (Nelson & Crick, 1999). Where and how children acquire such an optimistic processing style has not yet been identified, but SIP formulations would suggest that it could emerge in part from parenting that is highly supportive, engaged, and positive. Coupled with the increasing recognition

that positive and negative parenting do not represent two ends of a single continuum but rather two distinct aspects of parenting (e.g., Belsky et al., 2007; Gardner et al., 2007), this suggests an important direction for research on links between parenting, SIP, and adjustment outcomes. The central question is how positive parenting and positive SIP operate in relation to one another in the prediction of adjustment outcomes in childhood and adolescence.

The goal of the present study was to extend the research on positive parenting and positive SIP by examining their conjoint and interactive effects on both positive (social skillfulness) and negative (aggressiveness) aspects of children's adjustment. Whereas numerous studies have evaluated additive and/or meditational models of negative parenting and negative SIP, as noted above, few studies have tested such models in relation to positive parenting and positive SIP, and no study has considered whether SIP might moderate the relation between parenting and child adjustment outcomes. Moreover, most research examining SIP and child adjustment has focused on maladaptive behavioral outcomes, such as aggression. There is a need to test whether the parenting→SIP→adjustment linkage holds when positive outcomes, such as socially skillful behavior, are considered.

As noted, no study that we are aware has been concerned with the role of SIP as a moderator of early parental experience and child adjustment. However, there are at least two reasons to expect that SIP might serve as a moderator of parenting in general and positive parenting in particular. The first is that social experiences external to the parent-child relationship also may play a formative role in SIP development. These experiences might be in the form of positive support and teaching from extended family members,

teachers, and adults playing supervisory roles in extracurricular activities and after-school programs. They also might take the form of positive peer relationships in school and nonschool settings. There is evidence that the quality of social experiences in these relational contexts is associated with children's acquisition of social-cognitive skills and interpersonal competencies (e.g., see Grusec & Hastings, 2007, for reviews). For example, Dodge et al. (2003), in a set of studies of peer rejection, SIP, and aggression in the elementary school years, found that peer rejection in one grade predicted increases in SIP biases and deficits in a later grade. To the extent that a child is exposed to positive experiences with the peer group and with nonparental adults, one would expect the child to develop a benign and prosocial SIP style (i.e., skillfulness in detecting relevant social cues, benign attributions of peers' intent, the generation of competent solutions to interpersonal dilemmas, and the endorsement of positive and constructive approaches to resolving potential conflicts with peers). From this perspective, children may acquire a positive SIP style even though their parents are not particularly positive or supportive. A positive SIP style may, in turn, moderate the association between positive parenting and subsequent adjustment outcomes. As a moderator, positive SIP might enhance the effect (the strength of association) of higher levels of positive parenting on positive outcomes or it might mitigate the effect of lower levels of positive parenting on negative outcomes.

A second reason to expect that SIP might moderate links between parenting and child adjustment is that child dispositional characteristics such as temperament and personality moderate links between parenting and child adjustment (Bates & Pettit, 2007; Gallagher, 2002). Numerous studies have documented that parenting is more strongly associated with later adjustment among children with a difficult and demanding

temperament and less strongly associated with later adjustment among children with a more agreeable and adaptable temperament. For example, Stice and Gonzales (1998) found that parenting (parental support, parental control, and behavioral undercontrol) was significantly associated with antisocial behavior among adolescents at high temperamental "risk" but not among adolescents at low temperamental risk. Along these lines, Lengua et al. (2000) documented that parental rejection predicted conduct problems in middle childhood among those children who were low in positive emotionality but not among those children who were high in positive emotionality.

Personality characteristics also have been shown to moderate the impact of parenting on adjustment. For example, Prinzie et al. (2003) found that among children high in benevolence and conscientiousness, negative (over-reactive and coercive) parenting was only weakly related to externalizing behavior in middle childhood, but among children low in these personality dimensions, negative parenting was associated more strongly with externalizing behavior problems. To the extent that positive temperament (e.g., positive emotionality) and personality (e.g., benevolence) characteristics reflect a positive outlook or general orientation toward social relationships, they may underlie—or perhaps co-occur with—a generally positive SIP style (e.g., a tendency to make benign rather than hostile interpretations of peers' intent in situations in which a provocation has occurred). It therefore seems plausible that positive SIP will likewise moderate the relation between parenting and subsequent child adjustment.

To provide an adequate test of the hypothesized moderating role of positive SIP, several research conditions must be met. First, a longitudinal design is needed in which

parenting and SIP are assessed prior to the child adjustment "outcome" and in which initial levels of child adjustment are controlled. This approach has been used in studies of child characteristics and extrafamilial factors as moderators (e.g., Criss et al., 2002). Second, a reliable and robust index of the moderator (positive SIP in this instance) must be constructed. Individual differences in SIP have been shown to have only modest cross-year stability (e.g., Lansford et al., 2006), and some researchers have created cross-year summary scores (or latent variable scores) to increase reliability (Fite et al., 2008; Harrist et al., 1997). Third, multiple aspects of parenting must be evaluated. As mentioned earlier, positive parenting is empirically distinct from negative parenting and each has been found to make independent contributions to the prediction of child adjustment (Pettit & Bates, 1989; Pettit, Bates, & Dodge, 1997). Moreover, positive parenting has been shown to be multi-dimensional, reflecting both stylistic aspects of the parent-child relationship (e.g., warmth) and effective and supportive parenting practices (e.g., guidance).

Data for the present study were drawn from the Child Development Project, a prospective longitudinal study of risk and protective factors in children's development of competence and behavior problems. Positive parenting was assessed during the first data collection wave, which took place the summer before the children's entry into kindergarten. Observational, interview, and questionnaire measures were used to construct the four indicators of positive parenting: warmth, guidance, involvement, and calm discussion. Social information processing was assessed the summer prior to kindergarten and grades 1, 2, and 3. Cross-grade composite indexes of encoding skill, benign attributions, prosocial problem solving, and positive evaluations of competent

responses to peer dilemmas were formed. Teacher ratings of socially skillful behavior and aggressive behavior were collected in kindergarten and grade 7.

The present study examined the interplay of kindergarten positive parenting, elementary school positive social information processing, and grade 7 child aggressive and socially skilled behavior outcomes. One of the core hypothesis of the study was that positive social information processing would mediate the links between positive parenting and adolescent aggressive and socially skilled behavior outcomes. Another core and novel hypothesis was that positive social information processing would moderate the association between positive parenting and aggression and social skills in adolescence. It was expected that parenting would play a role in predicting aggressive behavior when SIP was low but it would play a role in predicting socially skilled behavior when positive SIP was high, thereby suggesting a compensatory role of SIP with the parenting to aggression links and a strengthening role of SIP in the parenting to social skills linkage.

II. Review of Literature

The goal of the current study was to examine the interplay of positive parenting practices and adaptive social information processing in the prediction of child behavioral and social adjustment. In keeping with the study goals, the present review examines literature bearing on positive parenting, positive social information processing (SIP), and children's aggressive and socially competent behavior. The first section is concerned with the notion of positive parenting, and whether it represents a distinct facet of parenting or merely the absence of negative parenting. The question of whether there is evidence that indices of positive parenting (more specifically, parental warmth, involvement, discussion, and guidance) are more strongly associated with positive outcomes (e.g., children's socially skillful behavior) than with negative outcomes (e.g., lower levels of aggressive behavior) also will be addressed. The second section describes Dodge's SIP model and summarizes literature on the role of SIP in children's behavior and adjustment. Of particular interest is research on links between SIP and positive (vs. negative) aspects of child adjustment. The third section examines the developmental origins of individual differences in SIP. Most of this research has focused on parenting, but a smaller literature also has considered the impact of peer relations and contextual relations on SIP development. Of greater substantive interest however, is a review of literature on SIP as a mediator of links between parenting and child adjustment. The final section focuses on

the potential moderating role of positive SIP in the predictive relations between parenting and child adjustment. Because no study has yet been conducted to examine this issue research will be summarized that has considered child attributes (e.g., personality) and peer relationships as moderators. These two set of potential moderators were of interest because they may operate in a manner similar to SIP style and may, in part, underlie variations in SIP.

Positive Parenting and Child Adjustment

Research on qualities of parenting and parent-child relationships that are associated with child adjustment and well-being has a long and venerable history (e.g., see Grusec & Davidov, 2007). Contemporary perspectives on parenting tend to distinguish between parenting styles and parenting practices (e.g., Darling & Steinberg, 1993; Mize & Pettit, 1997), on the one hand, and dimensions and types of parenting (e.g., Barber, Stolz, & Olsen, 2005), on the other hand. Parenting style is reflected in the underlying emotional tone of parent-child relationships and the extent to which parents typically display behaviors that are characteristic of a general orientation toward the child (e.g., acceptance vs. rejection). Parenting practices are goal-directed parenting behaviors that are intended to have a particular kind of impact, such as when a parent helps a child with homework or helps a child resolve a conflict with a sibling. Parenting typologies have been used to classify parents in terms of a mix of differing parenting behaviors. The classic work of Baumrind (1967) is best known in this regard. Parents in the "authoritarian" group, for example, were characterized by high demandingness and low responsiveness. The typological approach has fallen out of favor over the years, as researchers sought to "unpack" the typologies in order to better understand which

dimensions of parenting had the greatest socialization significance at particular points in development (Barber et al., 2005).

Positive vs. negative parenting.

***Harsh discipline*.** Much of the research on parenting as it relates to child adjustment has centered on the ways in which "bad" parenting may lead to "bad" outcomes. A range of indicators of negative parenting has been considered, including parental rejection (Rohner, 2004), intrusiveness (Barber et al., 2004), and, especially with younger children, harsh physical discipline (Gershoff, 2002). Harsh discipline has been one of the most frequently researched aspects of parenting and findings generally indicate that children whose parents use more harsh discipline are at greater risk for developing a variety of externalizing (e.g., aggression) and internalizing (e.g., anxiety) behavior problems (Gershoff, 2002). These predictive relations have been examined using both cross-sectional and longitudinal research designs and in research that has considered prior, concurrent, and subsequent levels of child adjustment problems (Pettit & Arsiwalla, 2008).

Among the most frequently studied "bad outcomes" of harsh parenting is child aggressive behavior. This is probably because aggressive-oppositional behavior is the most common reason for referral for psycho-therapeutic intervention and because early appearing aggressive behavior has long-term consequences for child and adolescent adjustment. A large body of research has been aimed at identifying the early parenting behaviors that may foster the development of aggressive behavior, and exposure to harsh discipline has been the focus of much of this research. What might account for the links between harsh discipline and aggressive behavior? Some have suggested that children's

oppositional behavior elicits negative parental reactions and behaviors, but recent longitudinal studies suggest that harsh parenting predicts subsequent aggressive behavior even after controlling for earlier aggressive behavior (Pettit & Arsiwalla, 2008). Other explanations focus on how parent's actions may shape children's behavioral and social-cognitive styles. Among the possible explanations that are most often discussed are that punitive parents provide a role model of aggressive behavior, that punitive parents create social-learning contingencies (negative reinforcement) that increase the likelihood of aggressive behavior, and that children exposed to harsh discipline develop a set of social-cognitive biases that lead them to make erroneous judgments about the motives and actions of others.

Considerably fewer studies have examined the positive-adjustment correlates of harsh discipline. It therefore is not clear whether harsh discipline has stronger links with the presence of aggressive behavior problems or the absence of socially-skill behavior. A few longitudinal studies provide relevant data, though the studies were not explicitly designed to contrast predictions of positive vs. negative adjustment. Pettit, Bates, and Dodge (1997), for example, found that harsh discipline assessed just before kindergarten was associated with lower levels of teacher-rated social skillfulness in grade 6, controlling kindergarten social skillfulness. Recent discussions of the notion of "positive adjustment" note that adjustment is best understood in terms of distinguishable positive and negative adjustment trajectories and not as a single good vs. bad adjustment continuum.

***Positive parenting*.** Just as positive adjustment is distinguishable from negative adjustment; positive parenting can be distinguished from negative parenting. Various

dimensions of positive parenting have been studied over the years (e.g., warmth, involvement, teaching), and abundant evidence has documented that higher levels of positive parenting are associated with lower levels of poor adjustment and higher levels of good adjustment. Pettit et al. (1997), for example, showed that pre-kindergarten involvement and calm discussion predicted grade 6 academic performance (GPA and achievement test scores) after accounting for kindergarten academic performance. The explanations for such linkages vary depending on the form of positive parenting and the outcome of interest. Warmth, for example, has been hypothesized to be associated with social competence because it fosters the development of security, trust, and sensitivity. Less commonly, researchers have speculated—and provided evidence—that positive parenting styles and practices contribute to the development of socio-cognitive orientations that enable children to interact more effectively with peers. These orientations might be expressed in more positive expectations of peers' motives and actions and in a general willingness to give peers the "benefit of the doubt" when conflicts do arise.

A conclusion that seems warranted based on research on positive parenting is that it is multifaceted and that the different facets are only very loosely rated (Pettit et al., 1997). As Parke (1992) has noted, parents may select from a smorgasbord of possible positive parenting behaviors, with a preference for some (e.g., such as insuring a high degree of involvement in the child's peer activities) over others (e.g., dealing with possible conflicts in a calm and reasoned manner). Negative parenting, on the other hand, may reflect styles and patterns of parenting that tend to co-occur (e.g., hostility and punitive discipline).

Positive vs. negative parenting. As noted earlier, it increasingly has been recognized that positive parenting and negative parenting do not represent two sides of the same coin (Belsky, 1990; Pettit & Bates, 1989; Pettit et al., 1997). In a meta-analysis of research on care giving and children's externalizing problems, Rothbaum and Weisz (1994) found comparable effect sizes for approval, guidance, and synchrony as for coercion (and, interestingly, no significant effects for restrictiveness). Pettit and Bates (1989) and Pettit et al. (1997) examined whether positive parenting predicted child adjustment after controlling for negative parenting. Pettit and Bates (1989), in a sample of preschoolers, found the absence of proactive parenting was a stronger predictor of externalizing-type behavior problems than the presence of harsh parenting. Pettit et al. (1997) showed that positive parenting (e.g., involvement) predicted grade 6 school performance, after controlling for harsh discipline. It can be concluded from this research that positive and negative parenting are nonredundant and that research on links between parenting and subsequent child adjustment may benefit from the inclusion of measures of both positive and negative parenting.

Social Information Styles as a Connecting Link between Parenting and Child Adjustment

As noted earlier, attempts to explain relations between parenting—especially harsh parenting—and child behavior problems often have incorporated concepts from socio-affective-cognitive theories and perspectives (see Mize, Pettit, & Meece, 2000). For example, Eisenberg et al. (2001) found that children's "dispositional regulation" (i.e., attention focus and persistence) mediated the relation between mothers' expressed emotion and young children's social competence and externalizing behavior as rated by

teachers. Cassidy, Parke, Butkovsky, and Braungart (1992) examined the links between parental expressiveness, child emotion understanding, and peer acceptance, and found that emotion understanding accounted for a modest but significant portion of the association between expressiveness and peer acceptance.

A social-cognitive perspective that has been frequently used to explain links between harsh parenting and child externalizing problems is the social-information processing (SIP) model developed by Dodge and colleagues (e.g., Dodge, Pettit, McClaskey, & Brown, 1986). In its initial applications, the model was used to explain why some children responded to challenging situations with peers by aggressing, even when peers' actions were relatively benign. The aggressive behavior was thought to stem from a number of biases and deficits in the processing of social information. Because the SIP model is central to the current investigation, a detailed description of its components follows.

The social-information processing model.

The basic tenet of Dodge's social-information processing model is that children's responses to challenging social situations, such as responding to a provocation by a peer or handling rebuff by peers in a group entry context, is guided by a series of social-cognitive steps. These steps theoretically occur in real time (referred to as on-line processing), derive from schemas stored in memory that are built from experiences with others, and increase the likelihood that a child will respond in a negative (e.g., aggressive) or positive (e.g., prosocial) manner. The first step, encoding, refers to the selective process of attending to social cues from the external environment and storage of cue information in the short-term memory. Owing to the overwhelming nature of stimuli

array, the developing child learns to selectively attend to selective features over others in keeping with their personal-emotional needs and socialization influences. The second step, interpretation, pertains to making a meaningful interpretation of the stimulus, which involves making a decision about the motivation that derives the behavior of another (intent attribution). According to the theory, we can make attributions in terms of whether the peer in the social situation had a benign, hostile, or ambiguous intent. The third step, selecting a goal, refers to the process of choosing the most desirable outcome in a given situation and has been categorized by the theory into instrumental or relational goals. This is followed by the fourth step, namely generating responses, which involve the eliciting of behavioral responses in a given situation and include several outcomes like aggressive, competent, inept, or passive behavioral responses. The fifth step, evaluation of responses, involves making an evaluation about whether a response is a good one and would be met with desirable outcomes for the individual (Crick & Dodge, 1994; Dodge, 2006; Dodge, 1993; Mize & Pettit, 2008). The first four steps in the SIP model have been the focus of extensive research, as is documented below.

The first step in the SIP model, *encoding*, involves attending to relevant social cues in an accurate and unbiased manner (Dodge, 1993). Encoding has been typically measured by presenting the target participant with ambiguous stimuli (e.g., video stimuli involving a role play wherein the protagonist experienced a negative outcome as a result of peer behavior) that involve them experiencing provocation or peer entry situations. After each presentation of stimuli, the participants are asked to recall what happened on the story and rated by predetermined criteria on a scale from 0 (not relevant) to 2 (fully relevant) based on the accuracy of the cues they have provided (Dodge et al., 1995;

Dodge et al,. 2003; Weiss et al., 1992). Aggressive children are likely to have deficiencies in encoding relevant social cues because they are more likely to pay selective attention and recall cues consistent with threat or hostility (Mize & Pettit, 2008). Specifically, aggressive children are more likely to attend to fewer relevant interpersonal cues (Dodge & Newman, 1981; Dodge, Pettit, McClaskey & Brown, 1986) and to use less presented cues about social situations. They are also more likely to use self schemas when making decisions (Dodge & Tomlin, 1987; Slaby & Guerra, 1988); to have deficits in recall (Dodge & Frame, 1982); biases towards sensitivity towards guilt and hostility cues (Dodge & Frame, 1982; Dodge & Newman, 1981; Weiss et al., 1992); and, make encoding errors of omission and commission (Dodge et al., 1995; Lochman & Dodge, 1994). In contrast, it has been demonstrated that the ability to attend to and accurately encode relevant social cues (encoding relevance) is linked with positive social behavior (Dodge et al., 1986; Putallaz, 1983).

Interpretation refers to a causal inference about the cause of a stimulus event or about the motives of others' actions (Dodge & Crick, 1994; Mize & Pettit, 2008). Attribution of intent, the second step of the SIP model and the most widely studied of the different SIP steps (Dodge, 1993; Peets et al., 2007), is generally measured by presenting the participants with a series of ambiguous hypothetical vignettes in the form of audio, video, text, or read aloud stories. Each story pertains to a situation involving a peer provocateur wherein the subject is either asked to imagine himself or a protagonist in the story, experiencing some sort of negative outcome (e.g., being pushed by a peer in the hallway). After being exposed to each story, the participants are asked to attribute intent to the peer provocateur, either as a response to an open ended question (e.g., "why did the

peer act in this way?"), or a closed ended multiple choice response style question wherein responses could be interpreted as having benign, hostile, or accidental intent. Individuals who are classified as having a hostile attribution bias tend to have higher scores on hostile attribution. A large number of studies (over 100) have examined the prediction of aggressive behavior from hostile bias, and two meta-analyses documented robust to modest effect sizes (Orobio de Castro et al., 2002; Yoon, Hughes & Gaur, 1999). Research guided by the SIP theory suggests that aggressive children have a tendency to attribute hostile intent to the ambiguous peer provocateur in that they believe that the peer acted with malicious intent when presented with accidental vignettes (Crick & Dodge, 1996; Dodge, 1980; Peets et al., 2007; Weiss et al., 1992). The term "hostile attribution bias" refers to this disposition to perceive hostile intent in others' behaviors in ambiguous situations (Dodge, 2006).

The third step in the SIP model, r*esponse generation*, refers to generating one or more potential behavioral responses to the situation. The study of response generation involves both, the number of responses, as well as the quality of responses accessed. The generation of responses (or solutions and strategies) has been measured in prior studies by presenting children with vignettes and asking them how they would respond if the story in the vignette happened to them. Responses were coded into various categories including aggressive, inept, and assertive. Proportions of these various categories, especially aggressive strategies were then assessed (Dodge et al., 2003; Dodge et al., 1995 Weiss et al., 1992). While earlier studies focused on the linkages between the *number* of social strategies generated and aggressive behavior (e.g. Shure & Spivack, 1980; Slaby & Guerra, 1988; Webstaer-Stratton & Lindsay, 1999), recent literature has

emphasized the *quality* of strategies generated by children in social situations (Dodge et al., 2003; Dodge et al., 1995; Mize & Pettit, 2008; Weiss et al., 1992). The SIP theory predicts that aggressive children will generate strategies that are more aggressive (Dodge et al., 2003; Mize & Ladd, 1988; Slaby & Guerra, 1988; Waas, 1988; Waldman, 1996), more coercive and manipulative (Dodge et al., 1986; Rubin et al., 1987), and more idiosyncratic or vague (Pettit et al., 1988). The solutions generated by aggressive kids also tend to be inept (Asher & Renshaw, 1981), less assertive (Asanrow & Callan, 1985), and they have fewer relationship enhancing and prosocial responses (Asher & Renshaw, 1981; Pettit et al., 1988). Although less frequently studied, the SIP model also would predict that children who generate competent, assertive, and prosocial responses tend to be socially skilled and are well liked by peers (Dodge et al., 1986).

The fourth step*, response evaluation and decision,* refers to the process of evaluating possible behavioral responses in terms of the likelihood that they will result in desired outcomes and in terms of perceived ability (efficacy) for enacting these responses. Crick and Dodge (1994) describe four ways in which response evaluation might be conceptualized and measured: (1) aggressive response evaluation (i.e., a moral judgment about how good or bad a response is judged to be); (2) outcome expectations (i.e., their expectations about the outcomes that would occur if the selected response was actually implemented, such as material gain, punishment, and interpersonal and affective expectations); (3) self efficacy for the response (i.e., how confident they would be to pursue the response); and, (4) response selection (i.e., making a decision based on the alternatives) (Dodge, 1993; Mize & Pettit, 2008). Numerous studies have revealed that aggressive children are more likely to make positive evaluations of aggressive responses

(Crick & Dodge, 1996; Crick & Ladd, 1991; Dodge et al., 1995; Dodge et al., 2003; Lansford et al., 2006; Trachtenberg & Viken, 1994; Quiggle et al., 1992; Weiss et al., 1992). Aggressive children are also more predisposed to expect positive instrumental outcomes (Hart et al., 1990) by expecting that their aggression would be planfully aimed to achieve expected outcomes (Lochman & Dodge, 1994) and to have fewer negative interpersonal outcomes for aggressive behavior (Quiggle et al., 1992). Behaviorally disruptive children are also more likely to have greater confidence in their ability to enact an aggressive response by possessing greater self-efficacy for aggressive behavioral responses (Erdley & Asher, 1992; Quiggle et al., 1992). Again, though less frequently studied, socially competent children would be expected to more positively endorse competent responses and to believe that enacting such response is comparatively easy (Dodge et al., 1986).

Although the SIP theory concerns outcomes pertaining to competent and aggressive behavior, most of the extant research has ignored social competence, or inferred its role by way of a comparison of non-aggressive and aggressive children (Dodge & Frame, 1982; Dodge & Somberg, 1987; Milich & Dodge, 1984). There is little available research on the role of SIP patterns on children's socially competent and skilled behaviors in peer situations. One of the earliest of these studies was conducted by Dodge et al. (1986). In two studies with samples ranging from kindergarten to fourth grade, SIP processes (i.e., hostile attributions, encoding, competent and aggressive response generation, negative evaluation of passive and aggressive responses) were found to nonredundantly predict peer success and competence.

Similarly, two later studies laid the groundwork for an understanding of the role of SIP in the development of socially competent behavior (Dodge & Price, 1994; Pettit, Dodge & Brown, 1988). Social problem solving fluency, relevance, and prosocial responses, but not aggressive responding, predicted teacher and peer rated socially skilled behavior among a sample of 46 preschool children (Pettit, Dodge & Brown, 1988). Likewise, Dodge and Price (1994) using a series of SIP measures (e.g., encoding hostile and non hostile cues, hostile attributions, fluency of response generation, aggressive response generation, interpersonal and instrumental self-efficacy, endorsement of aggressive responses, and enactment skill) demonstrated their role in the prediction of competent social behavior in peer entry, provocation and authority situations as rated by peers and teachers.

There has been indirect support for the relation between SIP and socially competent behavior in intervention research. Much of this research has emphasized that reframing cognitive-behavioral processes result in change in behavioral competence (CPPRG, 2004; Fraser et al., 2005; Lochman, 1992; Lochman & Wells, 2002; Wilson, Lipsey & Derzon, 2003). One prominent instance of this is the Fast Track Program, a multicomponent intensive intervention from first grade to high school that sought to reduce the incidence of behavior problems among 891 aggressive children. Modest effects were revealed on children's social cognition and social competence problems, peer deviant behaviors, and conduct problems in the home and community (CPPRG, 2004). Furthermore, Lochman (1992) found that the intervention group had better problem solving skills, higher self esteem, lower substance use, and were no different from the nonaggressive boys in a cognitive behavioral treatment study (Lochman ,1992).

Similar findings were demonstrated by Seay and colleagues in a cognitive behavioral intervention (2003) that demonstrated a significant improvement in the treatment group in terms of greater aggression control and exhibiting more praise to their peers. While the untreated control group reported increased scores for peer dislike, the treatment children did not show these increases although they did not show reduction either (Seay et al., 2003).

The studies reviewed above suggest a convincing rationale for the role of social information processing in predicting socially competent and adaptive behavior in peer situations, and how altering these biased cognitions predicts improvements in socially competent behavior. Factors that may influence the development of individual differences in SIP will be considered next. The following sections lay the groundwork for examining the literature on the significance of early parental antecedents and the process or conditions through which these play a role in child adjustment.

Developmental origins of individual differences in sip style.

Parenting and parent-child relationships have been the most extensively studied developmental correlates and antecedents of SIP style, and most of this work has focused on negative parenting and negative SIP. However, some research and theory has linked experiences with peers to variations in SIP, and a small number of studies have considered socio-demographic factors in SIP development.

Parenting. An increasing literature has established links between parenting antecedents of children's social information processing (Dodge, Bates & Pettit, 1990; Dodge, Pettit, Bates & Valente, 1995; Domitrovich & Bierman, 2001; Haskett & Willoughby, 2007; Pettit, Dodge & Brown, 1988; Weiss, Dodge, Bates & Pettit, 1992).

Parenting patterns both harsh as well as supportive parenting have predicted child social cognitive patterns. The bulk of literature in this domain however, has focused on harsh, insensitive parenting in its prediction of child socio-cognitive development (Bradshaw & Garbarino, 2004; Price & Glad, 2003; Dodge, Bates & Pettit, 1990; Dodge et al., 1995; Weiss et al., 1992). One of the first studies to examine parenting in relation to SIP was conducted by Pettit et al. (1988). Mothers of 46 preschool children attending Head Start were interviewed about their parenting practices and beliefs. Their children were administered an SIP battery at school which assessed encoding (i.e., fluency and relevance of solutions) and response generation (i.e., the proportion of aggressive and prosocial solutions generated). Parental restrictive discipline was negatively associated with the proportion of prosocial responses generated in preschoolers. Likewise, maternal biased expectations predicted encoding fluency and relevance as well as prosocial response generation, whereas, mothers' endorsement of aggression was negatively associated with encoding relevance and prosocial response generation. These findings suggest that negative parenting behaviors negatively associate with adaptive SIP patterns (Pettit et al., 1988).

A prominent study conducted by Dodge and colleagues (1990) examined physical maltreatment in a sample of 309 prekindergarten aged children from the longitudinal Child Development Project and found that physically harmed children were less attentive to relevant cues, attributed hostile intent, and were less likely to generate competent solutions to interpersonal problems. Later, Dodge et al. (1995) replicated these findings with a broader range of SIP patterns (i.e., encoding errors, hostile attribution biases, accessing aggressive responses, and positive evaluations of aggression). Weiss and

colleagues (1992) also corroborated these findings with the Child Development Project dataset and found a robust effect of the role of harsh parental discipline on the four indicators of SIP (i.e., encoding, hostile attributions, response generation, and response evaluation) after controlling for aggression and across gender, SES, and family composition.

Similarly, Price and Glad (2003) found a relation between the frequency of hostile attributions of intent among physically abused boys as compared to nonmaltreated children, towards a variety of relationship figures (e.g., parents, unfamiliar teacher, best friends, and unfamiliar peers). The relation between severity of physical abuse and hostile attributions of bias with mothers and unfamiliar peers was explored and evidence was found for greater HAI among maltreated children. Evidence for this harsh parenting → SIP link was also noted in a recent longitudinal study by Runions and Keating (2007) on authoritarian parenting practices and later social information processing in a sample of preschool and kindergarten children from the NICHD dataset. Mothers' authoritarian attitudes during preschool, as signified by their beliefs that children should be obedient, predicted hostile attribution biases in the first grade after accounting for earlier preschool hostile attribution biases. These findings provide evidence that maladaptive social information processing may have its roots within the negative experiences within the family setting, which may eventually have an impact in peer settings.

In stark contrast to the abundant literature on the harsh parenting → SIP link, there is little available research on positive, sensitive parenting in predicting social information processing. Positive parenting may play a role in eliciting adaptive cognitive functioning, not merely by virtue of absence of negative parenting, but by its impact on

the parent-child relationship, providing positive role models, and through direct and indirect teaching of adaptive problem solving (Criss et al., 2002; Haskett & Willoughby, 2007; Pettit et al., 1988). For instance, Pettit et al. (1988) found evidence for positive parental links with child encoding relevance, i.e., parents who utilize more proactive teaching strategies as part of their parenting repertoire have children who encode the most relevant social cues when solving social problem situations. Similarly, Criss, Shaw and Ingoldsby (2003) in a sample of 122 families with 10-year-old boys, found that parent - child positive synchrony was related to lower levels of SIP aggressive response decisions. Additional support for the positive parenting → SIP link was supported by Haskett and Willoughby's (2007) study of 166 children which showed that nurturing, non- harsh parenting (i.e., responsiveness, sensitivity, and positive regard) was positively related to more adaptive forms of social cognitive patterns. Both of the above studies are consistent with prior research that has emphasized qualities of the parent - child interaction context as playing a crucial role in children's socio-cognitive skills in peer settings (e.g., Macoby, 1992; Mize & Pettit, 1997).

There is, however, little discussion within the literature on the *specific* positive parenting indicators that predict child socio-cognitive functioning. Most of the theory and empirical research on parenting and SIP has suggested that positive parenting (e.g., synchrony, sensitivity, nurturance, and proactivity) and negative parenting (e.g., harsh physical discipline) broadly construed, predict variations in children's SIP style. A few studies have attempted to tease out which aspects of positive parenting may be more (or less) strongly associated with SIP. Criss et al. (2003) for instance emphasized the role of parent - child relational synchrony in low SIP aggressive response decisions, whereas

Domitrivich and Bierman (2001) demonstrated the role of warm supportive parenting in high prosocial and low aggressive problem solving. Clearly, there is a need for additional study of the multi-faceted components of positive parenting as they relate to SIP.

Peers. Although parenting may be the most robust socialization predictor of SIP, other interpersonal domains such as peer relationship domains, may also play a role in SIP development. The notion that peers are important for various aspects of children's socio-emotional development (e.g., perspective taking, empathy, self perceptions) has long been recognized (e.g., Ladd, 2005; Parker & Asher, 1987). A much smaller body of research has examined peer relationship factors as they relate to SIP.

In perhaps the most methodologically sophisticated study of peer relations, SIP, and adjustment, Dodge and colleagues (2003) examined a sample of 259 children from the Social Development Project and 585 children from the Child Development Project. Across both longitudinal samples they replicated the findings that after controlling for the initial levels of aggressive behavior, peer social preference predicted social information processing patterns such as encoding, attribution, response generation, and enactment patterns of SIP. They found evidence consistent with their theory of cyclical relation between SIP and peer relationships such that initial biases and deficits in social information processing increased their likelihood of being rejected by peers. Furthermore, they found that individuals who were rejected by peers developed hostile schemas of their social world which further predisposed them to develop exacerbated patterns of biases in processing information.

A follow-up study by Lansford and colleagues (2008) with 585 children followed up longitudinally from kindergarten to grade 3 examined a developmental cascades

model of peer rejection, social information processing, and aggressive behavior. They demonstrated that peer rejection had direct effects on later SIP problems; earlier SIP problems had direct effects on peer rejection and aggression; and, aggression had direct effects on subsequent peer rejection. They demonstrated how each construct has an effect on changes in others (i.e., peer rejection to SIP for instance) in a snowballing cycle over time. SIP problems and aggression cascaded over time through lower peer liking; and SIP in turn facilitated the progress of social preference.

The above findings lend support to the notion that peer relationship factors play an important role in SIP development. Thus, while parenting and peer relations occupy a crucial influential role as proximal factors on young children's socio-cognitive development, theoretical frameworks (e.g., Bronfrenbrenner's Ecological Framework (Bronfenbrenner, 1979) and research have also emphasized the role that contextual factors play in influencing children's socio-cognitive development.

***Socio-demographic factors*.** Empirical support for contextual antecedents of children's social cognitive biases is prominent in the form of violent media exposure, real-life violence exposure, and low socioeconomic status. Research has found evidence that exposure to violent video games increases aggressive thoughts in males and females, children and adults, and in experimental and correlational studies (Anderson & Dill, 2000; Anderson & Bushman, 2001; Bushman & Anderson, 2002; Kirsh, 1998; Kirsh & Olczak, 2002). Direct exposure to violence has been known to predict social cognitive biases in young children according to some literature in this domain (Bradshaw & Garbarino, 2004; Guerra, Huessman, & Spindler, 2003). For example, Bradshaw and Garbarino (2004) found that witnessing violence was correlated with several aspects of

negatively biased information processing (i.e., hostile attribution bias, accessibility of aggressive cognitions, and beliefs supporting aggressive responses to threat), and marginally significantly correlated with negative views of other people. Guerra, Huessman, and Spindler (2003) found similar results among 4458 children living in urban neighborhoods followed from grades 1 to 6, suggesting that prior exposure to violence in grades 1 to 3 had a significant effect in increasing both normative beliefs about aggressive behavior as well as aggressive fantasy as children get older.

Other factors related to the origins of social information processing include sociodemographic disadvantage (Schultz & Shaw, 2003; Schultz, Izard & Ackerman, 2000), gender, and cognitive functioning (Runions & Keating, 2007). For instance, Schultz, Izard, and Ackerman (2000) found that after controlling for age, gender, and verbal ability, family environment factors such as family instability and caregiver depression were marginally related to anger attribution bias. Likewise, Shultz and Shaw (2003) found evidence for socio-demographic disadvantage and maternal depression predicting maladaptive response generation in boys.

These findings confirm the role of contextual factors such as exposure to community violence, exposure to violent media, and socio-demographic disadvantage as antecedents of maladaptive social information processing patterns in children. The following section seeks to combine the literature on parenting, social information processing, and child adjustment to examine the research bearing on SIP as a mediating process of early parenting experiences and child adjustment.

Tests of the "Mediating Process" Hypothesis

Of those studies that consider both parenting and SIP in relation to positive and negative child adjustment, almost all involve tests of SIP as a mediator of links between parenting and adjustment outcomes. The social-cognitive functioning model as a mediator or life experiences (including parenting and other contextual influences) has been a common conceptual framework to explain the role of these influences on child outcomes. However, the path that provides a more meaningful explanation of the manner in which this takes place is through the mechanism of social information processing.

The mediating process through which social information processing explains the relation between prior child, family, and contextual factors and child outcomes has been widely explored and there has been reasonable attention directed towards parenting as a predictor within this link. Most of the studies that have explored a mediated pathway from early parenting to child outcomes, via SIP, have investigated the role of negative parenting as a predictor (Dodge et al., 1990; Dodge et al., 1995; Heidgerken et al., 2004; Schultz & Shaw, 2002; Weiss et al., 1992). Fewer efforts have targeted positive parenting as a predictor in this link (Gomez et al., 2001; Haskett & Willoughby, 2007).

Three studies that have more exhaustively examined the major components of SIP as a mediator of harsh parenting were conducted by Dodge et al. (1990), Weiss et al. (1992), and Dodge et al. (1995). All these studies were part of the Child Development Project sample and examined components of SIP as a mechanism of early parent physical harm and child aggressive behavior. All three studies varied in the nature of reporters of aggressive behavior and in the test of robustness of findings. For instance, Dodge et al. (1990) examined SIP as a mechanism and found a mediated pattern of findings across

three forms of aggressive behavior (i.e., observer, teacher, and peer). Likewise, Weiss et al. (1992) also provided support for a partial mediated role of SIP across observer, teacher and peer ratings of child aggressiveness. However, Dodge, et al. (1995) only examined teacher rated child conduct problems in grades 3 and 4 at the outcome. While Dodge et al. (1990) used regression analyses, Dodge et al. (1995) used a path analytic model, and Weiss et al (1992) used a more rigorous structural equation modeling analytic method. In addition, unlike other studies, the latter study found that the findings did not vary as a function of gender, SES, and family composition. All three studies used SIP indices such as encoding errors, hostile attributions, aggressive response generation, and positive evaluation of aggressive behavior. It may be concluded from the above studies that physical harm by parents has its effect on child aggressive behavior by altering the patterns of processing social information and this pattern of findings is consistent across types of SIP, reporters of aggressiveness, and after controlling for socio-demographic factors.

Other studies, however, have selectively measured specific SIP indices as mediators and examined different forms of negative parental behaviors. Brendgen et al. (2002), for instance, found that positive evaluation of aggression was a mediator of parental aggression towards the child and children's delinquency related physical violence in a sample of adolescent boys from Montreal, Canada. Schultz and Shaw (2002) in a sample of economically disadvantaged boys found evidence for a mediation effect for aggressive response generation in the relation between parental depression and children's conduct problems. Similarly, Heidgerken et al. (2004) found that social goals of revenge and dominancy completely mediated harsh parenting and child aggressive

behavior in a sample of elementary school children. The studies discussed above have provided robust support for the finding that SIP mediates the relation between negative parental discipline and physical harm and child behavior problems. However, positive parenting might also play a role in lower behavior problems through the mechanism of adaptive cognitive information processing. The role of positive parenting as a predictive link in this mediated model has been scarcely explored. Research investigating this pathway with positive parenting as an antecedent will be explored below.

Pettit et al. (1988) conducted one of the earliest studies to explore a mediating process pathway with positive parenting as an antecedent in a sample of 46 preschool-aged children. They did not find evidence for a mediated pathway for proactive teaching (positive parenting), but they did find that social problem solving mediated the link between mothers' endorsement of aggression and children's social skill as rated by teachers. Likewise, Gomez and colleagues (2001) examined both positive (supportive) and negative (control) parenting in a sample of 89 Australian aggressive clinic-referred children. They found evidence that SIP indicators (i.e., hostile attribution and hostile response selection) modestly mediated the association between maternal support and aggressive behavior. Another recent study that examined positive parenting as a predictor was conducted by Haskett and Willoughby (2007), who combined parenting positivity and negativity in a single construct of parenting within a latent structural equation model. They examined nurturing, non-harsh parenting as indicated by sensitivity, positive regard, absence of flatness of affect, and disengaged behavior towards the child. They were unable to test for mediation because SIP did not account for child adjustment in their study after controlling for the effect of parents' emotional health and social

cognition on parenting behaviors. However, they did find that parenting did play an important role in SIP and in child adjustment.

The studies reviewed above suggest that there is support for SIP as a mediator of parenting (especially negative forms) and child problem behaviors, although variations exist in the nature of SIP factors mediated or in the strength of these associations (Mize et al., 2000). In contrast, there are mixed findings for the role of positive parenting in this mediating process model. The proposed study advances this literature by examining positive parenting antecedents of SIP as a mediator. Of the three studies reviewed above on SIP as a mediator of positive parenting (i.e., support, positive regard, sensitivity, and engaged parenting) only Gomez et al. (2001) found evidence for a mediation of SIP between positive parental support and aggressive behavior.

While it may be essential to target greater research attention on adaptive socially competent outcomes, a subsequent need is to highlight research efforts towards an exploration of patterns of adaptive cognitive processing. The time is ripe for the field to look beyond the traditional focus on maladaptive cognitive behavior patterns, towards an understanding of factors that comprise positive forms of social cognitive functioning. Few studies that have explored the role of SIP as a mediator, or explored SIP and child outcomes, have examined positive social information processing factors. Exceptions among these include studies exploring encoding relevance, benign attributions, competent response generation, and negative evaluations of aggressiveness (Dodge et al., 1990; Haskett & Willoughby, 2007;Nelson & Crick, 1999; Runions & Keating, 2007). Given that the social information processing models arose out of a need to explain child psychopathology and aggressive behavior problems (Dodge, 1993; Dodge, 2006), and

maladaptive behavior problems have been the focus of most of this research, it is no surprise that empirical work in this literature has emphasized biased processing patterns. For instance, encoding errors and inaccuracy are emphasized over encoding accuracy and fluency; hostile attribution biases over benign attribution biases; aggressive response generation over competent response generation; and finally, positive aggressive response evaluation over negative aggressive response evaluation.

The current study attempts to address the prominent gap within the literature, specifically on the lack of empirical support for SIP as a mediator of positive parenting factors. The literature has suggested linkages between positive parenting, SIP, and child adjustment. For instance accumulating research suggests that parents who show greater engagement and involvement, display positive regard and warmth, and provide a positive relational environment characterized by calm discussion and guidance towards their children, are more likely to have children with less biased cognitive information processing patterns in social situations (Criss, Shaw & Ingoldsby, 2003;Gomez et al., 2001;Haskett & Willoughby, 2007). Also, as suggested earlier, many positive parenting dimensions, including approval, guidance, synchrony (Rothbaum & Weisz, 1994), proactive teaching (Pettit & Bates, 1989), and parental involvement (Pettit et al., 1997) have been found to be negatively associated with behavior problems in children. Similarly, there is accumulating evidence that specific SIP indicators such as encoding, interpretation, response generation, and response enactment predict child behavior problems (e.g., Dodge et al., 1995; Dodge et al., 2003; Lansford et al., 2006; Orobio de Castro et al., 2002; Weiss et al., 1992; Yoon, Hughes & Gaur, 1999). These findings

suggest that it may be pertinent to test for SIP as a mediator of positive parenting with child adaptive and maladaptive behavioral outcomes.

Conclusion. From the literature reviewed so far we can suggest three conclusions about the SIP, parenting, and child adjustment literature: First, as mentioned earlier, SIP has been found to be associated with both positive (e.g., social competence) and negative child adjustment (e.g., aggression, delinquency, violence, poor social preference), although the evidence is stronger in support of SIP associations with negative adjustment outcomes. Second, parenting (and other socialization factors) have been linked to variations in SIP and child positive and negative adjustment. Third, SIP has been found to mediate parenting→adjustment links, though the magnitude and consistency of these findings vary considerably (Mize et al., 2000) as noted earlier. The current research attempts a more rigorous test of mediation by controlling for earlier levels of child adjustment, i.e., whether SIP mediates the relation between positive parenting and change in child adjustment outcomes from kindergarten to grade 7. Finally, the research bearing on the role of SIP as a potential moderator will be considered in the next section.

Social-Information Processing as a Potential Moderator of Parenting→ Adjustment Links

As no previous study has directly tested the moderating role of SIP in the relation between parenting and children's adjustment outcomes, literature that supports this possibility will be reviewed in this section. The relevant evidence is drawn from research on children's personality and temperament as moderators and from research on qualities of children's peer relations as moderators.

Personality and temperament as moderators. Some research has suggested that positive SIP of prosocial individuals may serve as a buffer against adverse social outcomes (Nelson & Crick, 1999). While this suggests a moderating role of SIP in the relation between positive parenting and child adjustment, no prior study has tested this link. Some theoretical conceptions are consistent with the notion of child characteristics as a moderator, i.e., having differential effects based on different environmental influences. For instance, the hypothesis of organismic specificity (Wachs, 1991) suggests that individuals respond differently to the environment (e.g., parenting) according to qualities of their own level of reactivity. Likewise, Belsky's (1997) differential susceptibility hypothesis suggests that the environment does not treat all individuals the same, and that susceptibility to environmental influences varies as a function of individual traits. To the extent that SIP styles reflect dispositions to process information in a certain way (Crick & Dodge, 1994), SIP might be said to resemble personality patterns. Personality has been defined as "an individual's characteristic patterns of thought, emotion, and behavior, together with the psychological mechanisms--hidden or not--behind those patterns" (Funder, 2001, p.2). Using the analog of personality we can begin to explain how SIP patterns may serve to moderate parenting and child outcomes. Positive personality styles according a good share of research have been shown to moderate the relation of negative parenting and child adjustment (Van Leeuwen et al., 2007; O'Connor & Dvorak, 2001; Prinzie et al., 2003).

For instance, O'Connor and Dvorak (2001) found that personality traits moderated the relationship between parenting and child problem behaviors in a sample of 402 ninth grade students. Essentially, personality moderated the relation between positive

parenting behaviors such as mother reasoning, father support, reasoning, and parental consistency and monitoring. Specifically, they found that ego resiliency (adaptive, resourceful, and flexible responses to stress) moderated maternal harshness and problem behaviors i.e., resilient males were low in aggression regardless of the degree of maternal harshness they received, while less resilient males were increasingly aggressive at high maternal harshness. Likewise, both Prinzie et al. (2003) and Van Leeuwen et al. (2007) found that low levels of benevolence and conscientiousness were moderators of parenting and externalizing behavior. While Prinzie et al. (2003) focused on negative parenting as a predictor in this link, Van Leeuwen et al. (2007) explored the moderating role of child personality in the relationship between positive parenting and child externalizing behavior in a sample of 801 clinic referred and non-referred children from a Belgium. The findings of this study suggested that at low (versus high) levels of personality factors (e.g., benevolence, conscientiousness, and emotional stability) there was a negative association between positive parenting and child externalizing behavior.

Similarly, the literature on temperament as a moderator of parenting and child positive and negative adjustment seems to provide similar support for such a model. In a recent review of the literature on the conditional role of temperament, Gallagher (2002) elaborated on Belksy's differential susceptibility hypothesis. They stated that children with less reactive (positive) temperaments were less likely to resist the effects of parent socialization, and therefore would develop social competence independent of parent socializations, whereas the opposite effect would occur for those who were more reactive. Davis, Doelger and Lemery-Chaflant (2006) found that child effortful control was a moderator of low positive parenting by father, when predicting children's externalizing

symptoms. Specifically, low effortful control was a conditional factor for the positive relationship between low positive parenting and child externalizing behavior, whereas there was no association for those with high effortful control. Kochanska, Aksan and Joy (2007) found across two sets of studies of 200 children and their mothers that for relatively fearless children, mother-child positive relationship predicted future successful socialization outcomes in mother-child dyads. Similarly, Kochanska (1997) found that maternal gentle discipline predicted higher conscience scores for children high in fearfulness, and maternal responsiveness predicted higher conscience scores for children low in fearfulness. In a study on difficult temperament, Van Zeijl et al., (2007) found that for children with at risk temperaments, positive discipline predicted less aggression. The above studies lend support to the differential susceptibility hypothesis. They suggest that while the absence of positive parenting can be detrimental to children's social and behavioral adjustment, characteristics within the child may eventually determine whether parenting (particularly positive parenting) is redundant, or in fact does predict child outcomes. Therefore, given the findings indicative of the role of personality and temperament as moderators of parenting and child adjustment, it seems plausible to infer that social information processing would play a similar role in this link.

Peer relationship experiences as moderators. As discussed earlier, peer relations play a significant role in SIP development, and the quality of peer relationships has been found to moderate links between parenting and child adjustment outcomes (e.g., Schwarz et al., 2000). A child, who is rejected by the peer group and has negative experiences with peers, would be expected to develop an SIP style characterized by biases and deficits (e.g., a tendency to make hostile attributions of intent). On the other hand, a child who is

accepted by the peer group and establishes friendships with peers might be expected to develop a more benign SIP style.

A series of studies using the Child Development Project (CDP) data have examined peer relationships as moderators of the parenting → adjustment link. For example, Schwartz et al. (2000) found a robust role for child friendship as a moderator in the relation between negative parenting factors such as restrictive discipline, abuse, maternal hostility, and peer victimization. Essentially they suggested that having greater number of friendships protected children who were exposed to adverse parenting at an earlier time point from later peer victimization. Thus, positive experiences within the peer relationship domain in the form of friendships as well as acceptance, buffered children from the harmful effects of negative family experiences which eventually accounted for negative child outcomes. Likewise, Criss et al. (2002) found in the Child Development Project sample of 585 children followed from kindergarten to grade 2 that two positive aspects of peer relationships, namely, peer acceptance and friendships moderated the relationship between negative parenting / family factors (i.e., harsh parental discipline, violent marital conflict and ecological disadvantage) and children's externalizing behavior. Essentially, at low and mean levels of peer acceptance and friendships, harsh discipline, marital conflict and ecological disadvantage were positively related to externalizing behavior. In a follow-up study of the Child Development Project sample, when the participants were in early adolescence, Lansford et al.(2003) found that the relation between high levels of negative parenting (i.e., unilateral parent decision making) and teacher-rated externalizing behavior was attenuated by high friendship quality and positive peer group affiliation. In contrast, high levels of friends and peer

group antisocial behavior exacerbated the relation between harsh discipline and externalizing behavior.

Prior research has also supported the argument that peer rejection is linked to poor SIP skills such that children demonstrating negative peer status generate fewer assertive solutions, have more intense solutions and show less adaptive planning (Asanrow & Callin, 1985), while children with popular and average status demonstrate greater skill at intention cue detection (Dodge, Murphy & Buchsbaum, 1985). In fact, not only do peer relationships and peer rejection influence SIP skills, but also, positive peer relationships might provide an adaptive context for the child which may buffer the child from the harmful effects of prior negative experiences within the family context. For instance, individuals are more likely to have positive attributions towards peers in social situations that involve their mutual friends rather than unfamiliar peers (Burgess et al., 2006) and interactions with prosocial versus aggressive peers play a role in SIP processes consistent with their friends behaviors. Thus, peer relationships are associated with children's SIP skills, and evidence has supported the notion of peer relationships as buffers of the relation between negative experiences (e.g., aversive experiences within the family set up) and children's social adjustment. Given these findings, it seems reasonable to expect that SIP might serve as a moderator of parenting in the same manner that positive peer relationships have been shown to be a moderator of parenting. (e.g., Criss et al., 2002; Lansford et al., 2003; Schwarz et al., 2000).

Conclusion. Both theoretical suggestions and research on child characteristics, particularly those pertaining to stable trait like qualities as indexed by personality styles and temperamental characteristics, as well as peer relationship characteristics underscores

the moderating role of these child characteristics in the associations between both kinds of parenting and child adjustment outcomes. Social information processing indexes have been considered to be dispositions to encode to certain characteristics of a stimulus, make judgments of intent, generate possible responses and evaluate the likely outcomes of those responses. The reviewed literature indirectly suggests that SIP may moderate the relationship between parenting and child adjustment.

Hypotheses

The research reviewed above provides a basic for supposition of two models (namely, the mediating and moderating role of SIP) that represent the relationship between parenting, SIP and child adjustment. The following hypotheses are addressed to answer various questions that address these models.

1. Positive parenting (i.e., warmth, involvement, guidance, and discussion) in early childhood will predict a positive social information processing (SIP) style (i.e., accurately encoding social cues, making benign attributions of peer intent, generating prosocial solutions to interpersonal challenges, and positivity evaluating competent responses to resolving conflicts with peers) in the elementary school years.
2. Positive parenting will predict higher levels of socially skillful behavior and lower levels of aggressive behavior in grade 7, controlling for kindergarten socially skillful behavior and aggressive behavior, respectively.

3. Positive SIP will predict higher levels of socially skillful behavior and lower levels of aggression in grade 7, controlling for kindergarten socially skillful behavior and aggressive behavior, respectively.
4. Positive SIP will mediate the relation between positive parenting and child adjustment outcomes, after controlling for kindergarten adjustment outcomes. The relations between positive parenting and adjustment outcomes (aggression and social skills) will be significantly reduced after controlling for positive SIP (i.e., the indirect effect will be significant).
5. Positive SIP will moderate the relation between positive parenting and child adjustment outcomes, after controlling for kindergarten adjustment outcomes. A statistically significant interaction between positive SIP and positive parenting could take two forms. Positive SIP might strengthen the relation between positive parenting and adjustment outcomes. If this were the case, then positive parenting would be more strongly associated with increases in social skill and decreases in aggression when positive SIP was high (vs. low). Alternatively, positive SIP might serve a compensatory function when positive parenting was low. If this were the case, then low levels of positive parenting would be more strongly associated with decreases in social skill and increases in aggression when positive SIP was low (vs. high).

III. Method

Sample

The children and their families in this study were participants of the Child Development Project (CDP), an ongoing, multi-site longitudinal study of the risk and protective factors in children's development of competence and behavior problems (Dodge, Bates, & Pettit, 1990; Pettit, Bates, & Dodge, 1997). Participating families were recruited during kindergarten pre-registration from three geographical areas (Nashville and Knoxville, Tennessee, and Bloomington, Indiana) in 1987 (cohort 1) and 1988 (cohort 2). Parents were randomly approached, and asked if they would participate in a longitudinal study of child development. Approximately 75% of those initially contacted, agreed to participate. The study sample consisted of 585 families at the first assessment. This sample was demographically representative of the schools and communities from which it was drawn in terms of sex (52% males), ethnicity (81% European American, 17% African American, 2% other groups), single parenthood (25% single parents), and SES (26% low SES). The sample was predominantly middle class, with an average Hollingshead (1979) score of 40.4 (SD = 14). However, the participants represented a range of socioeconomic status, with 9%, 17%, 25%, 33%, and 16% of the families classified in the five classes of Hollingshead's scale (from the lowest to the highest). Follow-up assessments were conducted annually through age 25 with 82% retention in

the most recent data collection wave. Follow-up data in grade 7 (teacher ratings of social skill and aggression, described below) were available for 73% of the original sample.

Measures

Positive parenting.

Observational, interview, and questionnaire data collected in the first year of the project (the summer before and early fall of kindergarten) were used to assess positive parenting: warmth, involvement, guidance, and discussion.

Warmth. The primary home interviewer completed a Post-Visit Inventory which involved a rating of mothers' behavior toward the child. The interviewer noted the occurrence (*occurred* = 1, *did not occur* = 0) of each of four behavioral events: "parent speaks to child with a positive tone," "parent expresses a positive attitude when speaking of child," "parent initiates positive physical contact with child," and "parent accepts positive physical contact from child." If an item could not be coded due to insufficient information (e.g. if the child did not initiate any positive physical contact), it was coded as 0. Exploratory factor analysis for the warmth ratings revealed a one-factor solution that included 49% of the variance. The four items were composited to create an average scale score for observed mother warmth towards the child ($\alpha = .64$). This measure was adapted from a prior study, which used warmth as an index of supportive parenting (Pettit et al., 1997).

Involvement in the child's early peer experiences. As part of the in-home interview, parents were asked to describe their children's exposure to peers in each of two developmental periods (age 1 to 4 and age 4 to 5). Interviewers asked the parent to identify the situations in which the child interacted with other children, whether the child

had been around any children that the parent considered aggressive, whether the child had any close friends that she or he talked about, and the extent to which the child had been involved in conflicts with peers. Based on the parents' responses, the interviewers rated the "parent's awareness of and concern about the child's social experience and willingness to use such considerations to structure the child's experiences." The interviewer impressions were summarized on an extensively anchored 5-point rating scale, in which a "1" indicated that the parent was unaware or uninterested in most of the child's peer experiences, and a "5" indicated a very high level of parental interest and involvement. An exploratory factor analysis suggested that the two involvement measures generated a single factor that included 91% of the variance. The correlation between independent raters was a modest $r = .32$, but the alpha coefficient (.90) across eras was high. The ratings across two developmental periods were averaged to create an overall positive involvement scale score (Pettit et al., 1997).

Proactive guidance. The Concerns and Constraints Questionnaire was used to assess proactive guidance provided by parents. Parents were presented with five stories in which the child misbehaved in his or her interactions with peers (e.g., child refuses to relinquish a toy after a reasonable length of time). Parents then were asked two questions for each story: The first question was: "What would you do if [your child] acted this way?" The response was coded as 1 if it included reasoning, explanations, discussion, inductive reasoning or proactive guidance and 0 if not. The second question was: "What would you do to prevent your child from acting this way in the first place?" Parents' responses were coded as "doing nothing (unpreventable)" (1), "after the fact – non-preventive power assertion, punishment" (2), "after the fact – reasoning, proactive

guidance" (3), "before the fact – preventive but vague and general" (4), and "before the fact – preventive, situation and method and specific" (5). Parents who used either of the latter two categories were scored as "1"; parents using any other categories were scores as "0." Therefore, each of the 5 items for parental guidance across the two questions were standardized and combined with their counterpart items in each story. The combined item across the five stories was construed as a measure of parental adaptive strategies to deal with child misbehavior and generated a one-factor solution that included 42% of variance. This item had an internal consistency of .66 across the five stories and was adapted from prior research on positive parenting (Pettit et al., 1997; Pinderhughes, Dodge, Bates & Pettit, 2000).

Discussion. The Conflict Tactics Scale (CTS) (Straus, 1979) assessed parental calm discussion towards the child. The Conflict Tactics Scale is a set of ratings by the parent to describe behaviors used by family members in the course of disagreements and situations that may give rise to conflict. Mothers were asked to recall the child's development from age 1 to age 4 and age 4 to age 5 and to answer the question: "All families have disagreements. What kind of disagreements have you and your child had in the past?" Following this question, mothers were asked to rate the conflict resolutions tactics they used with a 7-point scale ranging from 0 (never) to 6 (almost every day). An exploratory factor analysis was performed for the four-item measure of parental discussion, which included 73% of the variance. The internal consistency of this measure was also high ($\alpha = .88$). The individual items were standardized since the variables were coded on different scales across the two cohorts. The Z scores for the four items were then used to create the composite. The items "tried to discuss an issue calmly" and "did

discuss an issue calmly" in each of the two developmental periods (age 1-4 and age 4-5) were used to create a four-item composite of calm discussion in disciplinary encounters with their children (Pettit et al., 1997). Next, the results of confirmatory factor analyses will be presented for positive parenting. These analyses were undertaken to confirm the factor structure of single indicators of positive parenting.

Confirmatory factor analysis of positive parenting. Before testing the hypothesized models, a confirmatory factor analysis was conducted for positive parenting. The confirmatory factor analysis was conducted using AMOS version 16. AMOS manages missing data by way of the Full Information Maximum Likelihood (FIML) procedure, which provides unbiased parameter estimates and standard errors when data are missing at random (Arbuckle & Worthke, 1999). A good model is determined by the fit between the sample covariance matrix and the estimated population covariance matrix. Acceptable fit of a model was determined by various fit statistics. The χ^2 statistic with its degrees of freedom and *p*-value is the most prominently used indicator of absolute model fit which estimates how well a model fits the sample data (Bollen 1989). A well fitting model is expected to possess a non significant χ^2. However, the χ^2 statistic is sensitive to large sample size and model complexity (Byrne, 2001), because in large samples, trivial differences between sample and population covariance matrices are often significant. Therefore, the χ^2 may not be a good approximation of model fit in large samples. One commonly used substitute to the χ^2 fit statistic in large samples is the ratio of the χ^2 to the degrees of freedom (χ/df). An acceptable model may have a χ/df value between 1 to 3 (Arbuckle & Worthke, 1999). Given the limitations of the chi-square test of model fit in large samples, alternative comparative indicators of model fit were

assessed to provide information on the adequacy of the model. Acceptable standards emphasize the use of the other indices, such as the Tucker-Lewis Index (TLI), Comparative Fit Index (CFI), and the Root Mean Square Error of Approximation (RMSEA). The strength of the TLI index is that it is unaffected by sample size (Bollen, 1989). The CFI also known as Bentler's Comparative Fit Index, assesses fit by comparing the existing model with a null model (i.e., independence model) that hypothesizes no relationships among the latent variables (Bentler, 1990). Both the CFI and TLI have a range from 0 to 1, and acceptable model fit is professed with CFI and TLI values > .90. The Root Mean Square Error of Approximation (RMSEA) or discrepancy per degree of freedom is an estimate of model fit that corrects for model complexity and assesses the fit of the model in comparison to a saturated model (Byrne, 2001; Steiger, 1990). Conventional estimates suggest that a model has a good fit if the RMSEA is <.05, although adequate fit can be claimed with a RMSEA value <= .08 (Garson, 2009). In general, it is acceptable for the RMSEA to have a nonsignificant *p* value in order for the model to have a good fit (Byrne, 2001).

A one-factor solution was proposed for the positive parenting measures of warmth, involvement, guidance, and discussion. The first factor of warmth consisted of four items (e.g., "speaks to the child with a positive tone", "initiates positive physical contact towards the child"). The second factor of *involvement* consisted of two items (e.g., "Rating for parent's expressed interest, concern, and effort at monitoring and planning their child's social development") across ages 1-4 and 4-5. The third factor of *proactive guidance* consisted of five items for each of the five hypothetical stories presented to parents. Finally, the fourth factor of *discussion* consisted of four items (e.g.,

"Tried to discuss an issue calmly", "Did discuss an issue calmly"). The overall positive parenting measurement model with warmth, involvement, proactive guidance and discussion fit the data well ($\chi^2(1) = 1.30$, $p = .25$, CFI = 1.00, TLI = 1.00, RMSEA = .02, $p = .54$) which suggested an overall latent construct of positive parenting could be accounted for by a single factor solution.

Social Information Processing

Social information processing was assessed in the summers prior to kindergarten and grades 1, 2, and 3. Cross-grade composite indexes were formed for four aspects of positive social information processing style: encoding skill, benign attributions, competent responses generation, and competent response endorsement. Children were presented with 24 video vignettes that depicted situations in which child protagonists attempted unsuccessfully to enter peer groups or encountered provocations from peers. An example of a vignette was a situation where the protagonist was painting in class when a peer asked to look at his/her painting and accidentally knocked the target child's arm. In each vignette, children were told to imagine being the protagonist, and answer specific questions about the video situation. Children were also presented with a series of cartoon pictures and brief verbal descriptions of the cartoon events (Home Interview with Child) and were asked questions to assess their attributions of the cartoon stimuli.

Encoding relevance. To assess the ability of children to attend to appropriate and relevant social cues (Dodge, Pettit, McClaskey, & Brown, 1986), immediately after the negative outcome was presented, the video stimulus was stopped, and the child was asked to recall what had happened in the story. Responses were recorded by the interviewer and

scored on the basis of predetermined criteria as 0 (fully relevant), 1 (partially relevant), or 2 (fully irrelevant). Fully relevant responses cited cues in the video stimulus that were germane to the interpersonal actions of the actors, whereas fully irrelevant responses cited only cues that were not actually depicted or cues that had no bearing on the interpersonal actions of the actors. Partially relevant responses included citations of both relevant and irrelevant cues or minimal citation of relevant cues. Chance-corrected inter-rater agreement (by kappa) on this scoring has been evaluated in past studies with this sample (e.g., Weiss et al., 1992) as greater than .80. Encoding relevance when computed across kindergarten to grade 3 had an internal consistency of .54. The reliability increased to .58 when the item for grade 3 was deleted. Responses were averaged across vignettes to create a single encoding score (from kindergarten to grade 2). The alphas from kindergarten to grade 2 were .79, .76, and .71 respectively, for the three grades. The scores averaged across the three years had an alpha lower than the alpha of each individual grade because the cross year stabilities were not very high, and the small number of items in the scale influenced reliability.

Benign attributions. The Home Interview with Children (HIWC) measure was used to assess benign attributions of intent. Each child was presented with cartoon stimuli depicting hypothetical peer entry and provocation situations that were ambiguous. After presenting the vignettes, children were asked why they thought the peers in the eight cartoon stories behaved as they did. Each attribution was coded as hostile or benign, and a composite attribution score was created across the eight stories by taking the proportion of the stories in which children interpreted the peers' intentions as benign ($\alpha = .64$ across

the four years). The alphas from kindergarten to grade 3 were .73, .73, .70 and .71, respectively, for the four grades (Lansford et al., 2006).

Competent response generation. Children's generation of assertive and prosocial strategies to deal with peer dilemmas were assessed via the 24 video vignette measures. In the video measure children were asked how they would respond if each of the 24 video situations had happened to them. Each response was coded as being: (a)aggressive, (b) withdrawn or inept, or (c) assertive and competent. Responses were recorded by the interviewer and coded first into one of 13 categories that were later collapsed into three categories: aggressive, passive-inept, and competent. The competent response category was used in the current study. Competent responses included direct verbal appeals, bargaining, prosocial compliments, and other actions likely to lead to successful outcomes. The kappa for inter-rater agreement on response generation across competent, aggressive, and passive categories has been greater than .80 in past reports (Weiss et al., 1992). The alpha for the combined score on proportion of competent responses was .63 and the alpha across four years were .89, .89, .90 and .89, respectively, from kindergarten to grade 3 (Lansford et al., 2006). As in the previous case, the reliability was influenced by the small number of items and the relatively lower cross-year stabilities.

Competent response evaluation. Positive evaluation of prosocial strategies to peer dilemmas was also measured with the video measure of SIP. Each child watched the video stimulus further, and was presented with each of three possible alternative behavioral responses to each vignette. These responses included aggressive, passive-inept, and competent behaviors portrayed by the child actors in the videos. After each response was presented, the child was asked to evaluate the response on a pictorial scale

ranging from 1 (*very bad*) to 4 (*very good*), to determine their approval or disapproval of each type of behavioral response. The internal consistency of the competent response evaluation cross year index from kindergarten to grade 3 was .58. The alpha increased to .66 when the grade 3 responses were deleted. Therefore, evaluations of the competent responses were averaged across the three years. The alphas across from K to grade 2 were .89, .91, and .90 respectively (Lansford et al., 2006).

Confirmatory factor analysis of positive social information processing. *A* confirmatory factor analytical model of social information processing included a one factor model with four indicators, namely, encoding relevance, benign attributions, competent response generation, and competent response evaluation. Two SIP measures, benign attributions and response generation comprised of cross year indicators for social information processing from kindergarten to grade 3, while the other two constructs, encoding relevance and response evaluation, comprised of composites from kindergarten to grade 2. This one factor model with four indicators of social information processing variables had an excellent fit to the data ($\chi^2(1) = .11$, $p = .73$, CFI = 1.00, TLI = 1.00, RMSEA = .00, $p = .87$).

School Adjustment

Aggressive behavior problems. During the spring of each school year, the child's teacher completed the 113-item Child Behavior Checklist- Teacher Report form (Achenbach, 1991). Examples of items in this scale included: "physically attacks people", "defiant, talks back to staff", and "destroys his/her own things". For each item the teachers note whether the statement is not true for the child (0), somewhat or sometimes

true (1) or very often or often true (2). The 25 items in the aggression scale (e.g., "the child gets in fights", "disobedient at school") were averaged to create an index of children's externalizing behavior problems in kindergarten and grade 7 (αs = .94 and .95, respectively).

Confirmatory factor analysis of aggressive behavior. Prior to confirming the factor structure of the 25-item teacher-rated aggression scale in kindergarten and grade 7 based on the Child Behavior Checklist (CBCL), an exploratory factor analysis was conducted. The results of the unrotated solution of the exploratory factor analysis for year 1 aggressive behavior suggested that a one factor solution was the most acceptable as indicated by the scree plot and the highest factor loadings on the first component. The only exception to this was the item "destroy's own things" which had higher loadings on the third component. However, since the internal consistency was very high (α = .94) and all the items seemed reflect a single construct, this item was retained as has been done in prior studies that have used the TRF version of the Child Behavior Checklist (Dodge, Pettit, & Bates, 1990). Likewise, the exploratory factor analysis of the grade 7 teacher rated aggressive behavior indicated that a one factor solution was the most appropriate as suggested by the high steep from the first to the second factors in the scree plot and the highest factor loadings in the first components. As in the earlier case, the item "destroy's own things" did not load as well on the first factor, however since the internal consistency of the whole scale was very high (α = .95) and the removal of any item did not increase the reliability, this item was retained.

Given the unidimensionality of the data, as confirmed by the results of the exploratory factor analysis, the 25 items of the aggressive behavior scale were randomly

parceled to form five composites which had a similar internal consistency as the original 25 item scale. Item parceling may be used in structural equation modeling (SEM) when the factor structure of the scale is known to be unidimensional (Holt, 2004). Item parceling may also improve model fit in complex models because it produces fewer parameters to estimate, fewer correlated residuals, and thereby less sampling error (Little, Cunningham, Shahar, Widaman, 2002). The confirmatory factor model of kindergarten and grade 7 aggressive behavior ($\chi^2(18) = 21.94$, $p = .24$, CFI = 1.00, TLI = 1.00, RMSEA = .02, $p = .99$) indicated a very good fit.

Social skills. Children's social skills in peer relations were assessed with the Teacher Checklist of Peer Relations (Coie & Dodge, 1988). This checklist contains a set of items that assess teacher judgments of children's social skillfulness on 5 point scales (ranging from "*very poor*" to "*very good*") and includes items such as "understands others' feelings" and "is aware of the effects of his/her behavior on other children." The seven items comprising this scale were averaged to create a measure of social skills in peer relations in kindergarten and grade 7 (αs = .95 in both grades) (Pettit et al., 1997).

Confirmatory factor analysis of social skills. Exploratory factor analyses were conducted for the teacher ratings of social skills in kindergarten and grade 7 to reveal the unidimensionality of the items indicative of the construct of social skills. For both kindergarten and grade 7 scores, a one factor solution included the maximum variance for kindergarten (77%) and grade 7 (79%) social skills. The scree plot and the factor loadings of the unrotated factor solution also indicated a one factor solution. A confirmatory factor analysis model for social skills across the two time periods ($\chi^2(48) = 61.40$, $p = .09$, CFI = 1.00, TLI = 1.00, RMSEA = .02, $p = 1.00$) revealed an excellent fit.

IV. Results

Overview

The goal of this study was to examine the interplay among positive parenting, positive social information processing, and child adjustment (i.e., aggression and social skillfulness). In the sections that follow, the descriptive statistics and correlations among study variables are presented. Before moving on to a summary of analyses and findings, the manner in which missing data were treated is described. Key hypotheses of direct and mediated links between positive parenting, positive SIP, and adjustment outcomes are tested with structural equation modeling. Finally, results of the macro level moderations are tested for overall SIP as a moderator of each specific type of positive parenting and child adjustment. Following the macro level moderations, a series of micro level (step specific) moderated regression analyses are presented. In the micro level moderations, each positive SIP step interacts with positive parenting in the prediction of adjustment outcomes.

Descriptive Analyses

Descriptive statistics for the key study variables are provided in Table 1. The internal consistencies of the measures in the analyses were generally acceptable and the correlations among the study measures were in the expected direction. Aggression, which

was rated on a scale from 0 to 2, had a low mean total score at both kindergarten (.19) and grade 7 (.22) with a range of 0 to 1.56 in kindergarten, and 0 to 1.64 at grade 7. This suggested that on average, the sample of target participants were not high on teacher rated aggressive behavior. The skewness values of aggression at both periods were around 2 and the kurtosis values were between 3 to 4. The frequency distribution of the two aggression variables indicated that they were positively skewed. However, being outcome variables it was advisable not to perform any data transformation methods due to problems with interpretability with transformed outcome variables. Some sources recommend that an absolute skewness value of 3 and a kurtosis index less than 10 is suggestive of acceptable univariate normality (Weston & Gore, 2006). Social skills were rated on a scale from 1 = *very poor* to 5 = *very good.* The descriptives indicated moderate levels of socially skilled behaviors in the sample at kindergarten (3.35) and grade 7 (3.75). Social skills at both kindergarten and grade 7 had acceptable skewness and kurtosis values close to 0 indicating normality.

Maternal warmth had a range of scores averaged across four items from a scale of 0 = *did not occur* to 1 = *occurred.* This variable had a mean of .81, suggesting that most mothers in the sample were observed to be quite warm. Involvement was rated on a scale from 1 = not aware to 5 = very aware and had a mean of 3.25, suggesting that parents in the sample were moderately involved towards their children. Proactive guidance was reported in standardized score units with a mean close to zero (.0003). Parental calm discussion also ranged in standardized score units with a mean of zero (-.004). An examination of the distributions of the parenting variables indicated that parental involvement, guidance, and discussion were somewhat symmetric. However, the warmth

variable had most of the scores on the higher end of the distribution. Thus, all the positive parenting measures had very good skewness and kurtosis values indicating univariate normality, with the exception of warmth which was somewhat negatively skewed (-1.27) and had a kurtosis index of 1.18. Nevertheless, since both of these values were within the acceptable departure from normality range as indicated by Weston and Gore (2006) and since all the other positive parenting variables had very good indices of normality, the maternal warmth index was not transformed.

Encoding relevance ranged on a scale from 0 to 2 and had a mean of .86, indicating that the children in the sample were accurately encoding the hypothetical peer situations. Benign attribution proportions had a mean of .34 suggesting that the average participant had low positive attributions about peer intent in ambiguous social situations. Competent response generation had a range from 0 to 1. The mean of .26 suggested that when asked to generate responses, the participants were less likely to generate many competent responses. Competent response evaluation had a scale of 1 = *very bad* to 4 = *very good*. The mean of 3.05 indicated that the sample, on average, was more likely to make prosocial evaluations of behaviors in peer situations.

An examination of the frequency distributions of each of the social information processing variables indicated that the distributions of three variables: benign attributions, competent response generation, and competent response evaluation had distributions that were symmetric enough. In the case of encoding relevance, most of the children had responses on the higher end of the distribution. The social information processing variables had very good skewness and kurtosis indexes with the exception of encoding relevance which had negative skew (-2.66) and positive kurtosis (15.23).

Nevertheless, since the skewness was within the acceptable range of 3, this variable was not transformed. In order to assess whether skewness affected the results of the study, the outcome variables, parenting indexes and the social information processing measures were transformed. The mediation hypotheses for aggression and social skills as the outcomes were tested with the transformed variables. The results of the mediation with the transformed variables did not change from the results of the hypotheses without transforming the variables. Therefore, all further analyses were performed with the original non-transformed variables.

Correlations among Key Study Variables

Zero-order correlations were computed between the measures of positive parenting, positive social information processing, and aggression and social skills (Refer to Table 2). Both aggression ($r = .41$, $p < .001$) and social skills ($r = .41$, $p < .001$) were moderately stable from kindergarten to grade 7. Both social skills measures were moderately to modestly negatively correlated with aggressive behavior problems, with the relationships between the concurrent kindergarten ($r = -.49$, $p < .001$) and concurrent grade 7 ($r = -.67$, $p < .001$) being higher than the cross time association of social skills with aggressive behavior. The cross time relationships of social skills with aggression were modestly related across time for kindergarten social skills with grade 7 aggression ($r = -.32$, $p < .001$), and kindergarten aggression with grade 7 social skills ($r = -.38$, $p < .001$). All four positive parenting variables were modestly positively correlated with each other ranging from $r = .10$, $p < .05$ to $r = .25$, $p < .001$. The four positive social information processing variables had low to moderate positive associations with each

other, ranging from r =.08, $p < .10$ to $r = .33$, $p < .001$. Seven out of the eight associations of the four positive parenting measures (warmth, involvement, proactive guidance, and discussion) with aggressive behavior were modestly negatively related as expected, ranging from $r = .07$, $p < .10$ to $r = -.17$, $p < .001$. The exception was the non-significant association between involvement and aggressive behavior in kindergarten. All the eight associations between positive parenting and social skills measures had modest positive associations, as expected, ranging from $r = .10$, $p < .05$ to $r = .17$, $p < .001$. As regards the associations between positive social information processing measures and aggressive behavior, seven of the eight associations were modestly negatively associated as expected, ranging from $r = -.13$, $p < .01$ to $r = -.23$, $p < .001$. The exception to this was the association between response evaluation and kindergarten aggressive behavior. All the eight associations of social information processing variables with socially skilled behavior had modest to moderate positive associations, ranging from $r = .15$, $p < .001$ to $r = .36$, $p < .001$. Thirteen of the sixteen associations between the four positive parenting and the four positive social information processing variables had low to modest positive associations ranging from $r = .08$, $p < .10$ to $r = .22$, $p < .001$. The exceptions were the associations of warmth and guidance with benign attributions, and the associations of warmth with response evaluation, which were non-significant (Refer to Table 2).

Treatment of Missing Data

All study hypotheses were addressed using SPSS and AMOS programs (version 16). AMOS utilizes a procedure of handling missing data called Full Information Maximum Likelihood (FIML) which performs maximum likelihood estimates when data

are missing at random (MAR) (Arbuckle, 2007). FIML is a method known to outperform other common methods used to handle missing data, such as listwise and pairwise deletion, mean and regression substitution, and LISREL's Similar Response Pattern Imputation (SRPI) (Division of Statistics + Scientific Computation, 2009). This estimation method uses all the information from the available data, computes a likelihood for the observed portion of each person's data, and accumulates, and maximizes this likelihood. In addition, one of the advantages of FIML estimation over other methods of estimating missing data is that it requires no data imputation and models typically converge faster (Worthke, 2009). The current sample was part of a longitudinal study where the initial assessment period of the participants had an N of 585. However, the study has an 82% retention rate in the most recent data collection wave. FIML handles missing data only when data are missing at random, unlike other missing data methods that do not require the data to be missing completely at random (Arbuckle, 2007). In order to assess whether the data were missing at random, a Missing Value Analysis was performed with SPSS. Little's Missing Completely at Random (MCAR) test is a chi-square test that allows an estimation of whether the data are missing completely at random. A non-significant χ^2 for this test indicates no pattern in the missingness of the data (Garson, 2008). The chi-square value for this test ($\chi^2 = 7148.89$, $df = 7380$, $p = .97$) was non significant, which suggested that the data are missing at random and no identifiable pattern affects the missingness of the data.

Hypothesis Testing

Hypothesis 1: Direct effect model of parenting to sip.

The first hypothesis was that positive parenting experiences (i.e., warmth, involvement, guidance, and discussion) in early childhood would be associated with a positive social information processing (SIP) style (i.e., accurately encoding social cues, making benign attributions of peer intent, generating prosocial solutions to interpersonal challenges, and making positive evaluations of competent responses to resolving conflicts with peers) in the elementary school years.

To explore this question, Structural Equation Modeling (SEM) analyses were conducted to examine the fit of the model in which a latent construct of four indicators of positive social information processing was predicted by a latent construct of four indicators of positive parenting (Refer to Figure 2). Due to the possibility that within factor indicators for parenting and social information would be part of the same measure or interviewer rating, measurement errors of indicators that were expected to be associated within the same latent factor were correlated (Schumacker & Lomax, 2004). This direct effect model of positive parenting at kindergarten as the sole predictor of positive social information processing from kindergarten to elementary school fit the data well (χ^2 (15) = 27.69, p = .02, χ^2/df = 1.85, CFI = .96, TLI = .90, RMSEA = .04, p = .80) and explained 35.8% of the variance in positive social information processing. (Refer to Table 3). The results of this model revealed that higher levels of positive parenting were associated with positive social information processing (b = .28, r = .60, p < .001). In general, these results suggested that that parents who were warm and involved, employed more active guidance to deal with child misbehavior, and who used calm discussion in

conflictual situations with children, were more likely to have children who were accurate in encoding social cues, tended to make more benign attributions of peers' intentions, generated more prosocial solutions to interpersonal challenges, and evaluated peer situations in more competent and assertive ways.

Hypothesis 2: Direct effect model of parenting to adjustment.

The second hypothesis in this study examined the role of positive parenting in kindergarten on changes in grade 7 aggressive and socially skilled behavior. It was anticipated that positive parenting would predict both types of adjustment outcomes after controlling for initial levels of adjustment. The results are tested separately for the two adjustment outcomes, namely, aggression and social skills.

Aggression as outcome. The direct effect model of latent positive parenting at kindergarten as the predictor of latent grade 7 aggressive behavior fit the data well (χ^2 (61) = 81.56, p = .04, χ^2/df = 1.34, CFI = 1.00, TLI = .99, RMSEA = .02, p =1.00) (Refer to Figure 3) and explained 29.5% of the variance in aggressive behavior (Refer toTable 4). An examination of the path coefficients revealed that kindergarten positive parenting was negatively associated with changes in aggressive behavior from kindergarten to grade 7 (b = -.37, r = -.28, p < .01). The results of this model revealed that higher levels of early childhood positive parenting were associated with lower levels of aggressive behavior problems from early childhood to early adolescence. In general, these results suggested that that parents who were warm, involved, employed more active guidance to deal with child misbehavior, and who used calm discussion in conflictual situations with

children at age 5, were more likely to have children who have reduced levels of aggression at age 13.

Social skills as outcome. The direct effect model of positive parenting at kindergarten as the predictor of grade 7 socially skilled behavior fit the data well (χ^2 (117) = 215.56, p = .00, χ^2/df = 1.84, CFI = .99, TLI = .98, RMSEA = .04, p = 1.00) (Refer to figure 4) and explained 23.4% of the variance in social skills (Refer to Table 5). An examination of the path coefficients revealed that positive parenting was positively associated with changes in socially skilled behavior from kindergarten to grade 7 (b = 1.36, r = .27, p < .01). The results of this model revealed that higher levels of early childhood positive parenting were associated with higher levels of socially skilled behaviors in early adolescence after controlling for kindergarten social skills. In general, these results suggested that that parents who were supportive, involved, and employed active guidance and calm discussion to deal with child misbehavior, were more likely to have children with superior social skills in the peer relationship context in adolescence.

Hypothesis 3: Direct effect model of sip to adjustment.

The third hypothesis in this study examined the role of positive SIP in elementary school on changes in grade 7 aggressive and socially skilled behavior from kindergarten. It was anticipated that positive SIP would predict both types of adjustment outcomes after controlling for initial levels of adjustment.

Aggression as outcome. The direct effect model of kindergarten positive SIP as a predictor of grade 7 aggressive behavior fit the data well (χ^2 (60) = 76.25, p = .08, χ^2/df = 1.27, CFI = 1.00, TLI = .99, RMSEA = .02, p = 1.00) (Refer to Figure 5), and explained

30.5% of the variance in aggressive behavior (Refer to Table 6). An examination of the path coefficients revealed that positive SIP was negatively associated with changes in aggressive behavior from kindergarten to grade 7 (b = -1.69, r = -.32, $p < .001$). The results of this model revealed that higher levels of positive SIP were associated with lower levels of aggressive behavior problems in early adolescence. In general, these results suggested that children who encode peer social situations with greater accuracy, have benign attributions, generate competent responses to peer situations, and evaluate prosocial responses more positively in the elementary school years are more likely to be more socially skilled in early adolescence.

Social skills as outcome. The direct effect model of positive SIP at kindergarten as a predictor of grade 7 socially skilled behavior fit the data well (χ^2 (116) = 237.88, p = .00, χ^2/df = 2.05, CFI = .98, TLI = .98, RMSEA = .04, p = .95) (Refer to Figure 6), and explained 39.6% of the variance in social skills (Refer to Table 7). An examination of the path coefficients revealed that a positive SIP style was positively associated with changes in socially skilled behavior from kindergarten to grade 7(b = 7.74, r = .57, $p < .001$). The results of this model revealed that higher levels of elementary school positive SIP were associated with higher levels of socially skilled behaviors in early adolescence. In general, these results suggested that a positive socio-cognitive style was associated with superior social skills with peers in social situations.

Hypothesis 4: Mediated model.

The fourth hypothesis in this study was that overall positive social information processing in the early elementary school years would serve as the mechanism for the

association between overall positive parenting in kindergarten and adjustment in grade 7. In order to test for mediation, specified assumptions need to be met as specified by Holmbeck (1997) and Baron and Kenny(1986). Three conditions need to be met: First, the predictor variable must be associated with the outcome; second, the predictor variable must be associated with the mediator; and third, the mediator must be associated with the outcome variable. If all these conditions are met in the predicted direction, the association of the predictor variable on the outcome must be less after accounting for the mediator in the equation. However, if the predictor variable has no association with the outcome variable after controlling for the mediator, then it would account for perfect mediation (Baron & Kenny, 1986). Holmbeck (1997) specifies a strategy of testing for mediation that pertains to Structural Equation Modeling. The first requirement is to test a direct effect model of the predictor (i.e., positive parenting) and outcome (i.e., aggressive behavior). Assuming an adequate fit, the next step is to test the fit of the overall mediation model with positive parenting, social information processing, and adjustment. Given an adequate fit of the overall model, all the three pathways from the predictor to the mediator, mediator to the outcome, and predictor to the outcome are examined. Evidence, for mediation can be claimed by comparing two models: an unconstrained overall mediation model where the predictor to outcome path is free to vary and a constrained model where the predictor to outcome pathway is constrained to zero. In order for significant mediation there should not be a significant χ^2 difference from the constrained model (with the direct effects from parenting to adjustment constrained) to the unconstrained model, i.e., the addition of the predictor to the outcome pathway to the constrained model should not significantly improve the fit of the model. Thus, the

previously significant, direct effect model pathway from the predictor to the outcome should become nonsignificant when the mediator is taken into account. Hoyle and Smith (1994) prescribe that it is also necessary to report the path coefficient from the predictor to the outcome in the direct effect model as well as in the unconstrained mediated model when the mediator is added in the model, in order to determine whether this pathway has decreased in significance (Holmbeck, 1997; Hoyle & Smith, 1994). The significance of the mediated (or indirect) effect will be further confirmed by the Sobel test of mediated effect as reported in MacKinnon, Warsi, and Dwyer (1995) and MacKinnon and Dwyer (1993). The equation for the Z value of the Sobel test is:

$$\textbf{z-value} = a*b/SQRT(b^2*Sa^2 + a^2*Sb^2).$$

In the equation above, the path from the predictor variable to the mediator is denoted as *a* and it's standard error is denoted as S_a; the path from the mediator to the outcome variable is denoted as *b* and its standard error is S_b (Baron & Kenny, 1986). The Sobel test and its significance was assessed by an online software by Preacher and Leonardelli (2001).

Aggression as outcome. In order to assess positive SIP as a mediator of positive parenting and child aggressive behavior, a direct effect model was assessed, as reported earlier (Refer to Table 4). The direct effect model indicated that positive parenting in kindergarten was significantly negatively associated with aggressive behavior in grade 7 (b = -.37, r = -.28, $p < .01$) and kindergarten aggression and parenting collectively explained 29.5% of the variance in aggressive behavior problems in grade 7.

Therefore, an unconstrained overall mediated model was estimated based on the significant direct effect from parenting to aggression (Refer to figure 7). This model had

positive parenting (predictor) predicting child aggression in grade 7 (outcome) and positive social information processing in elementary school (mediator), and social information processing predicting child aggressive behavior in grade 7. The overall mediation model controlled for kindergarten aggressive behavior. Therefore, it was a test of the mediation of positive SIP on the links between parenting and changes in child aggressive behavior. The unconstrained mediation model had a good fit (χ^2 (112) = 164.53, p =.001, χ^2/df = 1.47, CFI = .99, TLI = .99, RMSEA = .03, p = 1.00). An examination of the path coefficients of the unconstrained model indicated that positive parenting was positively associated with competent social information processing after controlling for kindergarten aggression (b = .22 , r = .59, p < .001), although it was not associated with aggressive behavior. Positive social information processing was negatively associated with aggressive behavior after controlling for kindergartne aggressive behavior (b = -1.12 , r = -.24, p < .05). The next model in the series was a constrained model with the parenting to aggression path constrained to be zero. The constrained model indicated a good fit to the data (χ^2 (113) = 166.10, p = .001, χ^2/df = 1.47, CFI = .99, TLI = .98, RMSEA = .03 p = 1.00). The null hypothesis was: Ho: β (parenting to aggression) = 0 i.e., the parenting to aggression pathway is zero in the population. A comparison of the unconstrained and the constrained model revealed that the unconstrained model did not have a significant improvement in fit because the $\Delta\chi^2$ was lower than the critical χ^2 at 1 degree of freedom ($\Delta\chi^2$ (1) = 1.57 < critical χ^2 (1)=3.84 p = .05). Therefore, we fail to reject the null hypothesis, i.e., the parenting to aggression pathway is indeed zero in the population (Refer to Table 8). This suggest that the mediation effect is significant because the unconstrained model with the direct path

free to vary does not significantly improve the fit of the model over the constrained model which has the mediated effect. In order to confirm the significance of mediation, the Sobel test of mediation was computed using the online Sobel test computer software by Preacher and Leonardelli (2001). The null hypothesis of the Sobel test was Ho: The indirect (mediated) effect was not significant in the population. The Sobel test of significance of mediation supported the earlier results of significant mediation of social information processing in the relation between positive parenting and child aggressive behavior (Sobel test Z = -1.97, p = .049). Thus, we can reject the null hypothesis that the mediation effect was not significant, because the Sobel test was found to be significant, suggesting a significant mediation of positive SIP style in the linkages between positive parenting and changes in aggressive behavior. The direct effect of parenting to aggression in the earlier model (b = -.37, r = -.28, p < .01) was reduced to non significance (b = -.25, r = -.15, p = .20). The percent of reduction in the direct effect was calculated by the formula (C-C`/C), where C= the unstandardized coefficient of the direct path with aggression regressed on positive parenting without controlling for the mediator, and C` is the unstandardized coefficient of aggression regressed on positive parenting when SIP has been controlled in the model. The percent of reduction of the direct effect from parenting to aggressive behavior after controlling for positive SIP was 49%. This suggests that the inclusion of positive SIP in the model reduced the association of parenting with aggressive behavior by almost half. All these findings suggest robust support for a mediating effect of positive social information processing in the association of positive parenting and changes in aggressive behavior from kindergarten to grade 7.

Social skillfulness as outcome. A direct effect model of positive parenting predicting social skills was reported earlier (Refer to Table 5). An examination of the path coefficient revealed that positive parenting was positively associated with changes in social skills from kindergarten to grade 7 (b = 1.36, r = .27, p < .01) and explained 12.2% of the variance in socially skilled behavior problems. The next step was to fit an unconstrained overall mediation model with positive parenting predicting positive social information processing and social skills, and social information processing predicting social skills (Refer to Figure 8). Kindergarten social skills served as a control in this model. The unconstrained overall mediation model had an excellent fit (χ^2 (184) = 325.11, p =.00, χ^2/df = 1.77, CFI = .98, TLI = .98, RMSEA = .04, p = 1.00) (Refer to Table 9). All the path coefficients were in the expected direction: positive parenting was positively associated with social information processing (b = .22, r = .53, p < .001) and social information processing was positively associated with social skills after controlling for kindergarten social skills (b = 7.87, r = = .59, p < .01). Finally, there was no significant association between positive parenting and socially skilled behavior in grade 7, after controlling for kindergarten social skills and positive social information processing in the model. A constrained model was fit with the direct pathway from positive parenting to social skills constrained to zero. The constrained model had a good fit (χ^2 (185) = 325.19, p = .00, χ^2/df = 1.76, CFI = .98, TLI = .98, RMSEA = .04, p = 1.00). The null hypothesis was that the pathway from positive parenting to social skills was zero in the population (Ho: β (Parenting to social skills) = 0 in the population). A $\Delta\chi^2$ test revealed that the unconstrained model with the direct effect pathway free to vary did not improve the fit over the model with the direct pathway constrained because the $\Delta\chi^2$

was lower than the critical χ^2 at 1 degrees of freedom $\Delta\chi^2$ (1) = .09 < critical χ^2 (1)=3.84 p = .05) (Refer to Table 9). A Sobel test was computed with the null hypothesis that the mediated effect was not significant in the population . The significance of the sobel test of mediation (Sobel test Z = 2.60, p = .009) by the Preacher and Leonardelli (2001) online Sobel test calculator indicated that we can reject the null hypothesis that the mediation effect was not significant. Therefore, it may be concluded that the mediation effect is statistically significant because the unconstrained model with the direct pathway free to vary did not significantly improve the fit of the model over the constrained model. Social information processing mediated the relationship between positive parenting and changes in socially skilled behavior from kindergarten to grade 7. Also, a previously significant direct effect from positive parenting to social skills (b = 1.36, r = .27, p < .01) was reduced to nonsignificance when the mediator was taken into account (b = -.21, r = -.04, p = .77). As in the previous case, the percent of reduction of the direct effect was computed by the formula (C-C`/C). C represented the unstandardized coefficient of the direct path with social skills regressed on positive parenting without controlling for positive SIP and C` was the unstandardized coefficient of the direct path with social skills regressed on positive parenting when SIP was controlled in the model. The percent of reduction of the direct effect when computed by this method indicated that the direct effect path was reduced by 84.56%. This suggests that when positive SIP was controlled in the model, the association of parenting with social skills was reduced by more than three-fourth. This reduction was greater than that reported for the mediation effect of SIP with aggressive behavior as the outcome. This provides support for a robust mediation of

positive social information processing in the association between positive parenting and changes in socially skilled behavior from kindergarten to grade 7.

Hypothesis 5: Moderated model.

The fifth hypothesis was that positive SIP would moderate the association between positive parenting and changes in children's adjustment from kindergarten to grade 7. This hypothesis was tested at two levels. First, a macro level moderation test was estimated for factor scores of overall social information processing as a moderator of each positive parenting index and adjustment using latent structural equation modeling (SEM). Given the multiple indicators of the predictors, it was meaningful to test the question using Structural Equation Modeling (SEM). Second, in order to assess whether each of the four social information processing patterns interacted with the four positive parenting indicators to predict child outcomes, a series of hierarchical moderated regressions were performed. OLS regression was chosen to estimate interactions at the micro level since single indicators were available for each type of parenting and SIP composites. Furthermore, regression methods for testing for moderations have been known to be as robust as more complex methods and yet parsimonious.

Aggression as outcome.

Overall macro moderation. The moderation hypotheses were tested at a macro level with an overall positive SIP interacting with specific positive parenting indicators to predict aggressive behavior in adolescence. In order to test for the macro level moderations, factor scores were generated for each of the individual indicators of positive parenting and overall SIP based on their confirmatory factor analytic model. AMOS has a

simple procedure to create factor scores of the latent variables (AMOS Development Corp., 2009; Jöreskog, 2000; Jöreskog, Sörbom, & Wallentin, 2006; Marsh, Wen, & Hau, 2006; Yang, 1998). Thus, four latent factor scores were generated for positive parenting i.e., warmth, involvement, guidance, and discussion from the confirmatory factor analytic model of positive parenting. In order to test the moderation with overall SIP, an overall SIP factor score was generated and outputted based on the confirmatory factor analytic model of SIP. The latent variable factor scores were outputted from the confirmatory factor analytic models in the AMOS program to an SPSS data file. Multiplicative interactive terms were computed for each positive parenting factor scores with the overall SIP latent factor score, resulting in four interaction terms for the macro level model of aggressive behavior. The main effects of the latent parenting and SIP factor scores and their interactions were used as manifest variables in a second step structural equation model in AMOS version 16.0. It may be noted that while these factor scores were used as manifest variables, they were indicative of the true scores. The macro level moderations were computed separately for each positive parenting indicator rather than an overall positive parenting composite because it was anticipated that positive parenting indicators would interact uniquely with SIP. Hence, it was deemed necessary to test their effect separately rather than an overall positive parenting construct. Two models were tested: a main effect model and an interaction model, which had kindergarten aggression, four positive parenting, and one overall SIP factor score (Refer to Figure 9). The main effect model had a good fit (χ^2 (67) = 120.92, p = .00, χ^2/df = 1.81, CFI = .99, TLI = .98, RMSEA = .04, p =.98) and explained 24.1% of the variance in aggressive behavior (Refer to table 10). The interaction model of four interactions of overall positive

SIP with each positive parenting construct was tested, and also reported a good fit (χ^2 (123) = 305.53, p = .00, χ^2/df = 2.48, CFI = .97, TLI = .95, RMSEA = .05, p =.45). The null hypothesis was that the interaction effects taken together were not significant in the population i.e., Ho: $\beta_{(\text{warmth X SIP})} = 0$, $\beta_{(\text{involvement X SIP})} = 0$, $\beta_{(\text{guidance X SIP})} = 0$, and $\beta_{(\text{discussion X SIP})} = 0$, in the population, after controlling for kindergarten aggression and the main effects of positive parenting and positive SIP. The interaction model indicated a significant improvement in fit over the main effect model as indicated by the significant $\Delta\chi^2$ which was greater than the critical χ^2 at 56 degrees of freedom ($\Delta\chi^2$ (56) = 184.62, p = .05, > critical χ^2 (56)=74.47 p = .05). Thus, we can reject the null hypothesis that the overall interaction effect was not significant in the population because the interaction effect overall was significant in the population as indicated by the $\Delta\chi^2$ test. An examination of the path coefficients revealed that positive SIP significantly interacted with warmth (b = 2.75, r = .14, p < .01), involvement (b = -.57, r = -.14, p < .05) and discussion (b = .61, r = .10, p < .05) in the prediction of aggressive behavior problems after accounting for kindergarten aggression (Refer to Table 10). The Modgraph software, a computer based software created by Paul Jose (2008) was used to plot the results of the macro level interaction effects. An examination of the plots revealed that at low levels of positive SIP, greater levels of parental warmth was associated with lower levels of aggressive behavior (Refer to Figure 11), and higher levels of parental discussion were associated with lower aggression (Refer to Figure 13). Positive SIP interacted with involvement such that at high positive SIP, greater involvement was associated with lower aggression. However, at lower levels of positive SIP, greater

involvement was detrimental i.e., it was associated with greater aggression (Refer to Figure 12).

SIP micro step-specific moderation. In order to test the moderated effects of individual indicators of positive parenting with individual steps of SIP, OLS regression was the chosen method. The individual indicators were manifest variables and hence using them in a SEM framework would be equivalent to a path analysis. Furthermore, moderation using OLS regressions allows an examination of the significance of the slopes. A series of four hierarchical moderated regression models were estimated in order to test the interactions of the four indicators of positive parenting with the four steps of social information processing. Initial level of centered aggressive behavior at kindergarten was entered in the first step; the four indicators of centered positive parenting and each centered social information processing indicator were entered as a block in the second step; and finally, the four interactions of the centered social information processing and centered parenting were entered in the third and final step as block. If the interaction effect was found to be significant, the nature of the interaction effect was further explored by the method used by Aiken and West (1991) whereby the association between positive parenting and aggressive behavior were determined for significance at mean levels as well as high and low levels each social information processing behavior. The high and low levels were determined by values that were 1 standard deviation above and below the mean of social information processing respectively. Finally, slopes, standard errors, and t statistics were calculated to determine whether the relationship between the predictor and outcome was significant at each level of the moderator, based on the significance of the slopes (Aiken & West, 1991). The

slopes, standard errors and t- scores were calculated based on the formula by Jaccard, Turrisi, and Wan (1990). The formula for calculating the slopes at the three levels of the moderator was based on the following equation:

$$\textbf{Slope at } X_2 = b_1 + b_3 X_2$$

In this equation X_2 refers to the level of the moderator in terms of low (1 SD below the mean), mean (0), and high(1 SD above the mean), b_1 refers to the unstandardized coefficient of the predictor, b_3 refers to the unstandardized coefficient of the interaction term.

The formula for calculating the standard error of the slope was:

$$s\,(b_1 \text{ at } X_2) = [\text{var}(b_1) + X_2^2\,\text{var}(b_3) + 2\,X_2\,\text{cov}(b_1\,b_3)]^{1/2}$$

In this equation var (b_1) refers to the variance of the predictor variable, X_2 refers to the level of the moderator in terms of low, mean, and high levels, var (b_3) refers to the variance of the interaction term, cov (b_1 b_3) refers to the covariance of the predictor and the interaction term, and ½ indicates taking the square root of everything in square brackets. Finally, the t-scores are calculated by the formula:

$$\textbf{T-score= Slope/ Standard error}$$

The interaction slopes and their significance were calculated using the online Modgraph software developed by Paul Jose (2008) which estimates the slope, standard error, and t-scores of the association between the predictor and outcome at the low, mean, and high levels of the moderator.

After controlling for initial level of aggressive behavior, encoding relevance interacted with warmth and involvement; benign attribution interacted with guidance; competent response generation interacted with warmth; and finally, response evaluation

moderated the relationships of warmth, involvement, guidance, and discussion in the prediction of aggressive behavior (Refer to Table 12). It may be noted that the interaction of parental guidance by benign attributions was marginally significant, although the ΔR^2 did not reach significance. However, it has been argued in a review paper by Bedieian and Mossholder (1994), that it may be more pertinent to explore the significance of the interaction term over the significance of the R^2, when evaluating interactions in moderated hierarchical regressions. The authors have cited Robert Cohen in a personal communication as saying that: "If the purpose of a study is to assess an interaction, then neither the significance of the main effects, nor the overall R^2 is relevant" (Bedieian & Mossholder, 1994, pg. 163). The Modgraph software (Jose, 2008) was used to plot the graph and examine the slopes at low, mean and high levels of the step specific SIP moderator using the method developed by Aiken and West (1991). An examination of the regression slopes (Refer to Table 14) indicated that maternal warmth was negatively associated with aggressive behavior only at low levels of encoding relevance (b = -.22, p < .01) (Refer to Figure 15). A somewhat similar pattern was noted for the negative relationship of maternal warmth with aggressive behavior at low levels of competent response generation (b = -.22, p < .01), and a negative relationship at low (b = -.37, p < .001) and mean levels (b = -.13, p < .05) of competent response evaluation (Refer to Figures 15, 18 and 19).

The regression slopes for involvement suggested a unique and unexpected pattern of findings. There was a marginal negative association between involvement and aggression at low levels of encoding relevance (b = -.03, p < .10) and a negative relationship at high levels of encoding relevance (b = -.13, p < .001) (Refer to Figure 16).

However, with respect to competent response evaluation, there was a positive association between involvement and aggression (b = -.06, p < .01) at low levels, and a negative association at high levels of response evaluation (b = -.04, p < .01) (Refer to Figure 16 and 20). The regression slope for guidance showed that there was negative association between guidance and aggression at low (b = -.12, p < .01) and mean (b = -.07, p < .05) levels of benign attributions. Likewise, a similar association was found in the relationship between guidance and aggression at low (b = -.12, p < .01) and mean (b = -.02, p < .05) levels of competent response evaluation (Refer to Figure 17 and 21).

The regression slope for discussion revealed that there was as negative association between discussion and aggression at low levels of competent response evaluation (b = -.04, p < .001) (Refer to Figure 22). For most of the slopes with aggressive behavior as the outcome, positive parenting indicators at low levels of social information processing were negatively associated with aggressive behavior. The only exception to this pattern was parent involvement. For parent involvement, it was revealed that at high and low levels of encoding relevance, there was a negative association between involvement and aggression. However, at low levels of response evaluation, involvement was positively associated with more aggression, and at high levels of response evaluation, involvement was associated with less aggression.

Social skillfulness as outcome.

Overall macro moderation. The overall moderation hypotheses involved tests of positive SIP interacting with specific positive parenting indicators to predict social skills in adolescence after controlling for kindergarten social skills (Refer to Figure 10). Two models were tested, a main effect model and an interaction model. The main effect

model had a good fit (χ^2 (129) = 367.73, p = .00, χ^2/df = 2.85, CFI = .97, TLI = .96, RMSEA = .06, p = .06) and explained 20.7% of the variance in aggressive behavior (Refer to table 11). The interaction model of four interactions of overall positive SIP interacting with each of the four positive parenting constructs was tested and also reported a good fit (χ^2 (201) = 566.83, p = .00, χ^2/df = 2.82, CFI = .96, TLI = .94, RMSEA = .06, p = .04). The null hypothesis was that the interaction effects were not significant in the population i.e., Ho: $\beta_{(\text{warmth X SIP})} = 0$, $\beta_{(\text{involvement X SIP})} = 0$, $\beta_{(\text{guidance X SIP})} = 0$, and $\beta_{(\text{discussion X SIP})} = 0$, in the population. The $\Delta\chi^2$ test indicated that the interaction model had a significant improvement in fit over the main effect model as indicated by the $\Delta\chi^2$ which was higher than the critical χ^2 at 72 degrees of freedom ($\Delta\chi^2$ (72) = 109.11, p = .05, > critical χ^2 (72)=92.81 p = .05). An examination of the path coefficients revealed that positive SIP significantly interacted with involvement (b = 1.14, r = .11, p < .05) in the prediction of socially skilled behavior (Refer to Table 11). An examination of the plots created using Modgraph (Jose, 2002) revealed that at high levels of positive SIP, greater parental involvement was associated with higher social skills, and at low levels of positive SIP, more involvement was associated with lower social skills (Refer to Figure 14).

SIP micro step-specific moderation. In order to test the interaction effect of overall positive social information processing with positive parenting in the prediction of children's socially skilled behaviors a series of hierarchical moderated regression analyses were tested. For each of these regression models, centered kindergarten social skills was entered in the first step, centered positive parenting and each centered SIP

indicator were separately added in the second step, and the four interactions were added in the third step of the model.

After controlling for initial levels of social skills, encoding relevance interacted with involvement; competent response generation interacted with discussion; and, competent response evaluation interacted with involvement and discussion (Refer to Table 13). It may be noted that the ΔR^2 of the final step in the hierarchical regression for the interactions of encoding relevance by involvement, and discussion by competent response generation were not significant. However, as indicated by Robert Cohen in the review paper by Bedieian and Mossholder (1994), it is the significance of the interaction term and not the overall R^2 that is important in determining interaction effects. Hence, these interactions were further explored , to determine the nature of the interaction effect.

An examination of the regression slopes computed with the Modgraph software (Refer to Table 15) indicated that involvement was positively associated with social skills at high levels of encoding relevance ($b = .18$, $p < .01$) and competent response evaluation ($b = .19$, $p < .01$) (Refer to figure 23 and 25). Discussion was positively associated with social skills at low levels of competent response generation ($b = .15$, $p < .05$) (Refer to Figure 24) and competent response evaluation ($b = .16$, $p < .05$) (Refer to Figure 26).

In sum, the results found support for the mediating role of SIP in the association between positive parenting and child aggressive behavior problems and children's socially skilled behavior outcomes. As regards, the moderating role of SIP, there was evidence for its compensatory role in the association between positive parenting and child aggression (with the exception of parent involvement) and a compensatory and

strengthening role for the linkages between positive parenting and socially skilled behavior outcomes.

V. Discussion

This research was guided by five hypotheses regarding the interplay of positive parenting and positive social information processing in the prediction of adjustment outcomes in early adolescence. First, it was hypothesized that positive parenting assessed in pre-kindergarten would predict positive SIP in the early elementary school years. Second, it was hypothesized that positive parenting would predict both lower levels of aggression and higher levels of social skillfulness in grade 7. Along these lines, it was hypothesized that positive SIP would predict lower levels of aggression and higher levels of social skillfulness in grade 7. The fourth hypothesis was that positive parenting would have a direct association with grade 7 adjustment outcomes and an indirect (mediated) association through positive SIP. Finally, it was hypothesized that positive SIP would moderate the association between positive parenting and grade 7 outcomes and this moderating effect would differ across aggression and socially skilled behavior outcomes. The results of the study provide support for all five hypotheses. These results are discussed in the sections that follow.

Does Positive Parenting in Early Childhood Predict Positive SIP in the Early Elementary School Years?

Although an extensive body of research has examined relations between negative

aspects of parenting (e.g., harsh discipline) and negative aspects of SIP (e.g., hostile attributions of intent), few studies have considered whether positive parenting and positive SIP are related. In the current study, positive parenting was assessed in terms of parental warmth, involvement, proactive guidance, and discussion. These positive parenting measures were selected because they appear to capture many facets of positive parenting that have been examined in past studies (e.g., Pettit et al., 1997) and because they were methodologically distinct. The parenting measures were only modestly correlated with one another, consistent with past research (Mize & Pettit, 1997; Pettit et al., 1997). It therefore does appear that when it comes to parenting, "all good things" do not necessarily go together.

Positive SIP was assessed in terms of encoding relevance, benign attributions, competent response generation, and competent response endorsement. These measures were somewhat more strongly related to one another than was the case for the positive parenting measures. An effort was made to create positive SIP measures that were not merely the inverse of negative SIP (biases and deficits). Greater success in doing this was achieved for competent response generation and competence response endorsement. No previous studies appear to have created measures that tapped positive SIP in this manner. On the other hand, encoding relevance and benign attributions are not operationally distinct from *lack of* relevance or from *lack of* hostile attributions. Nonetheless, as a set, the four SIP measures reflect a generally positive approach to reading, judging, and responding to hypothetical conflicts in specific social situations. Because SIP measures tend to be only modest-to-moderately correlated across years (Lansford et al., 2006), same-construct measures were collapsed across the first four years (or three, in two

instances) of elementary school to create more robust scores. This approach has been used in past studies when negative SIP was the focus (e.g., Dodge et al., 2003).

At the latent-construct level, positive parenting in early childhood significantly and positively predicted positive SIP in the early elementary school years, accounting for 35.8% of the variance in SIP. Although the model fit the data well, the factor loadings tended to be low-to-moderate in magnitude. Low factor loadings in the construction of latent SIP constructs is not uncommon (e.g., Weiss et al., 1992) and would be expected given that SIP formulations posit only modest associations among SIP components. This is the first known study to document a significant longitudinal association between a latent factor of positive parenting and a latent factor of positive SIP.

With respect to association between the individual positive parenting measures and the individual positive SIP measures, correlations (see Table 2) show that 10 of 16 correlations were statistically significant, with the most consistent correlational pattern for encoding (predicted by three of four parenting measures) and for discussion (which predicted three of four SIP measures). However, every SIP measure was predicted by at least two parenting measures and every parenting measure predicted at least two SIP measures. Thus, it can be concluded that, overall, multiple aspects of positive parenting are predictive of multiple aspects of positive SIP.

As noted earlier, little research attention has been devoted to the parenting antecedents of SIP. The findings from the current study generally are consistent with that small body of research. For example, Haskett and Willoughby (2007) reported that parental responsiveness, sensitivity, and positive regard were associated with adaptive patterns of social cognitive processing. Other research also attests to the association

between specific indicators of positive parenting (e.g., proactive teaching, warmth, etc.) with positive SIP (Domitrovich & Bierman, 2001; Pettit et al., 1988). These findings are consistent with some of the research by Dodge, Pettit, and others (Dodge et al., 1990; Pettit et al., 1991) showing that socialization experiences in the family provide one important means through which children acquire social information processing styles. The findings of this study is consistent with prior research which suggests that children who experience parenting that is consistent and caring are more likely to develop a set of beliefs that the world is a safe place, that people can be trusted, and that obstacles can be overcome. This competent socio-cognitive style is in contrast to the set of beliefs acquired by children growing up in harmful home environments, i.e., that the world is a hostile place and that there is a need to be defensive for self-protection (Dodge, 2002).

Does Positive Parenting in Early Childhood Predict Behavioral Adjustment in Early Adolescence?

The notion that parents serve as primary socializers in the lives of their children has met with little disagreement among researchers (Grusec & Davidov, 2007). However, much of the research on parenting as it relates to child adjustment has focused on the way that "bad" parenting may be associated with "bad" outcomes, and the role of positive dimensions of parenting has been neglected for a long time. The finding that positive and negative parenting do not represent two sides of the same coin has gained momentum in recent years (Belsky, 1990; Pettit & Bates, 1989; Pettit et al., 1997). It has increasingly been recognized that the presence of positive parenting is as crucial as the absence of negative parenting in explaining child adjustment (Bates & Pettit, 2007;

Rothbaum & Weisz, 1994), and it explains unique variance in child adjustment (Pettit et al., 1988). The positive parenting indexes of warmth, involvement, guidance, and calm discussion were selected because these have been demonstrated to characterize significant aspects of both child negative and positive adjustment in prior research (e.g., Pettit et al., 1997).

Given the vast literature on parenting antecedents of child behavioral and social outcomes, it is of interest to explore whether the role of parenting on child adjustment persists across developmental periods from early childhood to adolescence. It is also of interest to explore whether this association continues to be statistically significant after accounting for initial levels of the child's adjustment. The longitudinal framework of the current study allows us to explore whether this impact does indeed hold across developmental periods from early childhood to adolescence. In the current study, at the latent construct level, early childhood positive parenting as indicated by warmth, involvement, guidance, and discussion was indeed robustly associated with grade 7 aggressive behavior problems after accounting for kindergarten levels of aggression, and they both collectively explained 29.5% of the variance in aggressive behavior. As regards the linkages between individual positive parenting measures and individuals SIP measures, the correlations (Refer to Table 2) indicate that seven out of eight correlations had low to modest statistically significant associations. Furthermore, there was a significant positive association between positive parenting and grade 7 socially skilled behavior at the level of the latent construct after accounting for initial social skills and together both parenting and kindergarten social skills explained 23.4% of the variance in socially skilled behaviors. All eight associations of positive parenting with social skills

were significant. As indicated earlier, the factor loadings of the parenting construct are relatively lower due to the distinct nature of the positive parenting measures. Despite these empirical challenges, the current study demonstrates findings consistent with prior research on the significance of "good" parenting for both "good" and "bad" outcomes (Pettit & Bates, 1989; Pettit et al., 1997). These findings demonstrate that parental sensitive responding, use of adaptive disciplining strategies in conflict, and involvement in their child's peer contexts, allows children to learn and transfer those skills acquired in the parental context to other relationships, perhaps by facilitating their empathetic capacity, and in the development of a balanced style of regulating negative affect in their interactions with others. These behaviors in turn foster better adjustment outcomes in the long term (Grusec & Davidov, 2007).

Does Positive SIP in the Early Elementary School Years Predict Behavioral Adjustment in Early Adolescence?

The crux of the socio-cognitive theory developed by Dodge and colleagues (Crick & Dodge, 1994; Dodge, Pettit, McClaskey, & Brown, 1986) is that socio-cognitive biases involving perceiving situations, making judgments about other people's motives, and decisions about how to respond in those situations, go a long way in forming patterns of behavior that predispose individuals towards acting in harmful or socially competent ways. The basic tenet of the SIP model is that children's responses to challenging social situations (e.g., peer provocation or peer rebuff) are guided by a series of cognitive steps such as encoding social cues, making interpretations of the intentions of peers, eliciting potential behavioral responses, and making an evaluation about whether the response is

good or bad. While the bulk of work on the consequences of SIP biases and deficits has focused on aggressive behavior problems, less research attention has been directed toward the SIP antecedents of socially skilled behavior (Nelson & Crick, 1999). Recent research has demonstrated that "*Pollyanna*" individuals who attribute "good" intentions in the actions of others' are more likely to be better adjusted (Runions & Keating, 2007). This idea lays the groundwork of the current study which builds on the Runions and Keating (2007) study that investigated positive attributions of intent, and goes on to explore an overall positive information processing pattern. Hence SIP was construed in terms of positive patterns of processing information in social situations to determine whether these: a) relate to behaviors characterized as socially skilled; b) relate to aggressive tendencies; and, c) predict whether the above predictive relations continue to be significant after accounting for children's initial adjustment levels.

In the current study there was a negative association between positive SIP and grade 7 aggressive behavior problems and social skills at the level of the latent construct and these explained 30.5% of the variance in aggressive behavior and 39.6% of the variance in socially skilled behaviors. With respect to the individual associations it was found that 15 of the 16 correlations among positive SIP and adjustment (see Table 2) were significantly related. Thus it can be concluded that an overall positive pattern of processing information in early elementary school goes a long way in predicting patterns associated with acting out behaviors as well as competent styles of social functioning in adolescence. The results of this study are consistent with prior research on the links between biased encoding (Dodge et al., 1995; Slaby & Guerra, 1988; Weiss et al., 1992), tendency to attribute hostile intent (Crick & Dodge,1996; Orobio de Castro et al., 2002),

competent response strategies (Dodge et al, 2003; Mize & Ladd, 1988), and incompetent response evaluations (Lansford et al, 2006; Trachtenberg & Viken, 1994) with aggressive behavior. These findings are also consistent with prior research which have elaborated that encoding relevance (Dodge et al., 1986; Puttalaz, 1983), few hostile attributions (Nelson & Crick, 1999; Runions & Keating, 2007), response generation, and negative evaluations of aggressive responses predict peer success and competence (Dodge et al., 1986; Dodge & Price, 1994). Clearly, the study extends the scope of the social information processing theory to indicate that while hypersensitivity to threat, selective attention to aggressive cues, and interpreting and making decisions based on these reflect learned dispositions to act in certain ways, a competent social information processing style can also be learned in a similar fashion.

Does Positive SIP Mediate the Relation between Positive Parenting and Behavioral Adjustment?

We know that parenting predicts child outcomes; however, a more pertinent question is the examination of the underlying process through which this operates. One perspective stresses the role of acquired SIP patterns as the mechanism linking parenting with adjustment outcomes. There has been a wide exploration of the mediating process through which socio cognitive processes explain the relation between the antecedents of the child, family, and contextual factors and child related outcomes, and a good share of attention has been directed towards the predictive role of parenting in this link.

Ample research has explored the mediating role of SIP indicators (i.e., encoding errors, hostile attributions, aggressive response generation, and aggressive response

evaluation) (Dodge et al., 1990; Weiss et al., 1992; Dodge, Pettit, Bates & Valente, 1995; Runions & Keating, 2007). However, most of this research has focused on negative parenting (Brendgen et al., 2002; Dodge et al., 1995; Dodge et al., 1990; Heidgerken et al., 2004; Weiss et al., 1992) as a predictor in this link. Studies exploring the role of positive parenting predictors such as proactive teaching (Pettit et al., 1988), parental support (Gomez et al., 2001), and nurturing parenting (Haskett & Willoughby, 2007) in the mediating link of social information processing, have found mixed results. While one study found that hostile attribution and hostile response evaluation modestly mediated parental support and aggressive behavior (Gomez et al., 2004), other studies did not find evidence for mediation with positive parenting (Haskett & Willoughby, 2007; Pettit et al., 1988). The current study aimed to address this gap in the literature by examining multiple indicators of parenting and SIP in a longitudinal framework.

The results of the current study showed that overall positive SIP mediated the association between positive parenting and aggressive behavior problems in grade 7 and the mediated effect explained a large share of the effect of SIP on parenting and aggression. This research was novel it its focus on the mediating role of *positive* aspects of information processing (as compared to the prior focus on biased information processing). In addition, the current study examines this mediating effect in the context of positive parenting dimensions (which have scarcely been explored), in a longitudinal framework. Parents serve as the regulators of their children's behaviors, and by their interactional patterns with children characterized by supervising, providing calm discussion, and guidance, they provide children messages about the social world, such as, whether the world is a hostile place, or whether the child can trust others. These messages

(stored in the child's memory) serve to guide their interactions in social situations and provide a cognitive framework for behaving in situations involving initiating play with a group of peers or a situation involving being provoked by peers (Dodge, 2002). Parental interactions characterized by warmth and supportiveness would predispose individuals to have a positive bias in social interactions which in turn would be associated with prosocial (Nelson & Crick, 1999) behaviors and less aggressive behaviors

As regards the mediating role of positive SIP in the association between positive parenting and socially skilled behavior, the current study found that SIP mediates the association between positive parenting and socially skilled behavior. Though there is scarce evidence for a mediating role of positive SIP, research has supported the associations between the three key variables, i.e., positive parenting with competent (i.e., absence of negative) social information processing (Criss, Shaw, & Ingoldsby, 2003; Haskett & Willoughby, 2007; Pettit et al., 1988), and more socially skilled behavior (Dodge et al., 1986; Pettit et al., 1988). Furthermore, a recent study by Nelson and Crick (1999) found that prosocial individuals had more adaptive social information processing. Thus, the results of this study suggest that positive parental experiences as early as the first five years of life have pervasive and long lasting influences on the child's development in early adolescence. Just as children from homes characterized by neglect and poor disciplinary measures form representations of their world as being threatening, and use hostile beliefs and strategies of self preservation, parenting that involves empathetic understanding, adaptive disciplinary strategies of calm discussion and guidance, leads children to form working models of other relationships characterized by trust and empathy. Such positive working models of relationships enable children to be

more adept at dealing with both conflict as well as allowing children to develop positive relationships with their age mates.

Does Positive SIP Moderate the Relation between Positive Parenting and Behavioral Adjustment?

Social Information Processing has been likened to a *disposition* (Dodge, 1993) to perceive situations, and make judgments and decisions about other people in the process of everyday social interactions (Bradshaw & Garbarino, 2004; Crick & Dodge, 1994). This quality of social information processing can be analogous to personality and temperament patterns which also represent stable trait like behavioral patterns. Personality has been defined earlier as "an individual's characteristic patterns of thought, emotion, and behavior, together with psychological patterns behind these mechanisms" (Funder, 2001, p. 2). To the extent that it represents a stable trait-like quality (Crick & Dodge, 1994), SIP may be analogous to personality patterns. Positive personality (e.g., Leeuwan et al., 2007; O'Connor & Dvorak, 2001; Prinzie et al., 2003) and temperament (e.g., Davis, Doelger & Lemery-Chaflant, 2006; Kochanska, 1997; Kochanska, Aksan & Joy, 2007) have been shown to moderate the effects of parenting on child adjustment. For example, O'Connor & Dvorak (2001) showed that at high levels of ego resiliency versus at low levels, maternal harshness was not associated with aggressive behavior. Whereas, those low on ego resiliency were increasingly aggressive at high levels of maternal harshness. In a similar vein, literature on child temperament for instance (e.g., Van Zeijl et al., 2007) has suggested that for children with high risk temperaments versus low risk temperaments, maternal gentle discipline was associated with less aggression. This seems

to suggest that SIP might also moderate the association of parenting and child association.

A second reason to expect that SIP may play a role in amplifying or attenuating the links between parenting and adjustment is its development in the peer relationship context. Peer relationships play an important role in SIP development, and prior research has shown that peer relationship characteristics moderate parenting and child adjustment outcomes (e.g., Criss et al., 2002; Lansford et al., 2003; Schwarz et al., 2000). Therefore, it may be reasonable to expect that SIP which occurs in peer contexts may also moderate parenting and adolescent adjustment. No prior study had explored the moderating role of positive SIP in the impact of positive parenting on child adjustment: negative or positive.

The interaction between positive parenting and positive SIP could operate in one of two ways: Positive SIP might strengthen the relation between positive parenting and adjustment outcomes. If this were the case, then positive parenting would be more strongly associated with increases in social skill and decreases in aggression when positive SIP was high (vs. low). This strengthening role of child characteristics has been noted in the literature on temperament research as a moderator. For instance, Kochanska, Aksan, and Joy (2007) found that mother - child positive relationship predicted future successful socialization outcomes in mother - child dyad only for children who were high on fearlessness. Alternatively, positive SIP might serve a compensatory function when positive parenting was low. If this were the case, then low levels of positive parenting would be more strongly associated with decreases in social skill and increases in aggression when positive SIP was low (vs. high). The compensatory role of child characteristics has also been demonstrated in the temperament literature. For example,

Doelger and Lemery-Chaflant (2006) found that at high levels of child effortful control there was no relationship between low positive parenting and children's externalizing behavior, however, at lower effortful control, low positive parenting predicted child externalizing behavior. The current findings therefore extend prior research, because they build on some of the prior research on child personality and temperament characteristics as moderators to examine the role of a competent SIP style as a moderator in terms of its strengthening versus compensatory role for both adaptive and maladaptive child adjustment.

This hypothesis was examined at two levels: (i) the macro level, whereby overall positive SIP was investigated to examine its moderating role with each positive parenting separately; and, (ii) the micro level, whereby each positive SIP step interacted with each of the four parenting measures. The reason to investigate each positive parenting measure separate rather than as a whole in the macro level hypothesis was that these represented relatively distinct components of parenting and it was anticipated that they would interact differently with the different SIP indicators.

Results of the present study suggest that SIP moderates the association of parental warmth, involvement, and discussion with aggressive behavior problems. Positive SIP serves as a *compensatory role* for the association of parental warmth and discussion with aggression. At low levels of positive information processing, greater parental warmth and discussion were associated with lower levels of aggressive behavior problems. This was not the case at high levels of social information processing. This suggests that when children have positive SIP, parenting becomes redundant. However, only when children are lacking in SIP skills does parental warmth and calm discussion play a role in

predicting lower aggressive behavior. It may be that children with higher SIP skills are already protected by having lower levels of aggression. When this is not the case, warmth and calm discussion serve as buffers for such children. The above findings are consistent with prior research which has demonstrated that parenting behaviors are associated with child externalizing behavior only when children possess high temperamental (Davis, Doelger, and Lemery-Chaflant, 2006; Kochanska, 1997) and personality (Leeuwan et al., 2007; Prinzie et al., 2003) risk.

Interestingly, SIP served a double moderating role for involvement and aggression. Specifically, at low levels of positive social information processing, higher involvement was detrimental, because it was associated with greater aggressive behavior. At high levels of social information processing, however, greater involvement was protective i.e., it was associated with lower levels of aggressive behavior. These findings suggest that involvement may be a double-edged sword, depending on the child socio-cognitive processing skills.

The findings of this study are consistent with a bidirectional framework of dynamic interactions between the parent and child such as the Patterson Coercion model (Patterson, Reid, & Dishion, 1992). The Patterson hypothesis states that a difficult and oppositional child and inept- stressed out parent result in a series of transactions that fuel the development of antisocial behavior. It may be noted that parental involvement in the current study was measured in the context of parents' response to child misbehavior. Furthermore, as children become more and more antisocial, they tend to gravitate towards deviant peer groups who provide them training and serve as role models of antisocial behavior. These include methods to escape parent supervision and engage in covert

(hidden) forms of rule- breaking behaviors. In the context of a spiral of parent- child interpersonal dysfunction for children with poor SIP skills and greater aggression, higher levels of parent involvement in the child's activity do not serve to have the desired effect because children have discovered newer methods to conceal their rule-breaking behaviors from parents (Pettit & Arsiwalla, 2008). Furthermore, due to the low positive SIP skills of these children they may not perceive their parents attempts as being in their best interest, fail to make accurate appraisals of their parents' behaviors, and do not generate or evaluate positive behaviors of parents as acceptable. These distorted cognitions may in turn result in increased conflict in the parent-child relational context which might escalate into further rebellion on the part of the child toward parent supervision, thereby exacerbating their aggressive behavior.

An alternative explanation to the double edged sword pattern of parental involvement in its interaction with SIP can be explained by the work of Pettit, Laird, Dodge, Bates, and Criss (2001) on the associations of parental proactive involvement in their child's behavior with later psychological control. Pettit et al., (2001) found an unexpected significant association between early childhood proactive parenting and later parent psychological control, which could be explained by a tendency to overmanage children's independence and autonomy. They surmised that a preventive oriented style when not required may be viewed as a form of intrusive behavior management which has been construed as psychological control (Pettit & Laird, 2002). When children have poor SIP skills, there is a greater likelihood to perceive parents intentions as not benign and make appraisals of parents' behaviors in an unfavorable light. These distorted perceptions in turn make children more resistant to parents' attempts at involvement in their social

activities, which may dampen parents' attempts at seeking information and having control, thereby leading to greater aggression. Among children with positive SIP skills, on the other hand, (who tended to have better developed social skills and therefore were possibly less resistant to parents' attempts at monitoring their peer activities), this parental involved behavior was actually effective. Also, as discussed earlier, all positive parenting behaviors do not necessarily go together. Therefore, parents who display one kind of positive parenting (e.g., involvement) may not necessarily exhibit other positive parenting behaviors (e.g., warmth). Thus, greater parental involvement might still predict poor outcomes for children who have low SIP. These findings are consistent with the notion of a goodness of fit between the parent and child relations in the predictions of child adjustment outcomes, which implies that adaptive developmental outcomes result as a synchrony of the physical and behavioral characteristics with the demands of the physical and social context of the individual (Lerner, 1993). In the current study, the child's own information processing disposition and their experience of lack of positive parenting might differentially predict their adjustment outcomes.

Specific steps of positive SIP suggested unique patterns of interactions with positive parenting. Thus, parental warmth, proactive guidance, and discussion indicated a compensatory effect for their respective positive social information processing indicators. When children manifested poorer skills at accurately encoding peer situations, did not generate assertive or prosocial responses in peer dilemmas, and failed to give positive evaluations of prosocial situations, experiencing warm parental behaviors was linked to lower aggressive rates. Likewise, parents who used proactive guidance strategies had children who were less aggressive, only if they had lower levels of benign attributions

and less competent response evaluations. There was a similar pattern for parents who used calm discussion at lower levels of competent response evaluation. This also seems to suggest that warmth, guidance, and discussion seem to operate in similar ways in predicting better outcomes for children with lower positive SIP skills.

As far as parental involvement is concerned, there was a unique effect for both the social information processing indicators. Greater involvement was associated with lower aggression at both high and low levels of encoding relevance, although the association was more strongly related to aggression at higher (than lower) levels of encoding relevance. On the other hand, for competent response evaluation, involvement was associated with lower aggression at high levels, and it was associated with high aggression at low levels of response evaluation. An examination of the micro level moderations are helpful because these help us understand that the *double edged sword* pattern of findings for involvement are really true only for children who do not have positive evaluations of prosocial responses to peer dilemmas (i.e., for response evaluation as a moderator). Consistent with the earlier goodness of fit notion in the case of parent involvement, the current findings suggest that children who do not acquire skills associated with evaluating prosocial responses in a positive light, might be at greater risk for aggressive behavior problems, if their parents are more involved in their peer activities.

For social skills as the outcome, social information processing moderated the association between involvement and social skills. Higher levels of involvement were associated with greater socially skilled behavior, only at high positive social information processing. Furthermore, interactions of parenting measures by individual steps of SIP

revealed that for parental involvement there was a strengthening effect of encoding relevance and competent response evaluation, such that only high levels of these information processing indicators were associated with higher social skills. Nevertheless, there was a compensatory role of response generation and response evaluation for parental discussion, such that only low levels of these indicators were associated with greater social skills. Clearly, parent involvement was always beneficial for child outcomes when at high levels of positive SIP for both aggressive and socially skilled behavioral outcomes. It appears that children who have superior positive socio-cognitive skills tend to have the better outcomes when their parents are more involved in their peer activities.

These findings are consistent with prior research on dispositional characteristics of the child such as personality styles (Leeuwan et al., 2007; O'Connor & Dvorak, 2001; Prinzie et al., 2003) and temperament as a moderator of parenting and child positive and negative adjustment outcomes (Davis, Doelger & Lemery-Chaflant, 2006; Kochanska, 1997; Kochanska, Aksan & Joy, 2007; Van Zeijl et al., 2007). For instance, Stice and Gonzales (1998) indicated that children high (but not low) in temperamental risk had more significant associations of parental support and control with antisocial behavior. Similarly, at high levels of positive personality characteristics such as benevolence and conscientiousness, there were weak associations among coercive parenting and externalizing behavior, whereas parenting was more strongly associated with aggression at low positive personality characteristics. Likewise, the moderating role of peer related factors such as child friendships (Lansford et al., 2003; Schwartz et al., 2000) and peer acceptance (Criss et al., 2002) also support the findings of the current study.

The current research is also consistent with Belsky's (1997) differential susceptibility hypothesis which implies that the environment does not treat all individuals the same way, and that susceptibility to environmental demands varies as a function of the individual's traits. Belsky's differential susceptibility hypothesis suggests that children with less reactive (i.e., more positive) temperaments are less likely to resist the effects of parent socialization, and to develop social competence independent of parent socialization. On the other hand, the opposite effect occurs for those who have more reactive temperaments (Gallagher, 2002). The analogy of temperament can be extended to the trait like qualities of social information processing, and the results of the study have in fact revealed that when individuals have superior trait like characteristics (high levels of positive SIP) they are on the path towards social competence and positive adjustment irrespective of the extent of socialization they receive. With children who do not experience this, the opposite effect holds i.e., parent socialization plays a more significant role.

The results of this study suggest that both positive SIP and positive parenting may serve in a buffering role. Having either positive parenting experiences or positive socio-cognitive skills or both can be beneficial. In the absence of one positive buffer, the other takes over in promoting lower aggressive and higher socially skilled outcomes.

Implications

The greatest strength of the current study lies in its novel application about a less studied moderating and mediating effect of positive social information processing. This study builds on a previous research by Runions and Keating (2007) which found that a

group of children called Pollyanna preschoolers who had all benign attributions of intent, exhibited lower aggressive behavior problems, and had less negative forms of parenting. There was an attempt to extend the literature on this novel concept by extending the idea of Pollyanna, which was defined by Runions and Keating (2007) as indicative of positive attribution of intent, to an examination of all the steps of the social information processing model in terms of adaptive and positive indicators of social information processing. The current study, by examining positive parenting and social information processing patterns of socially skilled children aimed to replicate the Nelson and Crick (1999) study by examining positive patterns of information processing of both aggressive and socially skilled behaviors in a longitudinal framework. The current study has implications for theory development and for extending Dodge's social information processing (SIP) theory (Crick & Dodge, 1996) towards an understanding of positive social information processing mechanisms, as well as extending the SIP theory to competent behavior outcomes.

The findings of the current study also serve to inform the design of nuanced strategies for prevention of aggressive behavior and for the design of parental training and adolescent intervention programs. The present study essentially serves to address some of the limitations present in intervention studies for child aggression that are directed towards management and training of parenting behaviors. It cannot be emphasized more that parenting behavior is of utmost significance, because parents are the managers of their child's behaviors, and regulate these behaviors when the child goes into the peer settings (Dishion & Bullock, 2002). In the absence of positive parenting experience, all is not lost. The current research has implications for intervention efforts to

focus their efforts on developing positive SIP skills under conditions of risky contextual factors like poor socializations experiences. Clearly, one cannot emphasize the "one size fits all approach" for targeting intervention and behavioral training efforts towards preventive efforts for children's problem behavior. While children's sociocognitive skills are an important factor determining whether they eventually end up with aggressive skills or display behavior that may be socially skilled, parenting behaviors are important too, as these influences are indirect on children's outcomes. Furthermore, it appears that parenting and social information processing serve to 'take turns' when it concerns the development of aggressive behavior and strengthen good outcomes for socially skilled behaviors. The benefits of parenting experiences are felt where they are needed most: for the prevention of problem behaviors of children who lack adequately positive social information processing skills. The findings of the current study are clearly reassuring, and suggest that it is not just the presence of negative parenting and negative dimensions of information processing (Pettit et al., 1988), but also the absence of positive parenting and adaptive socio-cognitive skills that go a long way in determining aggressive and socially skilled adjustment outcomes.

The results of the current study also have other interesting implications for intervention efforts towards the reduction of aggressive behavior problems and increasing socially competent behavior. Essentially, it is not sufficient when working with aggressive children to focus on the reduction of negative parenting and on modifying SIP biases and deficits alone. Prior efforts that have attempted such a strategy (e.g., Fast Track project) have met with limited success. A more effective intervention would also focus on increasing positive parenting behaviors and in promoting the development of a

positive SIP style. Secondly, for a universal school-based curriculum designed to increase prosocial behavior and social skillfulness, focusing on increases in a positive SIP style would be more effective way to promote prosocial behavior in a classroom. Thirdly, intervention efforts would be more effective if the different modules of parent training and child SIP training would be implemented in synchrony. As seen in the current study, parent training efforts involving parental involved behavior would backfire if children have a low positive socio-cognitive style. Depending on the focus of the intervention, different techniques may work for intervention that focus on reducing aggressive versus increasing socially skilled behavior outcomes.

The findings of the study also seem to indicate that intervention efforts for children with problem behaviors should assess the needs of the children before expending monetary efforts in this direction. Thus, the content of the program should be customized, and could differ across children not just with varying level of socio-cognitive biases and deficits, but also their exposure to positive family experiences. In addition, intervention efforts need to be targeted towards children in the early years, because as has been noted in the current study, experiences within the family setting prior to the first five years of life go a long way in impacting behavioral and social outcomes in early adolescence. In conclusion, intervention efforts may work best in a multi-systemic framework that targets different facets that influence a child's behavioral and social adjustment (Cavell & Strand, 2003). There is a need for customized needs assessment based programs that determine the individual's specific requirements to promote the best outcomes.

Limitations and Future Research

Several limitations of the present study warrant further discussion. First, the indicators of positive parenting had average reliabilities. Lower reliabilities of the positive parenting measures puts restrictions on the tests of moderation effects which are generally hard to detect and may have been suppressed due to the average levels of reliability. The measures of social information processing were combined from kindergarten to grade 3 in order get a more robust cross year measure. However, the limitation of that approach was that the cross year stability was not as high ,thereby resulting in the alpha declining as compared to the individual year alphas, which were quite high. Nevertheless, despite these empirical challenges, the study findings were promising. Besides, the low reliabilities were compensated by having multiple indicators, multiple methods and multiple respondents for the different measures (i.e., child, parent, and teacher reports), thereby reducing shared method variance.

Second, one of the assumptions of the present study was that positive parenting was independent from negative parenting. Nevertheless, negative parenting was not directly tested in the current study or controlled for in the study to separate its effect from positive parenting. However, it may be added that a prior study by Pettit et al., (1997) which was based on the same dataset and had identical measures of positive parenting tested this question and found robust effects of positive parenting after controlling for negative parenting.

Third, one drawback with examining the overall positive parenting measure based on all the indictors of parenting is that the parenting indices are only modestly correlated with one another. As a result, when exploring positive parenting in a structural equation

model framework, the factor loadings are not very high. This would also hold in the case for positive social information processing. Despite the low factor loadings, there was robust support for the findings as indicated by the significant moderated effects (which are generally hard to detect), high significance of mediated effects, and good model fits of the reported models.

The study did not examine the role of gender, race, and SES and their role on the mediating and moderating role of positive social information processing. Given the novel nature of the study, these may be interesting areas to explore. However, this was beyond the scope of the present study, and may be addressed in future work that explores the contextual factors that qualify the mediation and moderating effects of positive dimensions of social information processing.

Possible directions for future work include an exploration of fathers' parenting behavior, and whether it makes unique or complementary contributions to children's SIP and adjustment. Another potential avenue for future research is the moderating role of SIP in predicting the pattern of change in aggressive behavior from kindergarten to grade 7. Whereas the current study examined the moderating role of positive social information processing on parenting and differences in adjustment (after controlling for initial levels of adjustment), it was beyond the scope of the study to examine this interactive effect on the rate and the nature of change in aggressive and socially skilled behavior from kindergarten to grade 7. Nevertheless, the study did find that SIP did moderate the relation between positive parenting and the difference in aggressive and socially skilled behavior from kindergarten to grade 7 (i.e., after controlling for initial level of adjustment).

Conclusions

The primary contribution of the current study is its novel understanding of the role of adaptive cognitive processes as a condition and mechanism of the linkages between parenting with children's adjustment outcomes. The findings indicated that children in families where parents respond with higher levels of warmth and affection, show greater involvement in their children, use adaptive strategies to prevent child misbehavior by either prevention or reasoning, and using calm discussion in conflict situations with children, are more likely to accurately encode information about peer situations, respond with more benign attributions to such situations, generate prosocial and assertive responses in peer conflict situations, and evaluate competent strategies of responding to peer conflicts more adaptively. Secondly, children growing up in families with greater levels of positive parenting in kindergarten are more likely to be less aggressive and have higher level of socially skilled behaviors in grade 7.

However, adaptive level of social information processing is the mechanism through which this is possible, i.e., parents warm, involved, and adaptive disciplinary strategies of discussion, reasoning and guidance in conflict situations with children, allow children to develop a more mature understanding of their social world. This adaptive pattern of understanding their social world allows them to make informed decisions required in situations involving peer interactions and conflict situations, which allows them to be less aggressive and develop a wider repertoire of socially skilled behaviors. However, the results also seemed to suggest that after accounting for positive levels of social information processing, positive parenting ceased to be as important. Nevertheless,

further analyses suggested, that only under conditions of low positive social information processing, greater positive parenting would predict lower levels of aggressive behavior. At higher levels of positive social information processing, positive parenting would be associated with more socially skilled behavioral outcomes. These findings seem to indicate that positive social information processing plays a *compensatory* role for the effect of positive parenting on children's aggressive behavior outcomes, although, it serves a *strengthening and compensatory* role for the effect of positive parenting on children's socially skilled behavioral adjustment.

The study findings are hopeful and are consistent with the developmental principle of equifinality (Cicchetti, & Rogosch, 1996), which refers to individuals who travel different pathways, but result in the same positive behavioral outcomes. The results of the current study suggest that multiple pathways predict good outcomes for children. While children with positive parental experiences may benefit by learning adaptive patterns of information processing which translate to adaptive social and behavioral adjustment, those who do not benefit from positive parenting can still acquire positive social information processing from other contexts. These skills may be learnt in the absence of positive parenting, and may buffer individuals against the harmful effects of deprivation of parental warmth, and from the experience of parental neglect. The current study highlighted that while positive parenting is important in the prediction of differences in aggressive and socially skilled behaviors from kindergarten to grade 7, its effects may be more indirect. Furthermore, this was the first study to demonstrate that elementary school social information processing moderated the effect of positive parenting at age 5 on social skills and aggression at age 12. These findings have wide

applicability for theory development as well as implications for intervention efforts directed towards children with behavioral problems and for parent training programs.

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Appendix A

Tables

Table 1

Means, Standard Deviations, Range, Skewness, Kurtosis, and Reliabilities for All Measures

Constructs	Indicators	Means (*SD*)	Actual Range	Sample Range	Skewness	Kurtosis	Reliability
Positive Parenting	Warmth	.81 (.25)	0 - 1	0 - 1	-1.27	1.18	.64
	Involvement	3.25 (1.05)	1 - 5	1 - 5	.04	-.99	.90
	Proactive Guidance[a]	.0003 (.47)	-1.41 - .83	-1.41 - .83	-.24	-.43	.66
	Discussion[a]	-.004 (.75)	-3.04 - 1.43	-3.04 - 1.43	-.89	.78	.88
Positive Social Information Processing	Encoding Relevance	1.81 (.14)	0 - 2	.59 - 2.00	-2.66	15.23	.58
	Benign Attributions	.34 (.19)	0 - 1	0 - .91	.43	-.45	.64
	Response Generation	.26 (.17)	0 - 1	0 - .91	.86	.57	.63
	Response Evaluation	3.05 (.46)	1 - 4	1.38 - 3.96	-.65	.34	.66
Aggression Kindergarten		.19 (.30)	0 - 2	0 - 1.56	2.05	4.13	.94
Aggression Grade 7		.22 (.32)	0 - 2	0 - 1.64	2.00	3.85	.95
Social Skills Kindergarten		3.35 (.89)	1 - 5	1 - 5	-.01	-.55	.95
Social Skills Grade 7		3.75 (.97)	1 - 5	1 - 5	-.47	-.63	.95

Note. [a]These variables were standardized with a mean of 0 and a standard deviation close to 1

Table 2
Summary of correlations and N of the study variables (N=369).

	N	1	2	3	4	5	6	7	8	9	10	11	12
School Adjustment													
1. Aggression in kindergarten	575	-											
2. Aggression in grade 7	427	.41***	-										
3. Social skills in kindergarten	575	-.49***	-.32***	-									
4. Social skills In grade 7	427	-.38***	-.67***	.41***	-								
Positive Parenting													
5. Warmth	552	-.12**	-.16**	.10*	.13*	-							
6. Involvement	580	-.04	-.10*	.10*	.17***	.25***	-						
7. Proactive Guidance	578	-.13**	-.17***	.11**	.14**	.10*	.23***	-					
8. Discussion	561	-.07~	-.16**	.12**	.15**	.12**	.16***	.17***	-				
Social Information Processing													
9. Encoding relevance	520	-.13**	-.19***	.27***	.36***	.21***	.22***	.16***	.09~	-			
10. Benign attribution	528	-.13**	-.21***	.15***	.22***	-.00	.09*	.02	.17***	.10*	-		
11. Response generation	529	-.17***	-.23***	.28***	.31***	.08~	.12**	.08~	.15**	.30***	.27***	-	
12. Response evaluation	516	-.06	-.20***	.19***	.20***	.04	.12**	.11*	.22***	.33***	.08~	.19***	-

Note .~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 3

Unstandardized and Standardized Coefficients Showing Associations between Kindergarten Positive Parenting and School Aged Children's Positive Social Information Processing from Kindergarten to Grade 3.

	Positive Social Information Processing outcome[2]		
	B	Se B	β
Factor Loadings[1]			
Positive Parenting			
Warmth	.35	.09	.32
Involvement	2.54	.54	.49
Proactive Guidance	1.00	-	.42
Discussion	1.43	.31	.38
Positive Social Information Processing (SIP)			
Encoding Relevance	1.00	-	.68
Benign Attributions	.60	.23	.31
Competent Response Generation	.79	.14	.43
Competent Response Endorsement	2.40	.40	.49
Structural Path			
Positive parenting – Positive Social Information Processing	.28	.06	.60***
SMC[3]			
Positive Social Information Processing			.358

Notes. [1]All factor loadings are significant. [2]Fit indices: χ^2 (15) = 27.69, p = .02, χ^2/df = 1.85, CFI = .96, TLI = .90, RMSEA = .04, p = .80. [3]SMC, refers to squared multiple correlations or the percentage of the variance in latent outcome variable accounted by the model.

*** $p < .001$

Table 4

Unstandardized and Standardized Coefficients Showing Associations between Kindergarten Positive Parenting and Aggressive Behavior Problems in Grade 7 after Controlling for Kindergarten Aggressive Behavior.

	Aggressive behavior		
	Parenting to Aggression model[2]		
	B	Se B	β
Factor Loadings[1]			
Positive Parenting			
Warmth	.23	.09	.24
Involvement	1.53	.54	.39
Proactive Guidance	1.00	-	.56
Discussion	1.20	.35	.42
Aggression Kindergarten			
Aggression parcel 1	1.04	.06	.86
Aggression parcel 2	.68	.04	.81
Aggression parcel 3	.81	.03	.92
Aggression parcel 4	.91	.03	.87
Aggression parcel 5	1.00	-	.89
Aggression Grade 7			
Aggression parcel 1	1.04	.06	.88
Aggression parcel 2	.68	.04	.86
Aggression parcel 3	.81	.03	.88
Aggression parcel 4	.91	.03	.89
Aggression parcel 5	1.00	-	.94
Structural Path			
Positive Parenting K - Aggression grade 7	-.38χ	.14	-.28**
Aggression K - Aggression grade 7	.55	.07	.42***
Aggression K - Positive Parenting K	-.20	.07	-.20**
SMC[3]			
Aggression grade 7			.295

Notes. [1]All factor loadings are significant. [2]Fit indices of model (χ^2 (61) = 81.56, p = .04, χ^2/df = 1.34, CFI = 1.00, TLI = .99, RMSEA = .02, p =1.00). [3]SMC, percentage of the variance in latent outcome variables accounted by the model. ** $p < .01$, *** $p < .001$.

Table 5
Unstandardized and Standardized Coefficients Showing Associations between Kindergarten Positive Parenting and Socially Skilled Behavior in Grade 7 after Controlling for Kindergarten Social Skills.

	Social Skills		
	Parenting to Social Skills model[2]		
	B	Se B	β
Factor Loadings[1]			
Positive Parenting			
Warmth	.34	.13	.28
Involvement	2.56	.83	.50
Proactive Guidance	1.00	-	.42
Discussion	1.51	.46	.44
Social Skills kindergarten			
Understands others feelings	.93	.03	.86
Socially aware	.93	.03	.85
Accurately interpret	.90	.03	.87
Refrains	.90	.04	.75
Generates many	.92	.03	.86
Generates good	.97	.03	.88
Aware	1.00	-	.88
Social Skills grade 7			
Understands others feelings	.85	.04	.87
Socially aware	.85	.04	.86
Accurately interpret	.84	.03	.90
Refrains	.94	.04	.83
Generates many	.88	.04	.86
Generates good	.90	.04	.87
Aware	1.00	-	.89
Structural Path			
Positive Parenting K - Social Skills grade 7	1.36	.47	.27**
Social Skills Kindergarten - Social Skills grade 7	.40	.06	.35***
Social Skills Kindergarten - Positive Parenting K	.05	.02	.24**
SMC[3]			
Social Skills			.234

Notes. [1]All factor loadings are significant. [2]Fit indices of model (χ^2 (117) = 215.56, p = .00, χ^2/df = 1.84, CFI = .99, TLI = .98, RMSEA = .04, p = 1.00). [3]SMC, percentage of the variance in latent outcome variables accounted by the model. ** $p < .01$, *** $p < .001$.

Table 6

Unstandardized and Standardized Coefficients Showing Associations between Positive Social Information Processing from Kindergarten to Grade 3 and Aggressive Behavior Problems in Grade 7 after Controlling for Kindergarten Aggression.

	Aggressive behavior		
	SIP to Aggression model[2]		
	B	Se B	β
Factor Loadings[1]			
Positive Social Information Processing (SIP)			
Encoding Relevance	1.00	-	.48
Benign Attributions	1.00	.31	.36
Competent Response Generation	1.56	.38	.61
Competent Response Evaluation	2.28	.64	.33
Aggression Kindergarten			
Aggression parcel 1	1.21	.04	.86
Aggression parcel 2	.91	.04	.81
Aggression parcel 3	1.24	.04	.92
Aggression parcel 4	.94	.04	.87
Aggression parcel 5	1.00	-	.89
Aggression Grade 7			
Aggression parcel 1	1.07	.06	.90
Aggression parcel 2	.70	.04	.87
Aggression parcel 3	.82	.03	.86
Aggression parcel 4	.91	.04	.88
Aggression parcel 5	1.00	-	.92
Structural Path			
Positive SIP- Aggression grade 7	-1.69	.43	-.32***
Aggression Kindergarten - Aggression grade 7	.48	.07	.37***
Aggression Kindergarten - Positive SIP	-.07	.02	-.29***
SMC[3]			
Aggression grade 7			.305

Notes. [1]All factor loadings are significant. [2]Fit indices of model (χ^2 (60) = 76.25, p = .08, χ^2/df = 1.27, CFI = 1.00, TLI = .99, RMSEA = .02, p =1.00). [3]SMC, percentage of the variance in latent outcome variables accounted by the model. * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 7

Unstandardized and Standardized Coefficients Showing Associations between Positive Social Information Processing from Kindergarten to Grade 3 and Socially Skilled Behavior in Grade 7 after Controlling for Kindergarten Social Skills.

	Social Skills		
	SIP to Social Skills model[2]		
	B	Se B	β
Factor Loadings[1]			
Positive Social Information Processing (SIP)			
Encoding Relevance	1.00	-	.56
Benign Attributions	.71	.17	.30
Competent Response Generation	1.16	.17	.52
Competent Response Evaluation	2.03	.39	.34
Social Skills Kindergarten			
Understands others feelings	.93	.03	.86
Socially aware	.93	.03	.85
Accurately interpret	.90	.03	.87
Refrains	.90	.04	.75
Generates many	.92	.03	.86
Generates good	.97	.03	.88
Aware	1.00	-	.88
Social Skills grade 7			
Understands others feelings	.85	.04	.87
Socially aware	.84	.04	.86
Accurately interpret	.84	.03	.90
Refrains	.95	.05	.83
Generates many	.88	.04	.86
Generates good	.90	.04	.86
Aware	1.00	-	.89
Structural Path			
Positive SIP - Social Skills grade 7	7.74	1.67	.57***
Social Skills Kindergarten - Social Skills grade 7	.12	.09	.11ns
Social Skills Kindergarten - Positive SIP	.04	.01	.51***
SMC[3]			
Social Skills			.396

Notes. [1]All factor loadings are significant. [2]Fit indices of model (χ^2 (116) = 237.88, p = .00, χ^2/df = 2.05, CFI = .98, TLI = .98, RMSEA = .04, p = .95). [3]SMC, percentage of the variance in latent outcome variables accounted by the model. *** $p < 001$.

Table 8

Unstandardized and Standardized Coefficients Showing School Aged Children's Positive Social Information Processing as a Mediator of Kindergarten Positive Parenting and Children's Aggressive Behavior in Grade 7 after Controlling for Kindergarten Aggression.

	Aggression					
	Unconstrained model			Constrained model		
	B	Se	β	B	Se	β
Factor Loadings[1]						
Positive Parenting						
Warmth	.35	.10	.29	.35	.10	.28
Involvement	2.37	.57	.47	2.48	.60	.48
Proactive Guidance	1.00	-	.44	1.00	-	.43
Discussion	1.60	.37	.44	1.67	.39	.45
Positive Social Information Processing (SIP)						
Encoding Relevance	1.00	-	.55	1.00	-	.53
Benign Attributions	.75	.20	.31	.78	.20	.31
Competent Response Generation	1.19	.22	.52	1.20	.22	.51
Competent Response Evaluation	2.53	.49	.42	2.56	.48	.41
Aggression Kindergarten						
Aggression parcel 1	1.21	.04	.86	1.21	.04	.86
Aggression parcel 2	.91	.04	.81	.91	.04	.81
Aggression parcel 3	1.24	.04	.92	1.24	.04	.92
Aggression parcel 4	.94	.04	.87	.94	.04	.87
Aggression parcel 5	1.00	-	.89	1.00	-	.89
Aggression grade 7						
Aggression parcel 1	1.08	.06	.90	1.08	.06	.90
Aggression parcel 2	.71	.04	.88	.71	.04	.87
Aggression parcel 3	.82	.03	.86	.82	.03	.86
Aggression parcel 4	.91	.03	.87	.91	.04	.87
Aggression parcel 5	1.00	-	.92	1.00	-	.92
Structural Path						
Parenting - Aggression grade 7	-.25	.19	-.15ns	0	-	-
SIP - Aggression grade 7	-1.12	.55	-.24*	-1.76	.39	-.37***
Parenting - SIP	.22	.06	.59***	.22	.06	.62***
Aggression K - Aggression grade 7	.48	.07	.37***	.46	.07	.36***
Aggression K - SIP	-.05	.02	-.16*	-.05	.02	-.17*
Aggression K - Parenting	-.14	.05	-.19**	-.14	.05	-.18**
Model Comparison[2]	Ho: β (parenting to aggression) = 0 in the population, $\Delta\chi^2$ (1) = 1.57 < critical χ^2 (1)=3.84 p = .05					
SMC[3]						
SIP	.		413			.455
Aggression grade 7			.328			.335

Notes. [1]All factor loadings are significant. Fit indices of unconstrained model (χ^2 (112) = 164.53, p =.001, χ^2/df = 1.47, CFI = .99, TLI = .99, RMSEA = .03, p = 1.00) and constrained model (χ^2 (113) = 166.10, p = .001, χ^2/df = 1.47, CFI = .99, TLI = .98, RMSEA = .03 p = 1.00). [2]Model comparison between the unconstrained model and the model in which the direct structural path from parenting to grade 7 aggression was constrained to zero. [3]SMC, percentage of the variance in latent outcome variables accounted by the model. ns= nonsignificant.

* p < .05, ** p < .01, *** p < .001.

Table 9

Unstandardized and Standardized Coefficients Showing School Aged Children's Positive Social Information Processing as a Mediator of Kindergarten Positive Parenting and Children's Socially Skilled Behavior in Grade 7 after Controlling for Kindergarten Social Skills.

	Social Skills					
	Unconstrained model			Constrained model		
	B	Se	β	B	Se	β
Factor Loadings[1]						
Positive Parenting						
Warmth	.41	.12	.30	.41	.12	.30
Involvement	2.96	.74	.53	2.96	.74	..53
Proactive Guidance	1.69	.42	.40	1.00	-	.40
Discussion	1.00	-	.42	1.68	.42	.41
Positive Social Information Processing (SIP)						
Encoding Relevance	1.00	-	.58	1.00	-	.58
Benign Attributions	.69	.15	.30	.69	.15	.30
Competent Response Generation	1.09	.15	.50	1.09	.15	.51
Competent Response Evaluation	2.18	.35	.38	2.18	.36	.38
Social Skills Kindergarten						
Understands others feelings	.93	.03	.86	.93	.03	.86
Socially aware	.93	.03	.85	.93	.03	.85
Accurately interpret	.90	.03	.87	.90	.03	.87
Refrains	.90	.04	.75	.90	.04	.75
Generates many	.92	.03	.86	.92	.03	.86
Generates good	.98	.03	.88	.98	.03	.88
Aware	1.00	-	.88	1.00	-	.88
Social Skills grade 7						
Understands others feelings	.85	.04	.87	.85	.04	.87
Socially aware	.84	.04	.86	.84	.04	.86
Accurately interpret	.84	.04	.90	.84	.03	.90
Refrains	.95	.05	.83	.95	.04	.83
Generates many	.88	.04	.86	.88	.04	.86
Generates good	.90	.04	.86	.90	.04	.86
Aware	1.00	-	.89	1.00	-	.89
Structural Path						
Parenting - Social Skills grade 7	-.21	.75	-.04ns	0	-	-
SIP - Social Skills grade 7	7.87	2.52	.59**	7.30	1.36	.55***
Parenting - SIP	.22	.06	.53***	.22	.06	.52***
Social Skills K - Social Skills grade7	.12	.10	.11ns	.14	.08	.12~
Social Skills K - SIP	.03	.01	.39***	.03	.01	.38***
Social Skills K - Parenting	.05	.02	.23**	.05	.02	.23**
Model Comparison[2]	Ho: β (parenting to social skills) = 0 in the population, $\Delta\chi^2$ (1) = .09 < critical χ^2 (1)=3.84 p = .05					
SMC[3]						
SIP			.523			.509
Social Skills grade 7			.394			.384

Notes. [1]All factor loadings are significant. [2]Fit indices of unconstrained model (χ^2 (184) = 325.11, p =.00, χ^2/df = 1.77, CFI = .98, TLI = .98, RMSEA = .04, p = 1.00) and constrained model (χ^2 (185) = 325.19, p = .00, χ^2/df = 1.76, CFI = .98, TLI = .98, RMSEA = .04, p = 1.00). [2]Model comparison between the unconstrained model and the model in which the direct structural path from parenting to grade 7 social skills was constrained to zero. [3]SMC, percentage of the variance in latent outcome variables accounted by the model. ns= nonsignificant.

~ p < .10, ** p < .01, *** p < .001.

Table 10

Unstandardized and Standardized Coefficients Showing Macro Interaction Model of Kindergarten Positive Parenting and School Aged Children's Positive Social Information Processing Predicting Aggressive Behavior Problems in Grade 7 after Controlling for Kindergarten Aggression.

	Aggressive behavior					
	Main effect model			Interaction model		
	B	Se B	β	B	Se B	β
Factor Loadings[1]						
Aggression Kindergarten						
Aggression parcel 1	1.00	-	.86	1.00	-	.86
Aggression parcel 2	.75	.03	.81	.75	.03	.81
Aggression parcel 3	1.02	.04	.92	1.02	.04	.92
Aggression parcel 4	.77	.03	.87	.77	.03	.87
Aggression parcel 5	.83	.03	.89	.83	.03	.89
Aggression Grade 7						
Aggression parcel 1	1.09	.07	.91	1.08	.07	.91
Aggression parcel 2	.69	.05	.86	.69	.05	.86
Aggression parcel 3	.84	.05	.89	.84	.05	.89
Aggression parcel 4	.88	.05	.85	.88	.05	.85
Aggression parcel 5	1.00	-	.93	1.00	-	.93
Structural Path						
Aggression Kindergarten - Aggression grade 7	.44	.05	.42***	.45	.05	.42***
Positive SIP	-.55	.16	-.15***	-.46	.16	-.13**
Warmth	-.18	.11	-.07	-.15	.11	-.06
Involvement	.00	.02	.01	.01	.02	.03
Proactive Guidance	-.15	.07	-.10*	-.17	.07	-.12*
Discussion	-.05	.03	-.07	-.03	.03	-.05
Warmth X SIP	-	-	-	2.75	.94	.14**
Involvement X SIP	-	-	-	-.57	.22	-.14*
Proactive Guidance X SIP	-	-	-	.53	.76	.04
Discussion X SIP	-	-	-	.61	.28	.10*
Model Comparison[2]	Ho: $\beta_{(\text{warmth X SIP})} = 0$, $\beta_{(\text{involvement X SIP})} = 0$, $\beta_{(\text{guidance X SIP})} = 0$, $\beta_{(\text{discussion X SIP})} = 0$, in the population. $\Delta\chi^2$ (56) = 184.62, p = .05 >critical χ^2 (56)=74.47 p = .05					
SMC[3]						
Aggression grade 7			.241			.261

Notes. [1]All factor loadings are significant. [2]Fit indices of main effect model (χ^2 (67)= 120.92, p = .00, χ^2/df = 1.81, CFI = .99, TLI = .98, RMSEA = .04, p =.98) and interaction model (χ^2 (123) = 305.53, p = .00, χ^2/df IN/DF = 2.48, CFI = .97, TLI = .95, RMSEA = .05, p =.45). [3]SMC, percentage of the variance in latent outcome variable accounted by the model. * p < .05, ** p < .01, *** p < .001.

Table 11

Unstandardized and Standardized Coefficients Showing Macro Interaction Model of Kindergarten Positive Parenting and School Aged Children's Positive Social Information Processing Predicting Socially Skilled Behavior in Grade 7 after Controlling for Kindergarten Social Skills.

	Social Skills					
	Main effect model			Interaction model		
	B	Se B	β	B	Se B	β
Factor Loadings[1]						
Social Skills Kindergarten						
Understands others feelings	1.00	-	.86	1.00	-	.86
Socially aware	1.00	.03	.85	.1.00	.03	.85
Accurately interpret	.97	.04	.87	.97	.04	.87
Refrains	.97	.05	.75	.97	.05	.75
Generates many	.99	.04	.86	.99	.04	.86
Generates good	1.05	.04	.88	1.05	.04	.88
Aware	1.08	.04	.88	1.08	.04	.88
Social Skills grade 7						
Understands others feelings	.96	.04	.85	.96	.05	.85
Socially aware	.96	.05	.85	.96	.05	.85
Accurately interpret	.95	.04	.89	.95	.04	.89
Refrains	1.08	.06	.82	1.08	.06	.82
Generates many	1.00	-	.85	1.00	-	.85
Generates good	1.03	.03	.86	1.03	.03	.86
Aware	1.14	.05	.88	1.14	.05	.88
Structural Path						
Social Skills Kindergarten - Social Skills grade 7	.30	.05	.29***	.29	.05	.28***
SIP – Social Skills grade 7	2.66	.44	.29***	2.61	.43	.29***
Warmth	.31	.30	.05	.33	.29	.05
Involvement	.04	.19	.04	.02	.05	.03
Proactive Guidance	.12	.19	.03	.15	.18	.04
Discussion	.18	.08	.10*	.16	.08	.09~
Warmth X SIP	-	-	-	-2.36	2.50	-.05
Involvement X SIP	-	-	-	1.14	.58	.11*
Proactive Guidance X SIP	-	-	-	-1.30	2.02	-.04
Discussion X SIP	-	-	-	-.76	.75	-.05
Model Comparison[2]	Ho: $\beta_{(\text{warmth X SIP})} = 0$, $\beta_{(\text{involvement X SIP})} = 0$, $\beta_{(\text{guidance X SIP})} = 0$, $\beta_{(\text{discussion X SIP})} = 0$, in the population. $\Delta\chi^2$ (72) = 109.11, $p = .05 > \chi^2$ (72)=92.81 $p = .05$					
SMC[3]						
Social Skills grade 7			.207			.208

Notes. [1]All factor loadings are significant. [2]Fit indices of main effect model (χ^2 (129) = 367.73, $p = .00$, χ^2/df = 2.85, CFI = .97, TLI = .96, RMSEA = .06, $p = .06$) and interaction model (χ^2 (201) = 566.83, $p = .00$, χ^2/df = 2.82, CFI = .96, TLI = .94, RMSEA = .06, $p = .04$). [3]SMC, percentage of the variance in latent outcome variable accounted by the model. ~ $p < .10$, * $p < .05$, *** $p < .001$.

Table 12

Summary of Hierarchical Regression Analysis for Interactions of Positive Parenting and Positive Social Information Processing Predicting Aggression in Grade 7.

	Encoding relevance as moderator [a]					Benign attribution as moderator[b]					Competent response generation as moderator[c]					Competent response evaluation as moderator[d]				
Variable	*B*	*SE B*	*β*	R^2	Δ R^2	*B*	*SE B*	*β*	R^2	Δ R^2	*B*	*SE B*	*β*	R^2	Δ R^2	*B*	*SE B*	*β*	R^2	Δ R^2
Step 1				.17	.17***				.17	.17***				.17	.17***				.17	.17***
Teacher-rated aggression	.41	.05	.37***			.40	.05	.36***			.39	.05	.36***			.41	.05	.37***		
SIP K-grade 3[a,b,c,d]	-.20	.12	-.08~			-.26	.08	-.15**			-.29	.09	-.15**			-.07	.03	-.10*		
Step 2				.22	.05**				.23	.06***				.23	.06***				.24	.05***
Warmth	-.08	.06	-.06			-.12	.06	-.10*			-.08	.06	-.06			-.13	.06	-.10*		
Involvement	-.00	.02	-.01			-.00	.02	-.01			-.00	.02	-.01			.01	.02	.02		
Guidance	-.06	.03	-.08~			-.07	.03	-.10*			-.06	.03	-.09~			-.06	.03	-.09*		
Discussion	-.04	.02	-.09~			-.04	.02	-.08~			-.03	.02	-.07			-.03	.02	-.07		
Step 3				.24	.03**				.24	.01				.24	.02~				.29	.06***
Warmth X SIP	1.02	.39	.14*			.15	.33	.02			.86	.36	.11*			.52	.12	.21***		
Involvement X SIP	-.37	.12	-.16**			.00	.08	.00			.06	.09	.03			-.11	.04	-.16**		
Guidance X SIP	.27	.25	.05			.31	.18	.08~			-.05	.19	-.01			.12	.07	.08~		
Discussion X SIP	.24	.15	.08			.09	.12	.03			.12	.12	.04			.08	.04	.10*		

Note. [a] Benign attribution , [b] Competent response endorsement , [c] Encoding relevance [d] Competent response generation ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 13

Summary of Hierarchical Regression Analysis for Interactions of Positive Parenting and Positive Social Information Processing Predicting Social Skills in Grade 7.

	Encoding relevance as moderator [a]					Benign attribution as moderator[b]					Competent response generation as moderator[c]					Competent response evaluation as moderator[d]				
Variable	*B*	*SE B*	*β*	R^2	Δ R^2	*B*	*SE B*	*β*	R^2	Δ R^2	*B*	*SE B*	*β*	R^2	Δ R^2	*B*	*SE B*	*β*	R^2	Δ R^2
Step 1				.17	17***				.17	.17***				.17	.17***				.17	.17***
Teacher-rated Social skills	.35	.05	.32***			.39	.05	.36***			.36	.05	.33***			.39	.05	.35***		
SIP Y1-4[a,b,c,d]	1.75	.36	.25***			.79	.25	.15**			1.14	.27	.20***			.16	.10	.07		
Step 2				.24	09***				.22	.05***				.23	.06***				.21	.04**
Warmth	.03	.18	.01			.21	.18	.06			.13	.18	.03			.23	.18	.06		
Involvement	.05	.04	.06			.08	.05	.09~			.07	.05	.08			.07	.05	.07		
Guidance	.09	.10	.04			.14	.10	.07			.13	.10	.06			.15	.10	.07		
Discussion	.09	.06	.07			.07	.06	.05			.05	.06	.04			.07	.06	.05		
Step 3				.27	.02				.22	.00				.24	.01				.23	.02*
Warmth X SIP	-1.92	1.16	-.09			-.81	1.0	-.04			-1.13	1.08	-.05			-.60	.36	-.08		
Involvement X SIP	.93	.36	.13*			-.09	.23	-.02			-.01	.27	-.00			.26	.11	.13*		
Guidance X SIP	-.40	.74	-.03			-.02	.53	-.00			.26	.58	.02			-.21	.22	-.05		
Discussion X SIP	-.43	.44	-.05			-.31	.37	-.04			-.62	.36	-.08~			-.21	.12	-.08~		

Note. [a] Benign attribution , [b] Competent response evaluation [c] Encoding relevance [d] Competent response generation ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$.

Table 14

Unstandardized Regression Slopes Depicting Significant Positive Parenting (Warmth, Involvement, Guidance, and Discussion) X Positive Social Information Processing (Benign Attributions, Competent Response Endorsement, Encoding Relevance, and Competent Response Generation) Interactions Predicting Child Aggression.

Predictor	Encoding relevance			Benign attributions			Competent response generation			Competent response evaluation		
	Low	Mean	High	Low	Mean	High	Low	Mean	High	Low	Mean	High
Warmth	-.22**	-.08	.06	-	-	-	-.22**	-.08	.06	-.37***	-.13*	.11
Involvement	-.03~	-.08	-.13***	-	-	-	-	-	-	.06***	.01	-.04***
Proactive Guidance	-	-	-	-.12**	-.07*	-.01	-	-	-	-.12**	-.06*	-.01
Discussion	-	-	-	-	-	-	-	-	-	-.04***	-.03	-.02

Note. ~ $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Table 15

Unstandardized Regression Slopes Depicting Significant Positive Parenting (Warmth, Involvement, Guidance, and Discussion) X Positive Social Information Processing (Benign Attributions, Competent Response Endorsement, Encoding Relevance, and Competent Response Generation) Interactions Predicting Child Social Skills.

Predictor	Encoding relevance			Benign attributions			Competent response generation			Competent response evaluation		
	Low	Mean	High	Low	Mean	High	Low	Mean	High	Low	Mean	High
Warmth	-	-	-	-	-	-	-	-	-	-	-	-
Involvement	-.08	.05	.18**	-	-	-	-	-	-	-.05	.07	.19**
Guidance	-	-	-	-	-	-	-	-	-	-	-	-
Discussion	-	-	-	-	-	-	.15*	.05	-.06	.16*	.07	-.03

Note. * $p < .05$, ** $p < .01$, *** $p < .001$

Figures

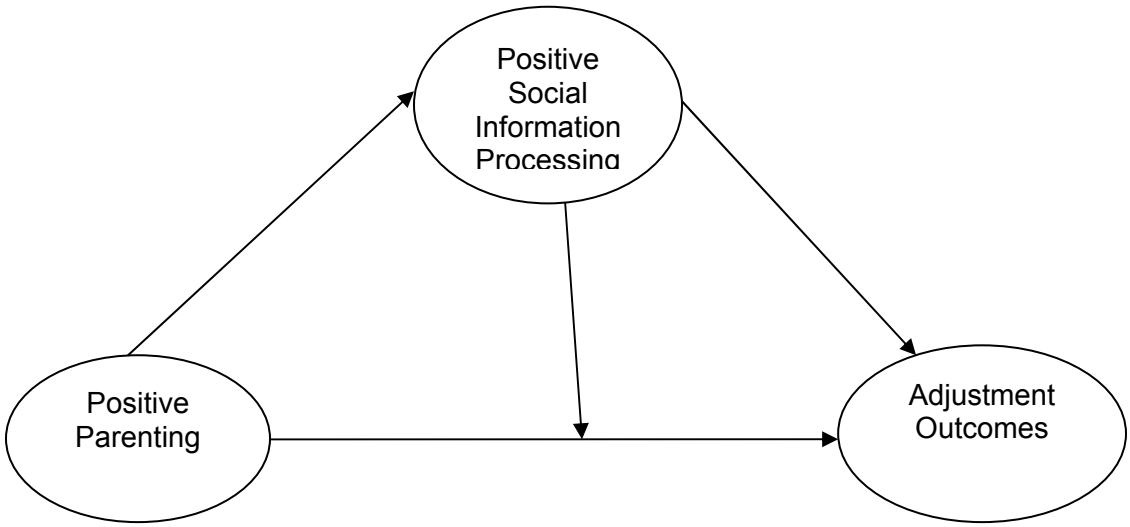

Figure 1.

The Conceptual Model of the Study

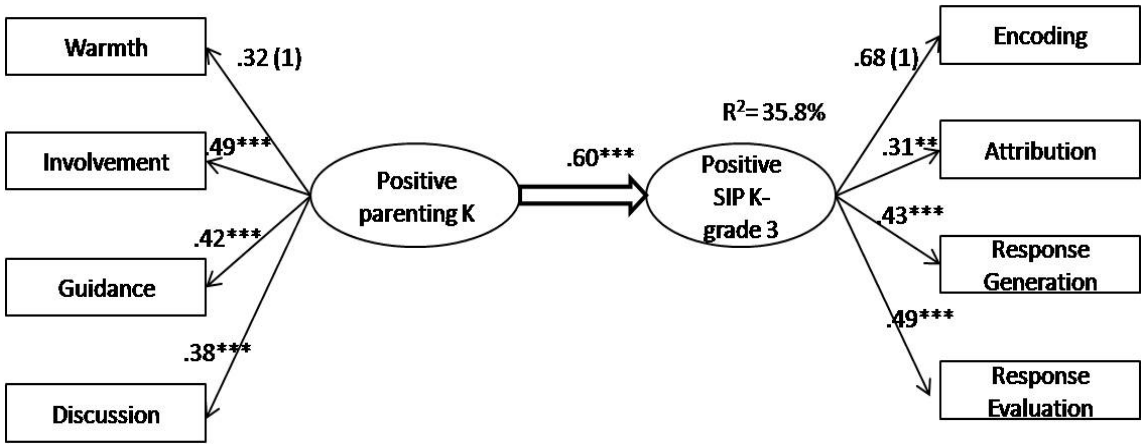

Figure 2
Structural Equation Model Indicating Standardized Coefficients of Kindergarten Positive Parenting as a Predictor of Elementary School Positive Social Information Processing.

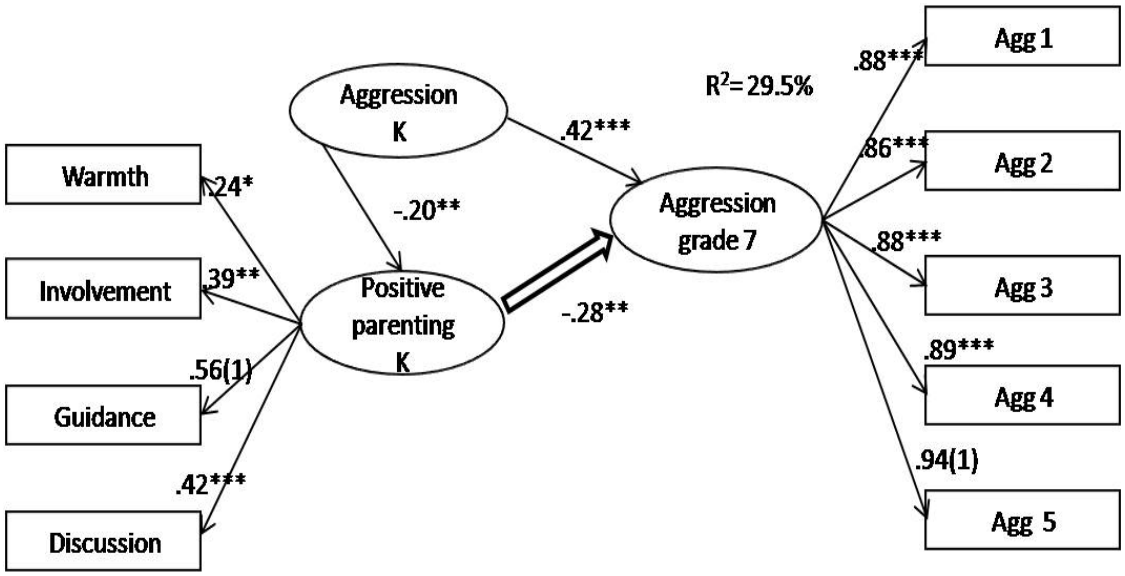

Figure 3
Structural Equation Model Indicating Standardized Coefficients of Kindergarten Positive Parenting as a Predictor of Grade 7 Aggressive Behavior After Controlling for Kindergarten Aggressive Behavior.

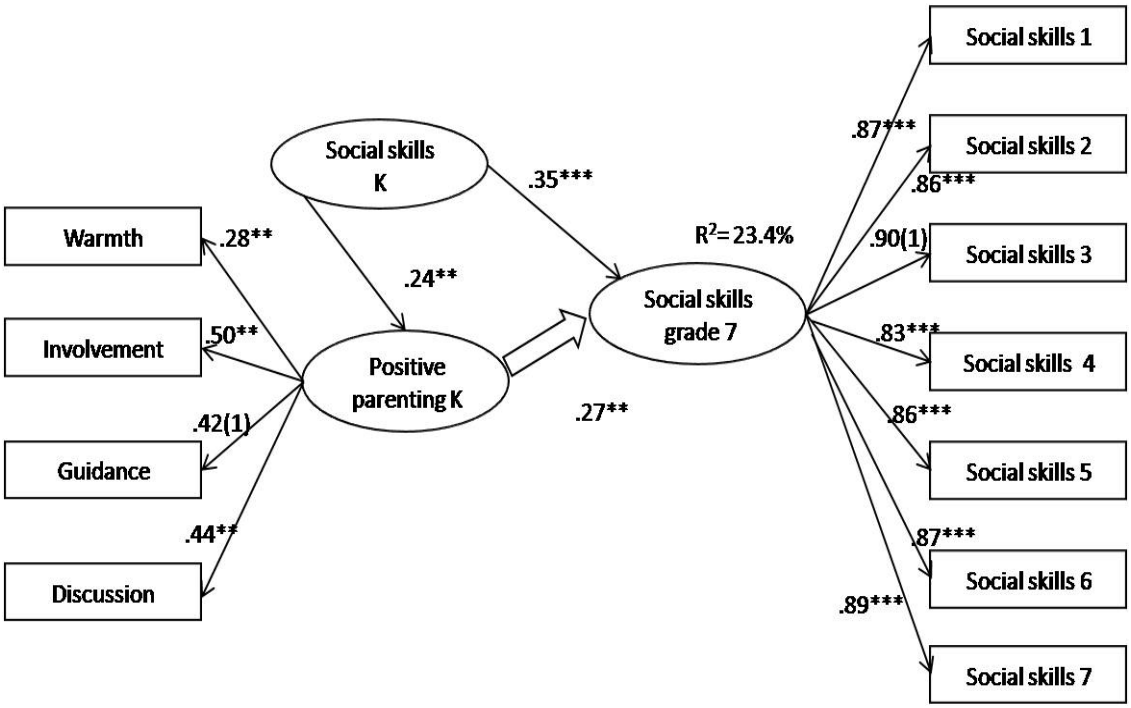

Figure 4
Structural Equation Model Indicating Standardized Coefficients of Kindergarten Positive Parenting as a Predictor of Grade 7 Socially Skilled Behavior After Controlling for Kindergarten Social Skills.

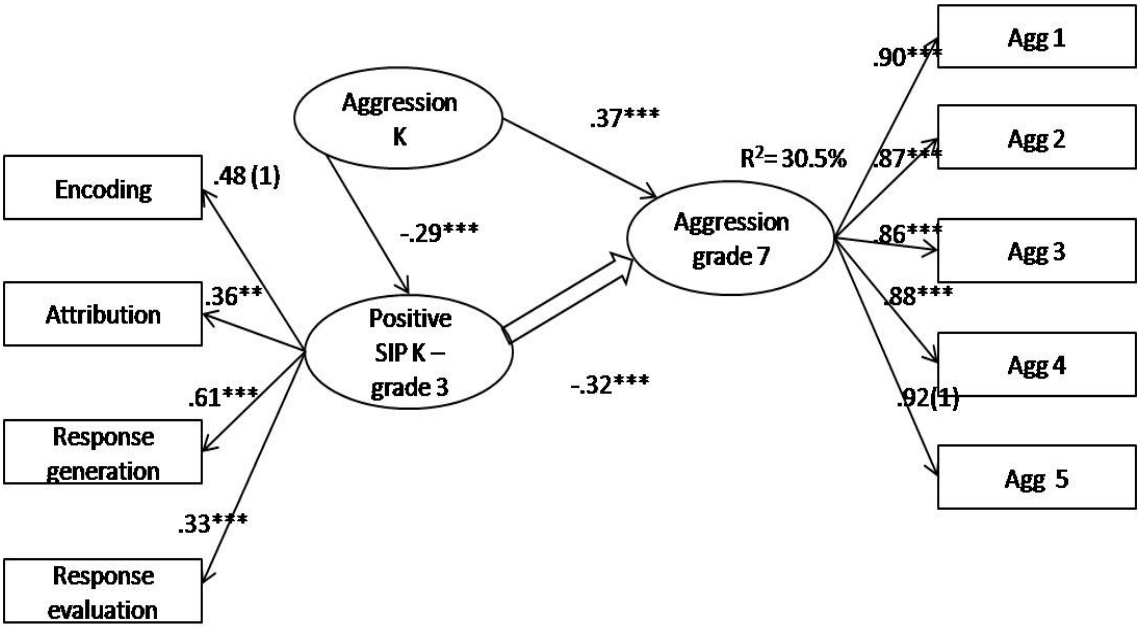

Figure 5
Structural Equation Model Indicating Standardized Coefficients of Elementary School Positive Social Information Processing as a Predictor of Grade 7 Aggressive Behavior After Controlling for Kindergarten Aggressive Behavior.

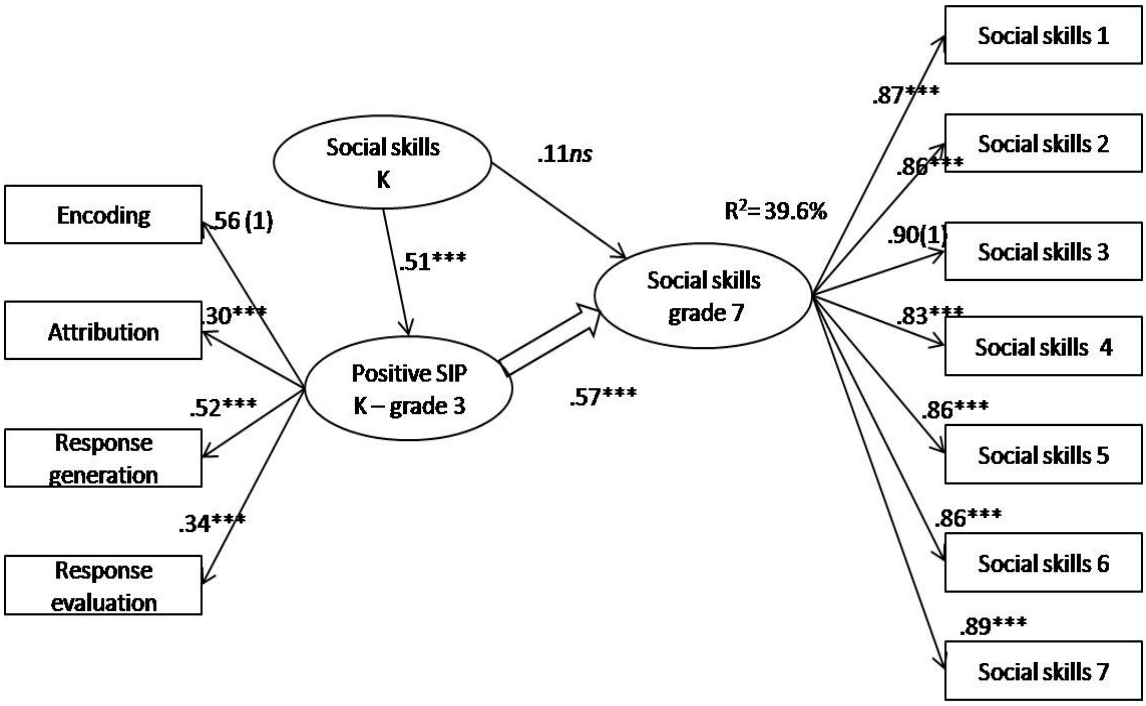

Figure 6
Structural Equation Model Indicating Standardized Coefficients of Elementary School Positive Social Information Processing as a Predictor of Grade 7 Social Skills After Controlling for Kindergarten Social Skills.

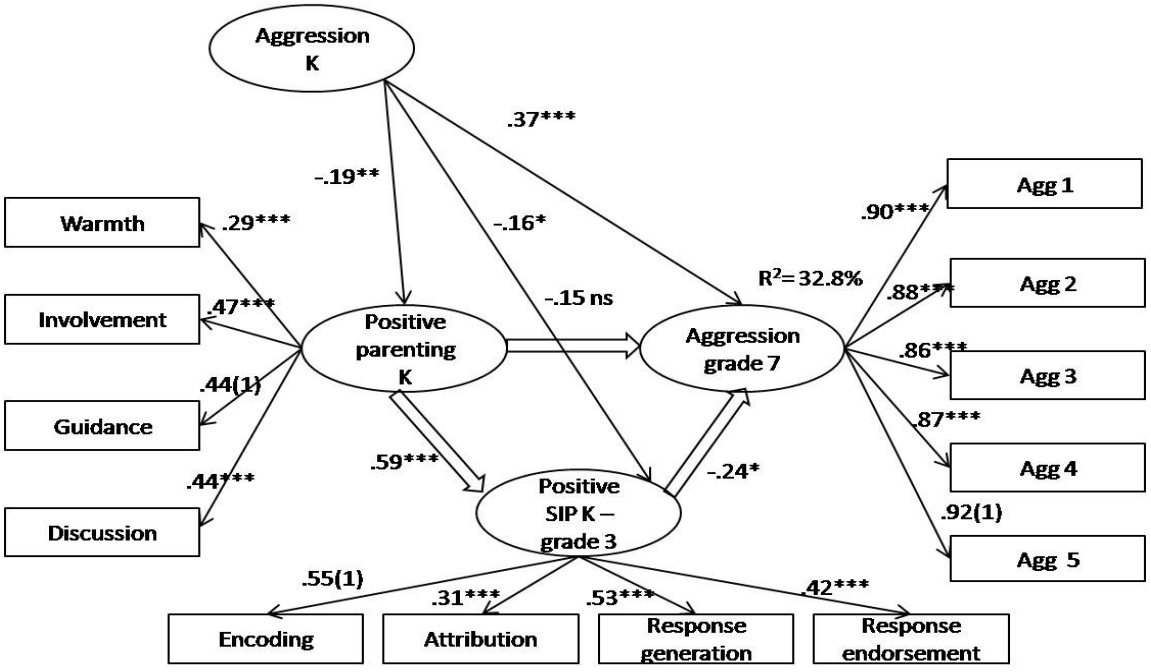

Figure 7
Structural Equation Model Indicating Standardized Coefficients of Elementary School Social Information Processing as a Mediator of Early Childhood Positive Parenting and Aggression in Grade 7 After Controlling for Kindergarten Aggression.

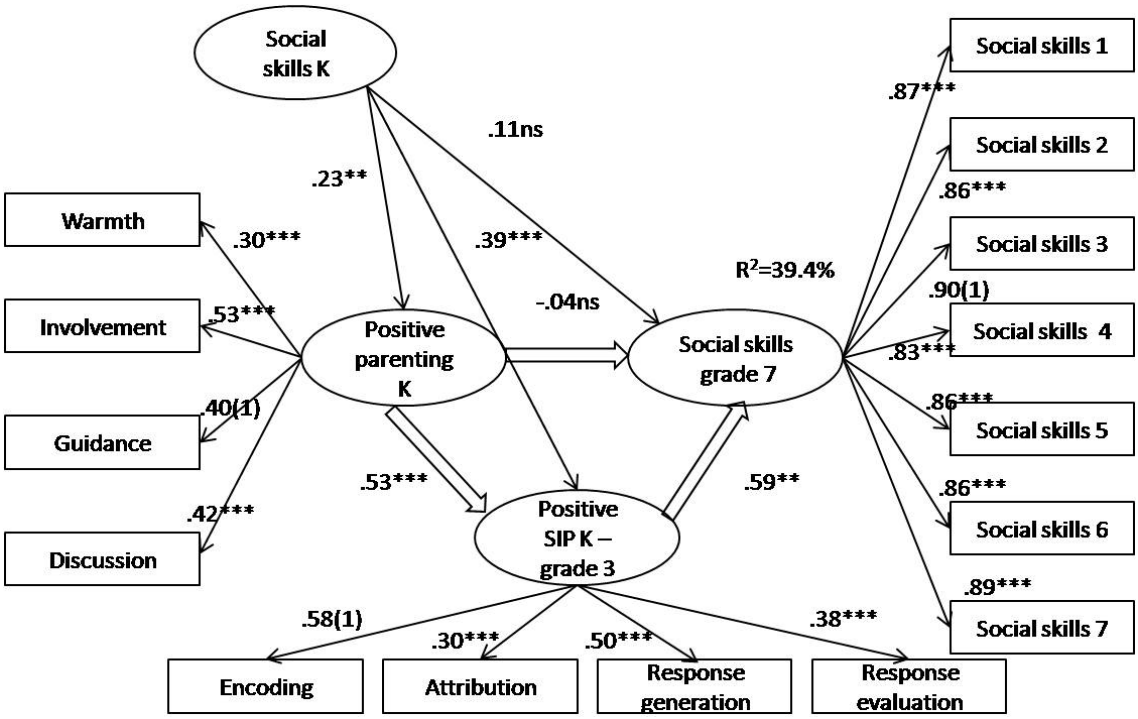

Figure 8
Structural Equation Model Indicating Standardized Coefficients of Elementary School Social Information Processing as a Mediator of Kindergarten Positive Parenting and Social Skills in Grade 7 After Controlling for Social Skills in Kindergarten.

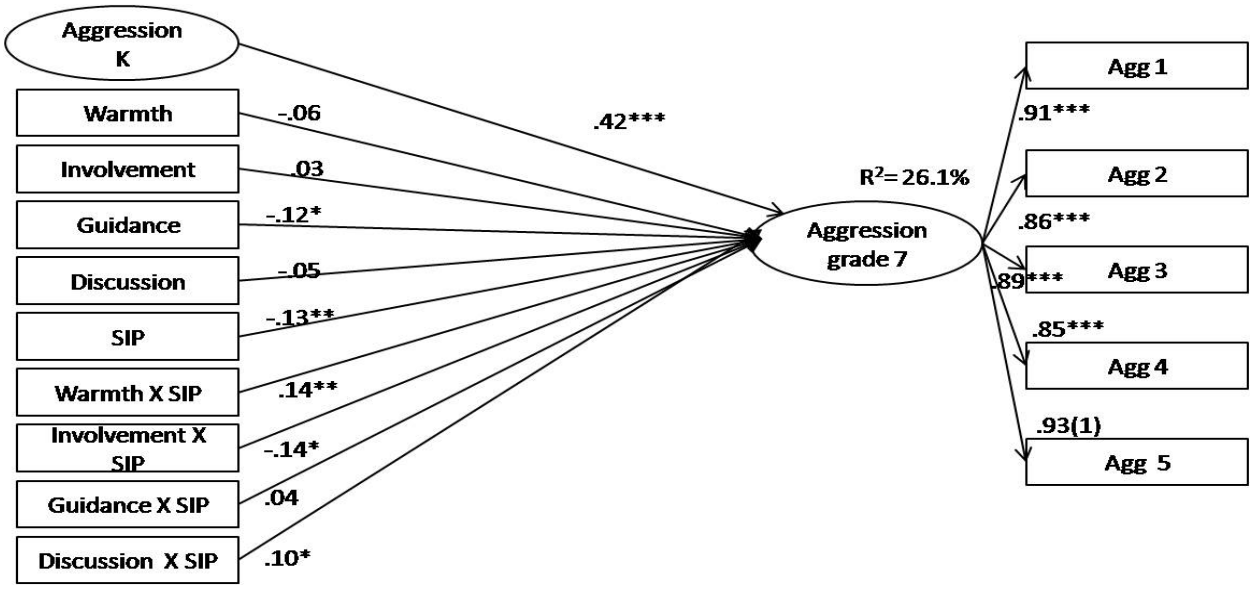

Figure 9
Structural Equation Model Indicating Standardized Coefficients of Factor Scores of Overall Elementary School Social Information Processing as a Moderator of the Association of Kindergarten Parental Warmth, Involvement, Guidance, and Discussion with Aggression in Grade 7 After Controlling for Kindergarten Aggression. All the Covariances of the Exogenous Variables are Significant at p < .001.

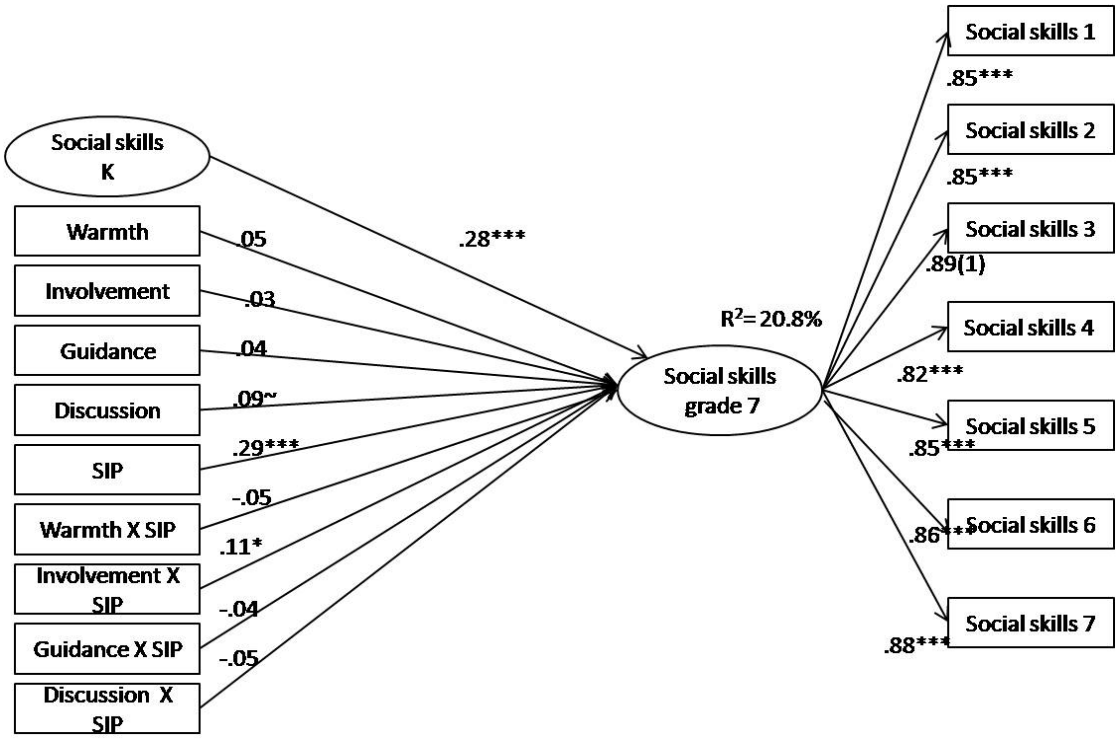

Figure 10
Structural Equation Model Indicating Standardized Coefficients of Factor Scores of Overall Elementary School Social Information Processing as a Moderator of the Associations of Kindergarten Parental Warmth, Involvement, Guidance, and Discussion with Social Skills in Grade 7 After Controlling for Kindergarten Social Skills. All the Covariances of the Exogenous Variables are Significant at p < .001.

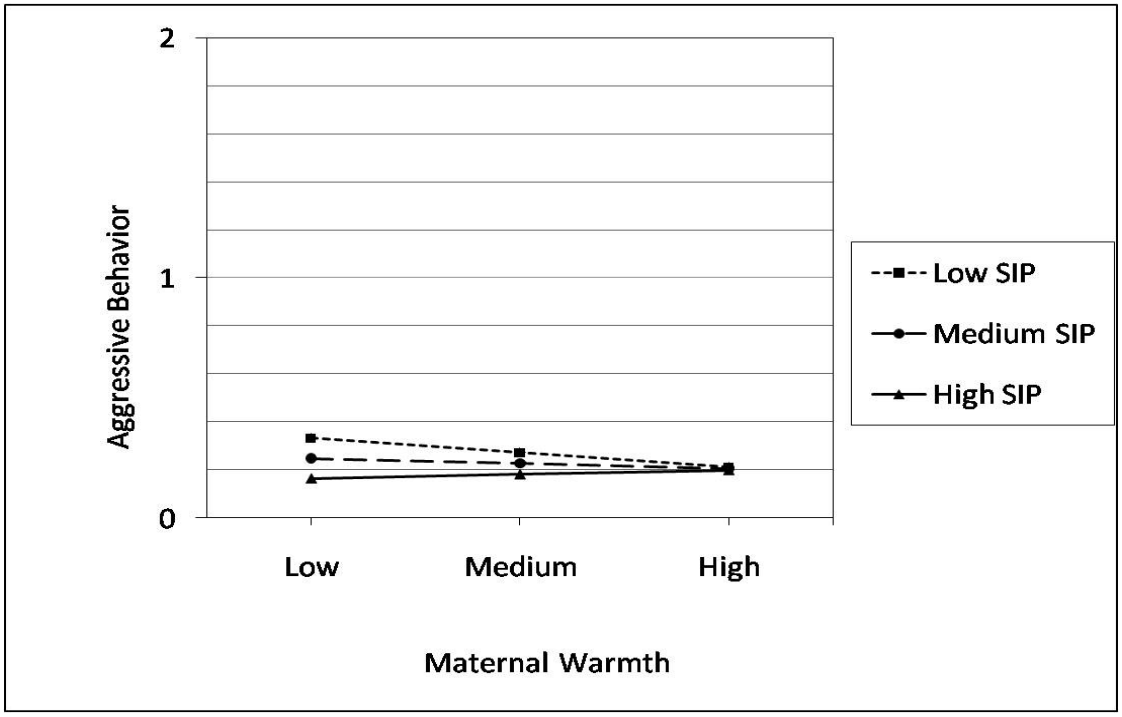

Figure 11
Positive SIP as a Moderator of Warmth and Aggression

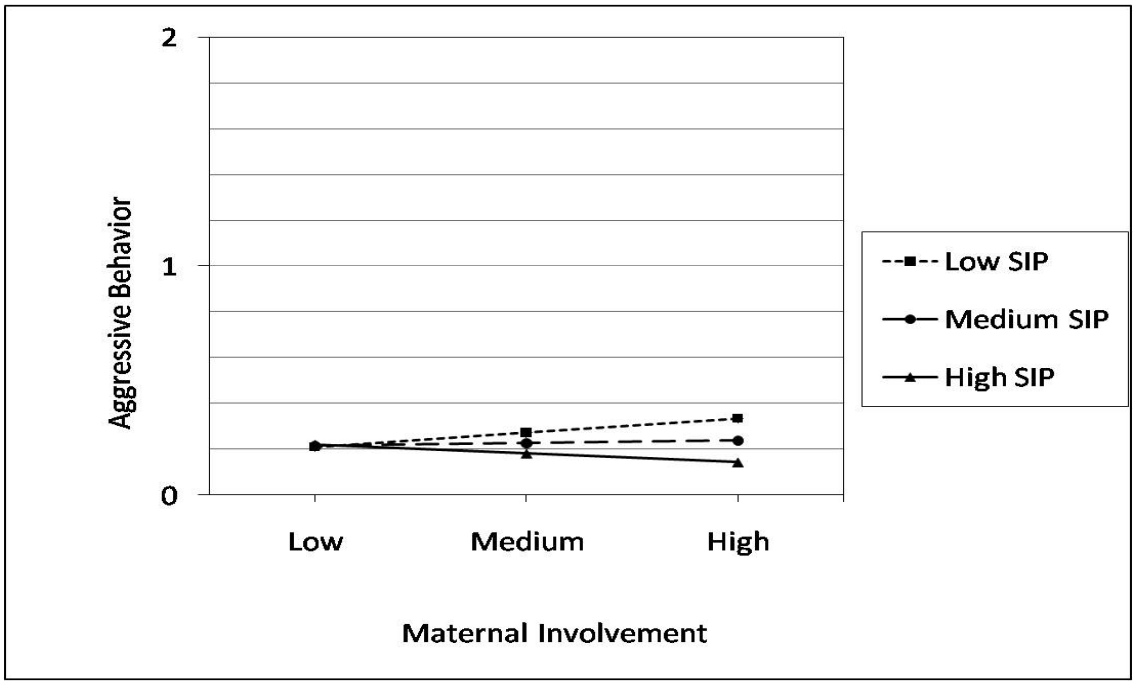

Figure 12
Positive SIP as a Moderator of Involvement and Aggression

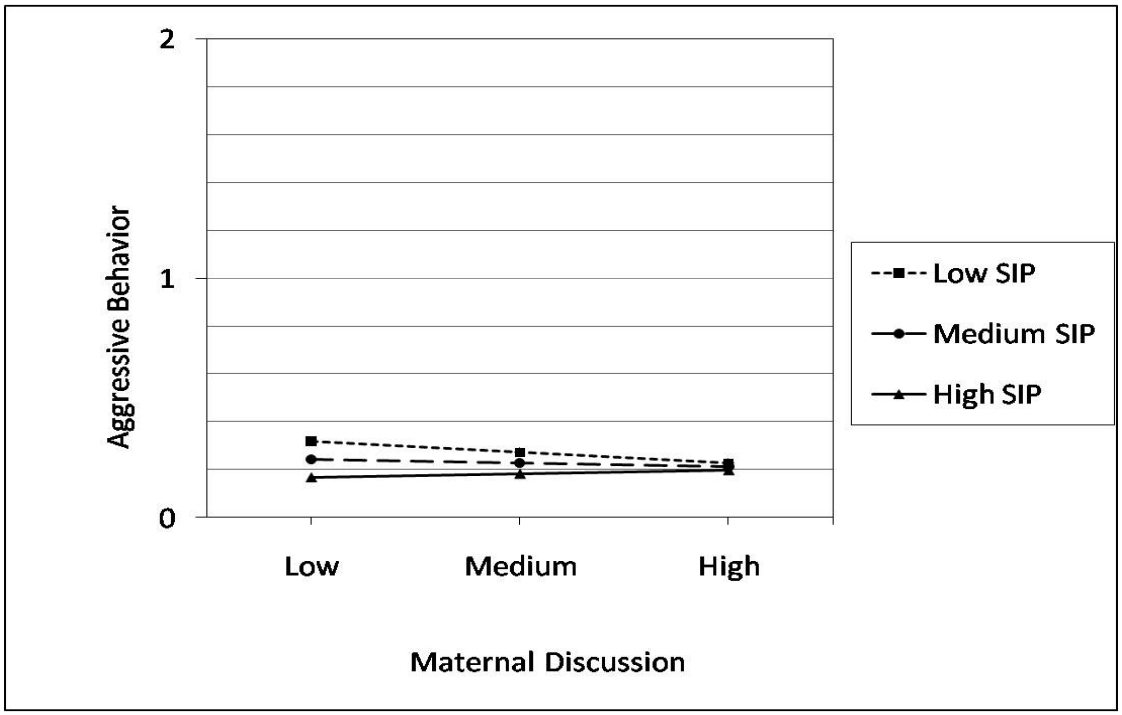

Figure 13
Positive SIP as a Moderator of Discussion and Aggression

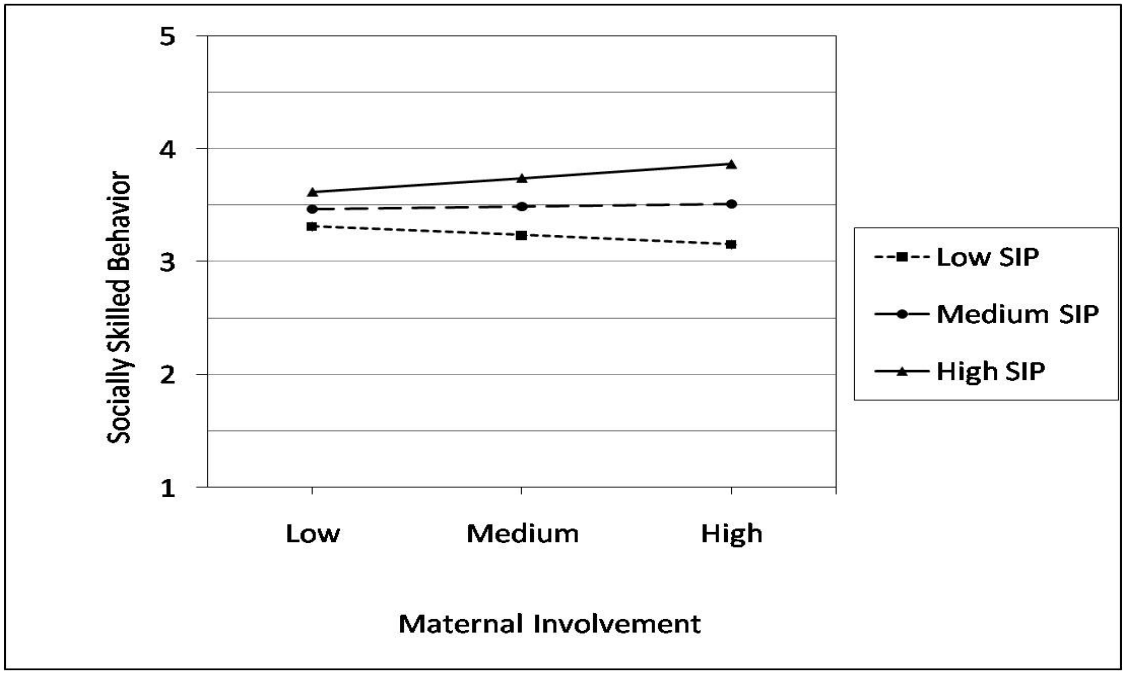

Figure 14
Positive SIP as a Moderator of Involvement and Social Skills

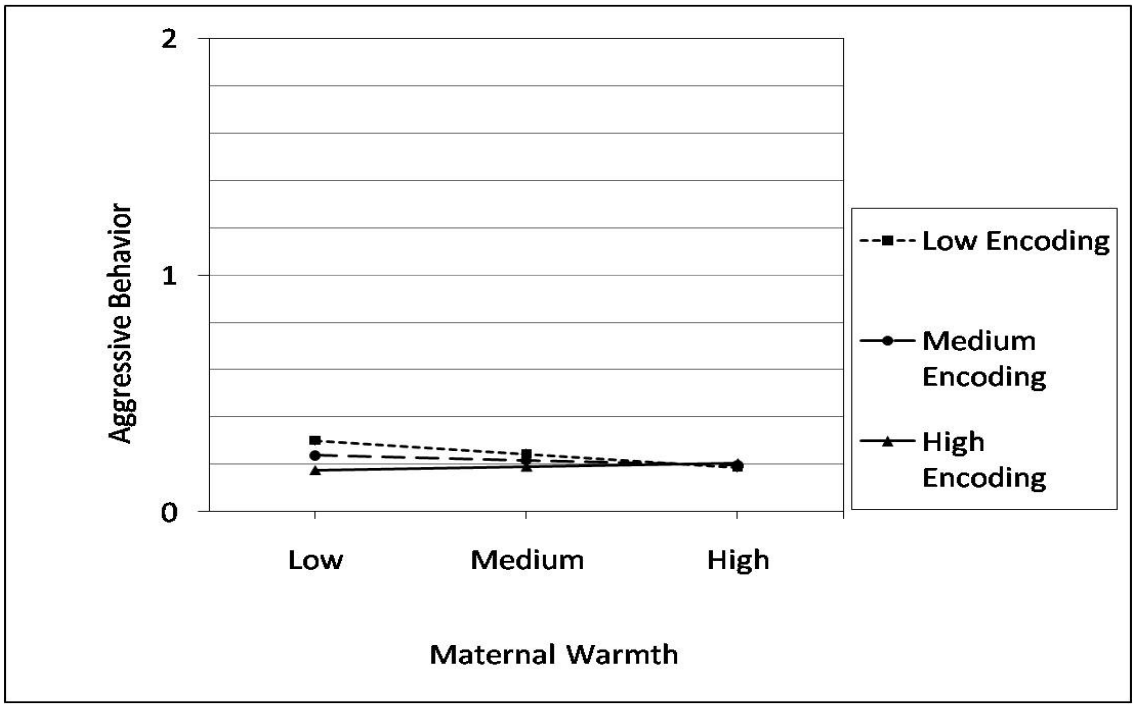

Figure 15
Encoding Relevance as a Moderator of Warmth and Aggression

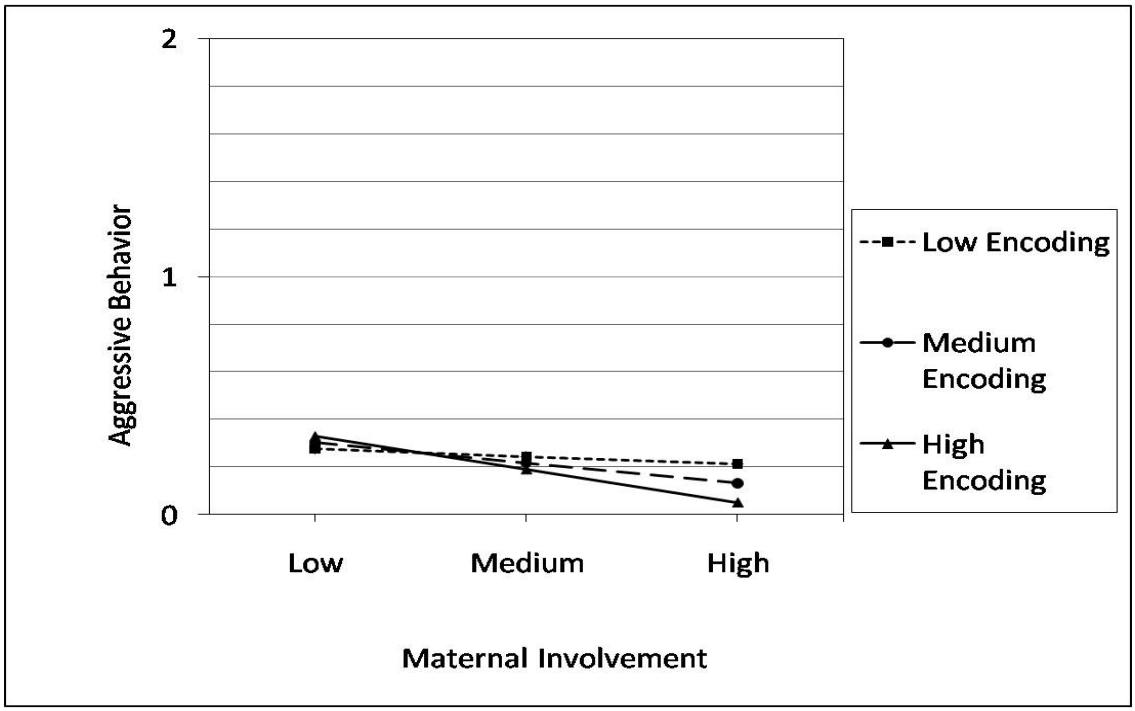

Figure 16
Encoding Relevance as a Moderator of Involvement and Aggression

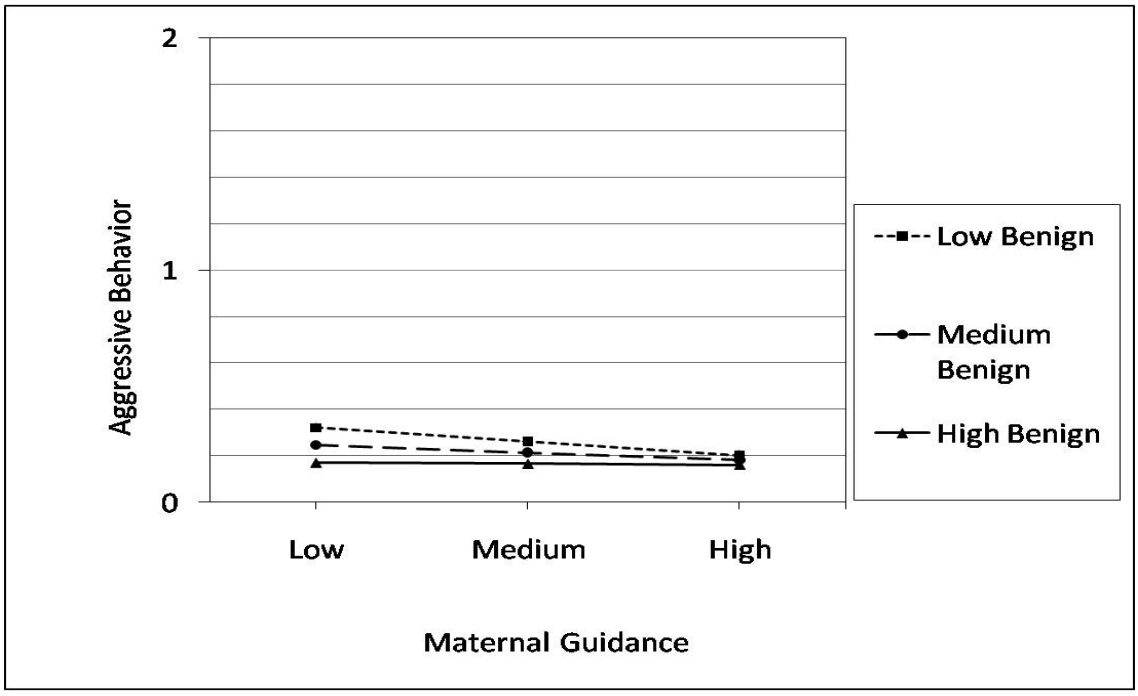

Figure 17
Benign Attribution as a Moderator of Guidance and Aggression

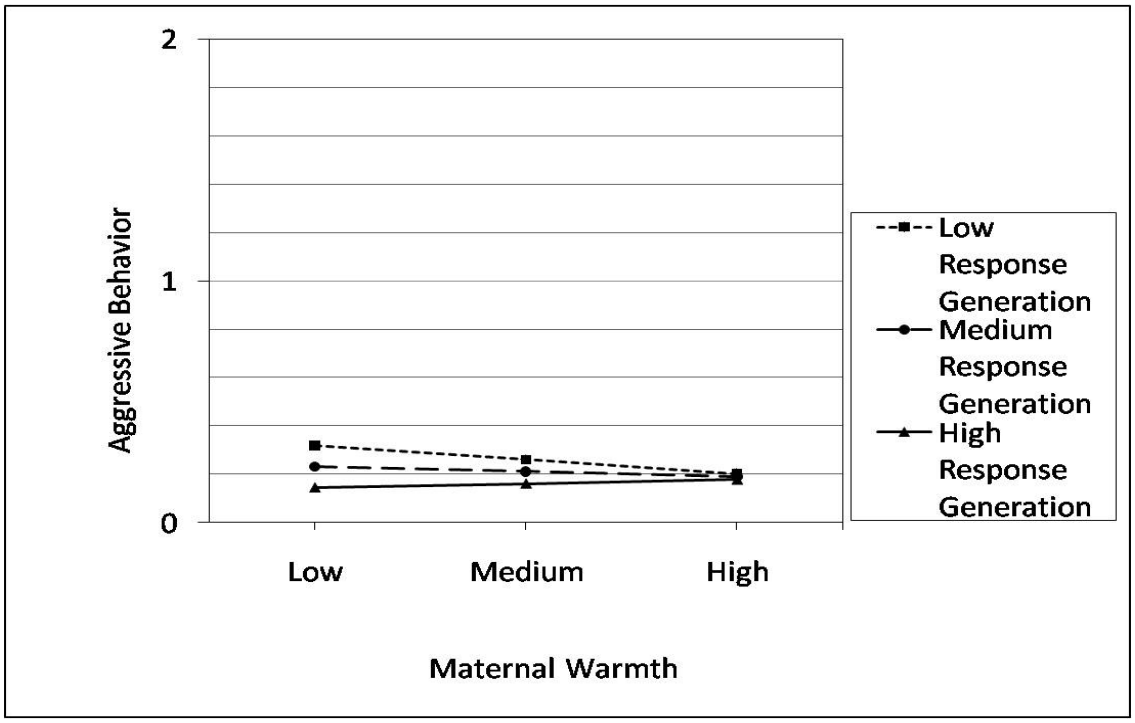

Figure 18
Response Generation as a Moderator of Warmth and Aggression

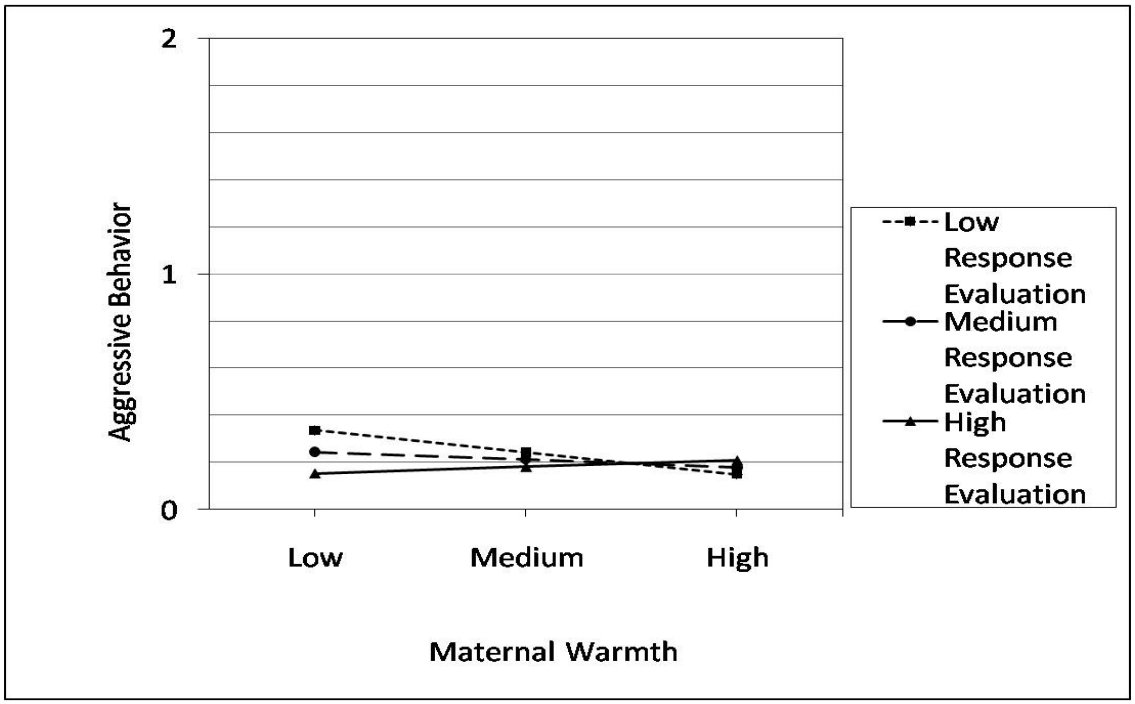

Figure 19
Response Evaluation as a Moderator of Warmth and Aggression

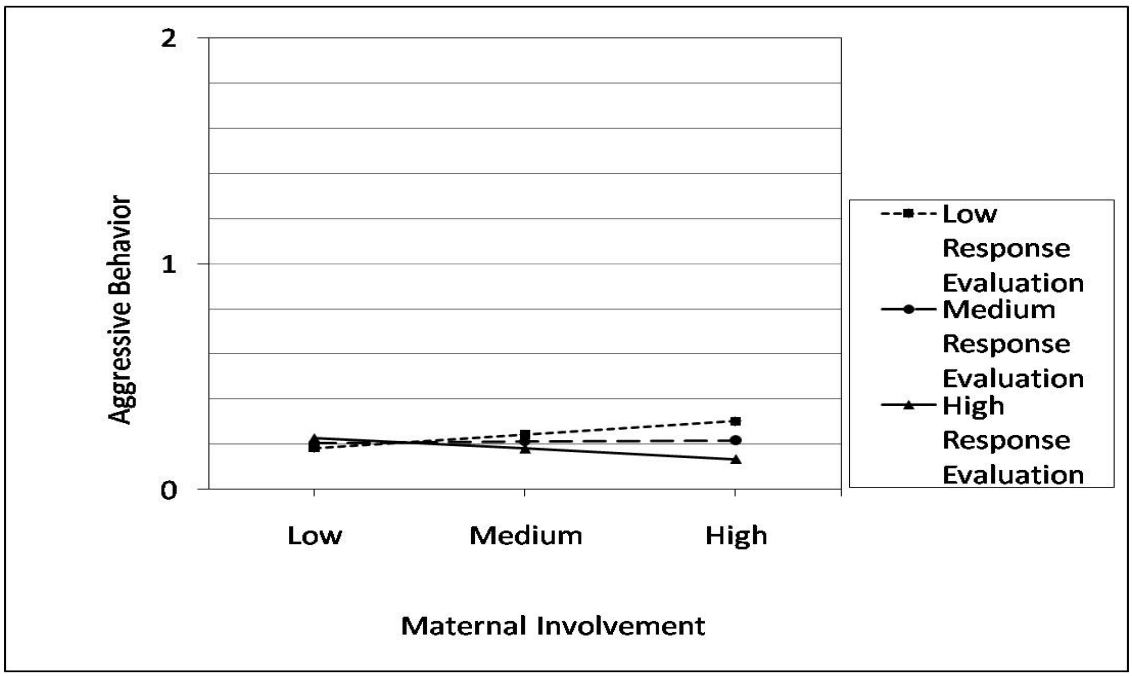

Figure 20
Response Evaluation as a Moderator of Involvement and Aggression

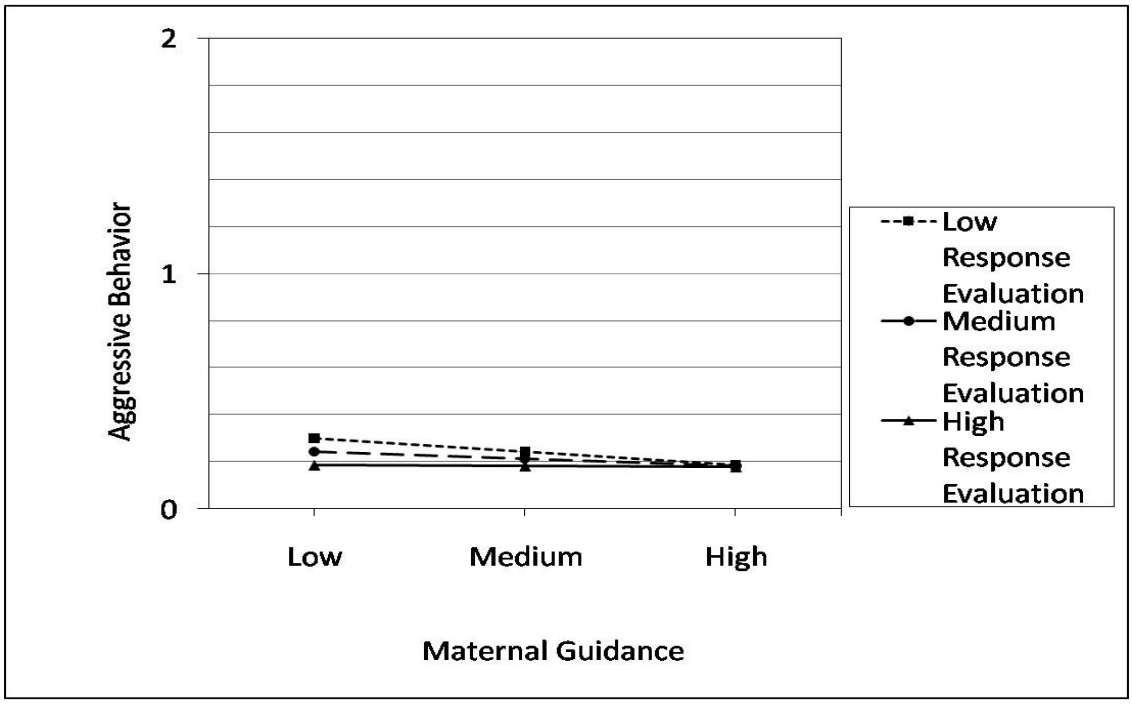

Figure 21
Response Evaluation as a Moderator of Guidance and Aggression

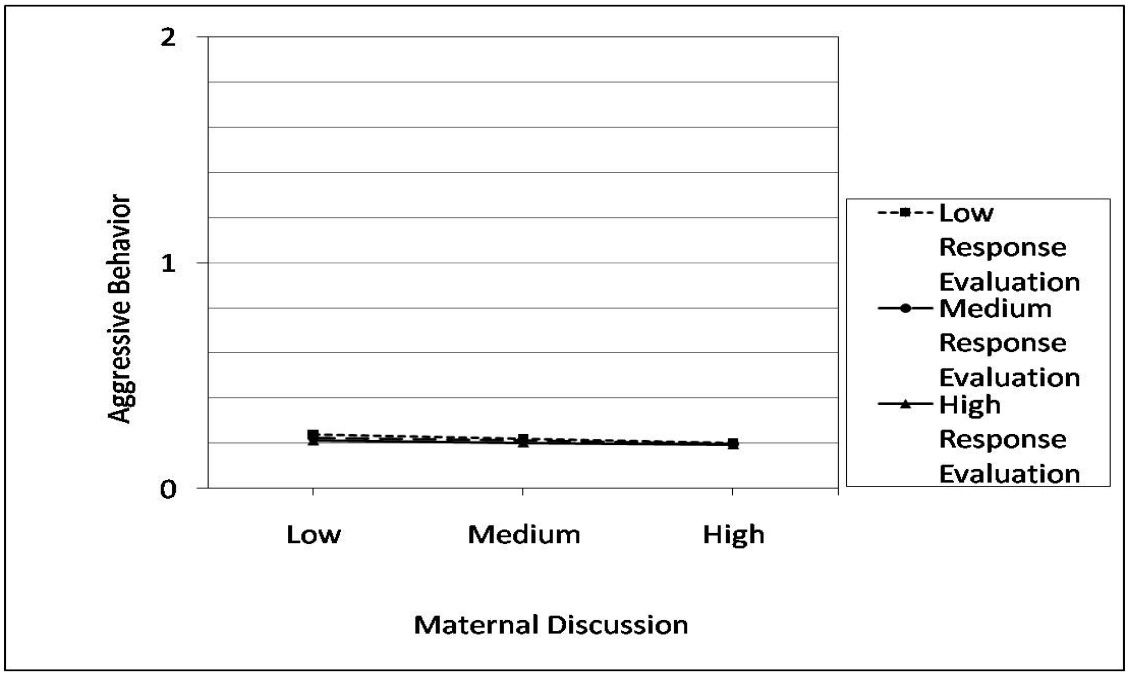

Figure 22
Response Evaluation as a Moderator of Discussion and Aggression

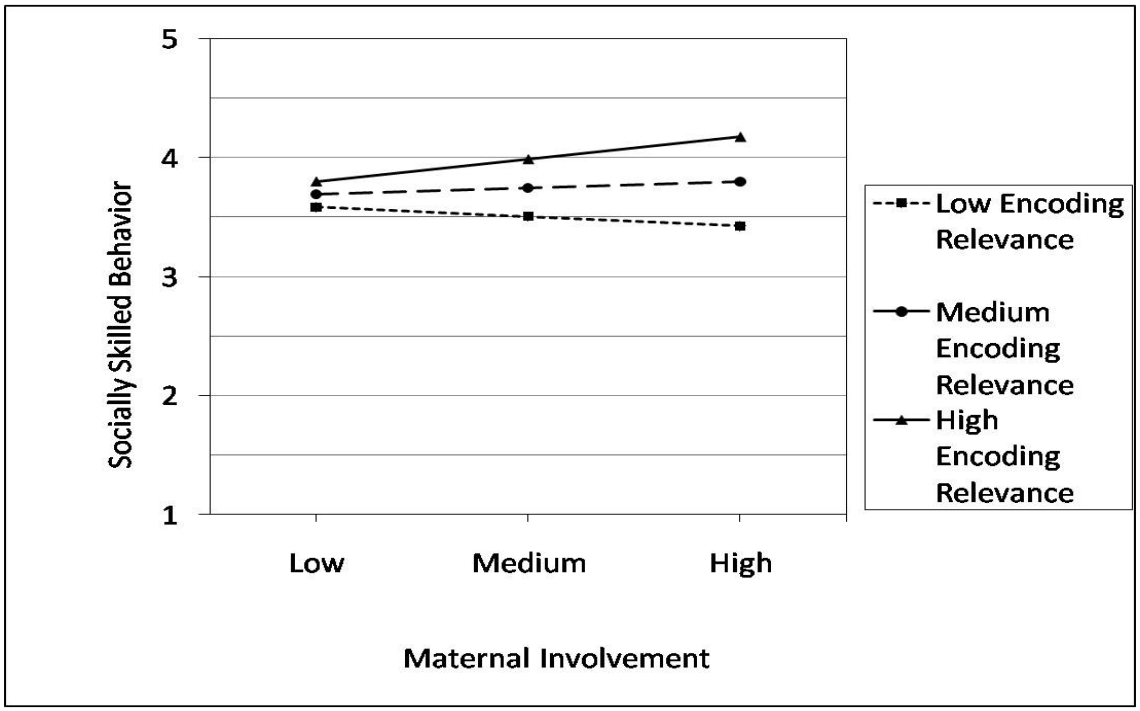

Figure 23
Encoding Relevance as a Moderator of Involvement and Social Skills

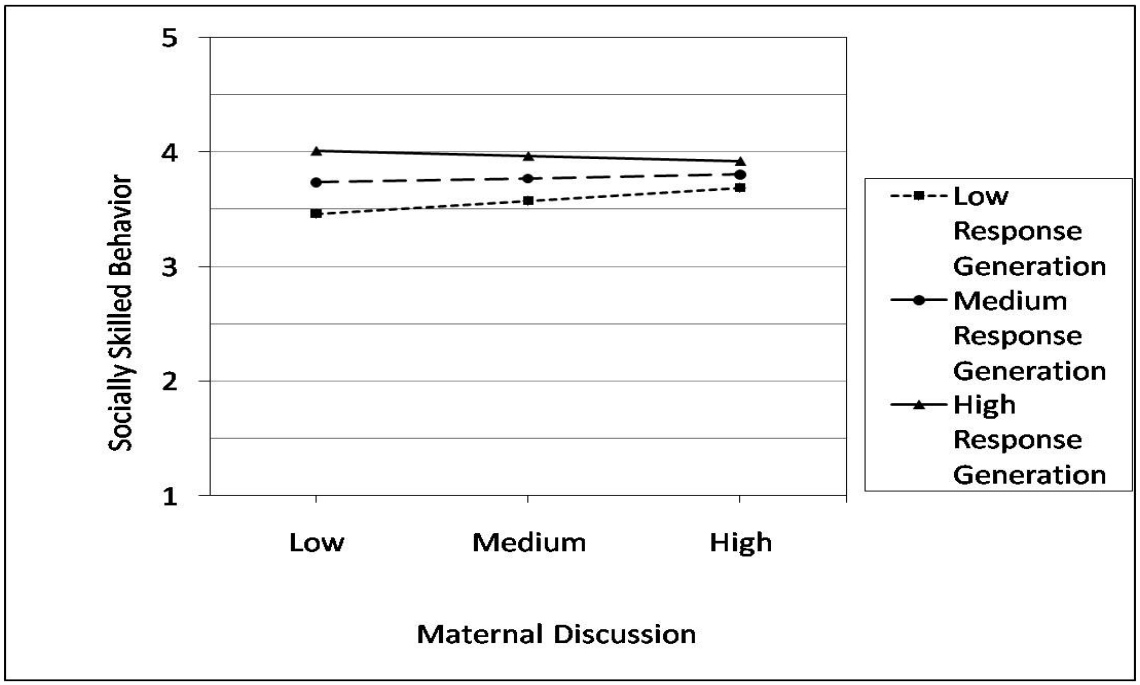

Figure 24
Response Generation as a Moderator of Discussion and Social Skills

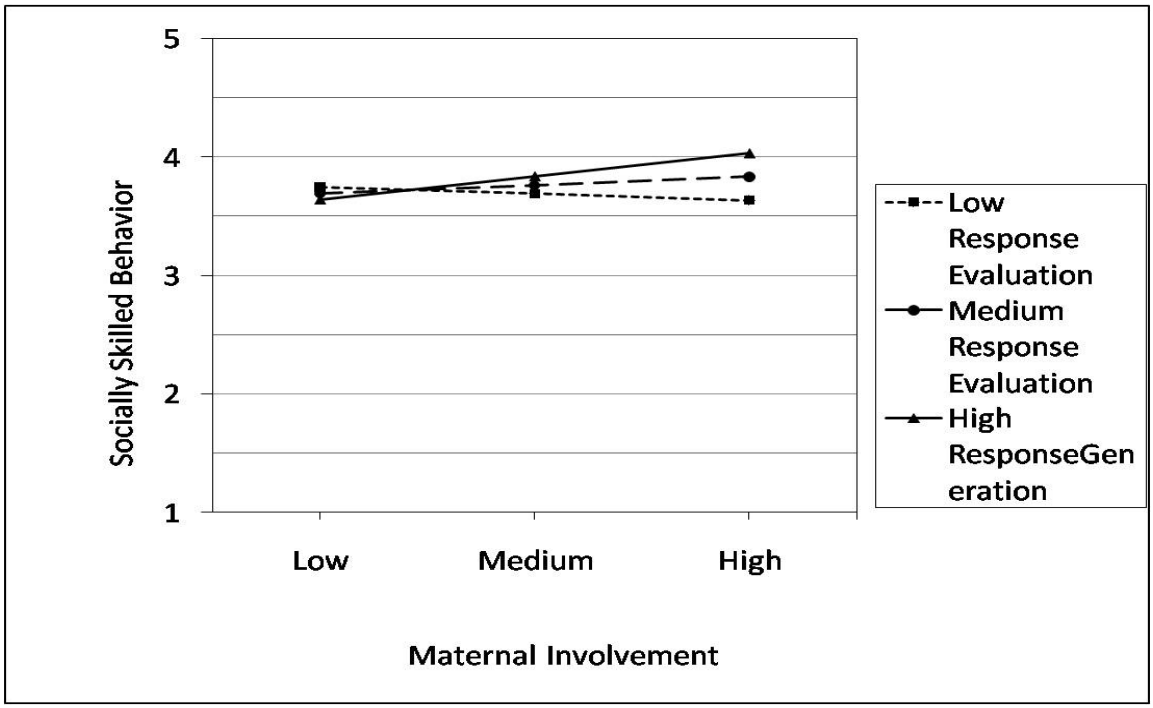

Figure 25
Response Evaluation as a Moderator of Involvement and Social Skills

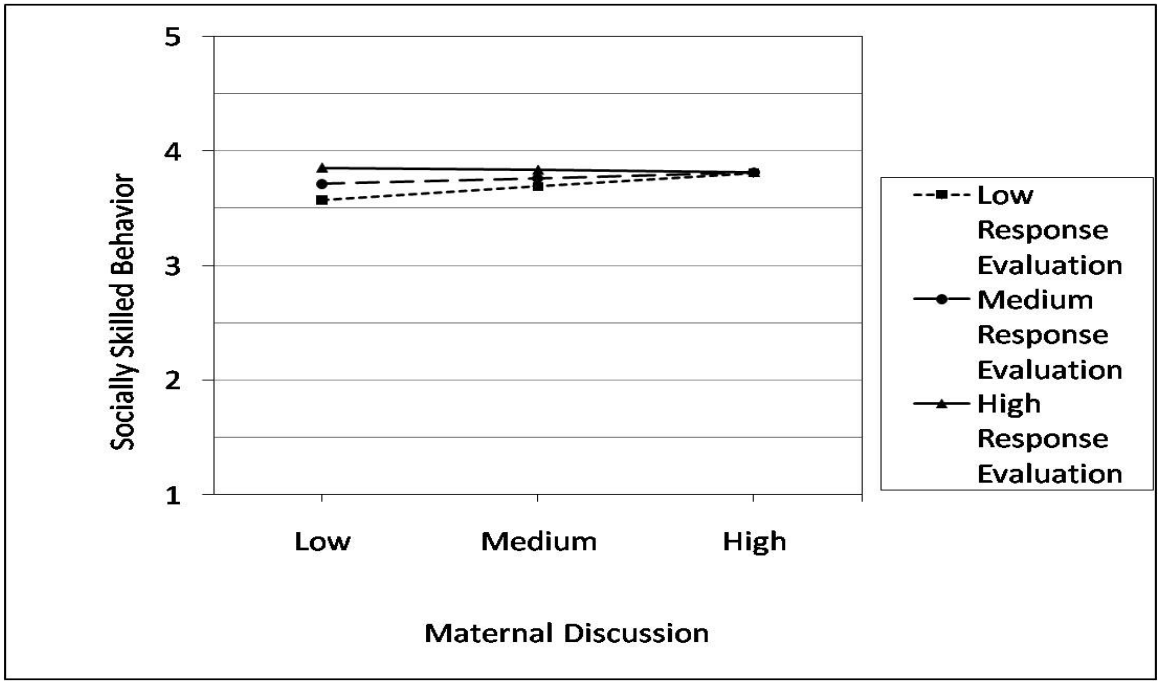

Figure 26
Response Evaluation as a Moderator of Discussion and Social Skills

Appendix B

Child Development Project Data Collection Questionnaires

I. Positive Parenting: Maternal Warmth

Observer Post-Visit Inventory

Family Name _____ **Your Name _____**

Date_____ Subject No. _____ Your Role

Inventory: Note specific examples when possible, in addition to yes/no. If you cannot answer, don't.

Mother's behavior towards children (during warmup, transitions, interruptions, etc.)

	Yes	No
1. Speaks to child with a positive tone.	1	0
2. Expresses a positive attitude when speaking of child	1	0
3. Initiates positive physical contact with child	1	0
4. Accepts positive physical contact from child	1	0

II. Positive Parenting: Parent Involvement

Parent's Name _____ MO/FA/OTHER Specify _____
Interviewer _____ Subject ID # _____
Date _____

I'd like to talk to you about _____'s experiences with family and friends from birth to now. This will mean talking about your family, _____'s activities, his/her friends, etc… To make it more manageable, I'll ask you to think about _____'s life, so far, as two "eras" or periods: _____'s first age 1 – 4 (or 4 ½) and finally this past year. The questions will cover a range of topics…some might sound dumb, seem unnecessary, or a little hard to answer. I hope it won't be too hard to remember that far back…just do the best you can and if you can't remember or prefer not to answer, that's O.K. O.K.?

(Check for understanding then start the conversational ball rolling by talking about the children in the family. Talk about the TC last. Use this time to establish rapport and to set the pace. Allow and encourage the parent to talk but keep control of the interview, keep their focus on the questions. Prompt and request elaboration, but be ready to move on if the parent meanders or balks.)

I. Let's start by talking about the children in the family. Describe each of the children in a few sentences.

Child's Name	Sex	Age	Comments:
_____	___	___	_____
_____	___	___	_____
_____	___	___	_____
_____	___	___	_____

1) Has _____ been around any children you would consider to be aggressive, by that we mean starts fights, arguments, or conflicts? (Give visual aid card for codes. Probe for who and how many the children are, what setting they meet in, and how often they meet.)

0	1	2	3	4
Never	Less than once a month	About once a month	About once a week	About everyday or more

	NONE	1-2	3+
a. siblings	0	1	2
b. neighbor	0	1	2
c. child(ren) at small group sitter's	0	1	2
a. daycare	0	1	2
b. preschool	0	1	2
c. play group, church, dance/soccer, etc.	0	1	2
d. relative	0	1	2

h. kids of parents' friends 0 1 2

i. other (specify) 0 1 2

2) Did _____ have any close friends that he/she talked about, liked to play with, seemed to prefer?

0	1	2	3	4
No one	Don't know	Several, none specific	1-2 specific	3+ specific

3) a. When _____ played/interacted with other children, how often were there conflicts or disagreements?

8	0	1	2	3
NA	None	Hardly ever	Sometimes	Most of the time

b. What were these conflicts like, what did your child <u>usually</u> do? *(decide up)*

8	1	2	3	4	5	6
NA	Don't know	Withdrew, give in	Discussed, worked it out	Sought adult help	Argue	Physical struggle

c. How did things usually turn out in the end?

8	1	2	3	4	5	6
NA	Don't know	Withdrew, give in	Resolution by child and peer	Early adult intervention (to abort)	Sought adult interventio n	Adults had to intervene

I) Involvement rating age 1-4

Rating for parent's expressed interest, concern, and effort at monitoring and planning their child's social development.

1	2	3	4	5
Unaware/ no interest	Little interest/ effort	Some interest/ effort	Moderately high interest, effort	Very high interest, effort

II) Involvement rating age 4-5

Rating for parent's expressed interest, concern, and effort at monitoring and planning their child's social development.

1	2	3	4	5
Unaware/ no interest	Little interest/ effort	Some interest/ effort	Moderately high interest, effort	Very high interest, effort

III Positive Parenting : Proactive Guidance

Concerns and Constraints Questionnaire

TCID: _____ Date_____
Mo/Fa/Other

Story 1

Let's imagine that you visit your child at kindergarten and see him or her playing on the playground in a running race. Your child tries real hard to win the race, but loses instead. After the race, your child says it was a stupid race and calls the winner a bad name.

1. Why do you think _____ acted this way? _____
_____

0	1	2	3	4	5	6
No interp. Made	OK blame	Other	Situation	State	Trait	Child misinterpret

2. If your child behaved this way, how would you feel? (Parent rating)

1	2	3	4	5
Very good		Neutral		Very bad, upset

3. What would you do if ____ acted this way?

_____
_____

(0 = not mentioned,
1 = spontaneous mention)

a) do nothing, ignore it 0 1
b) reasoning, explanations, talking about it 0 1
c) inductive reasoning (take the other child's point of view) 0 1
d) verbal punishment (scolding, reprimands, threats) 0 1
e) withdrawal of privileges/power assertion (make him/her do it) 0 1
f) directives/simple commands (tell him/her to do it) 0 1
g) proactive guidance (parent suggests an alternative) 0 1
h) physical punishment 0 1

4. Would you punish ____ and if so, how much would you punish him/her if s/he acted this way? (Parent rating)

1	2	3	4	5
Not at all		Moderately		Very Sternly

5. Children sometimes do things that make their parents worry that they will have some problems; some things parents don't worry about because they know their children will grow out of it. If your child

acted this way most of the time, how worried would you be that _____ would grow up to have problems later on?

1	2	3	4	5
Not at all		Somewhat		Very worried

6. What could you as a parent do to PREVENT your child from acting this way in the first place?
_____
_____

1. do nothing (unpreventable).
2. After the fact – non-preventive power assertion, punishment.
3. After the fact – reasoning, proactive guidance.
4. Before the fact – preventive but vague and general.
5. Before the fact – preventive: situation and method and specific.

Story 2

Let's imagine that you go to your child's school to pick him or her up. You see all the kindergarten children running to get into line. One of the other children runs hard and bumps into your child. The other kids laugh. Your child gets upset and pushes the other kid to the ground.

7. Why do you think _____ acted this way? _____
_____

0	1	2	3	4	5	6
No interp. Made	OK blame	Other	Situation	State	Trait	Child misinterpret

8. If your child behaved this way, how would you feel? (Parent rating)

1	2	3	4	5
Very good		Neutral		Very bad, upset

9. What would you do if ____ acted this way?
_____
_____

(0 = not mentioned,
1 = spontaneous mention)

a) do nothing, ignore it 0 1
b) reasoning, explanations, talking about it 0 1
c) inductive reasoning (take the other child's point of view) 0 1
d) verbal punishment (scolding, reprimands, threats) 0 1

e) withdrawal of privileges/power assertion (make him/her do it) 0 1
f) directives/simple commands (tell him/her to do it) 0 1
g) proactive guidance (parent suggests an alternative) 0 1
h) physical punishment 0 1

10. Would you punish ____ and if so, how much would you punish him/her if s/he acted this way? (Parent rating)

1	2	3	4	5
Not at all		Moderately		Very Sternly

11. Children sometimes do things that make their parents worry that they will have some problems; some things parents don't worry about because they know their children will grow out of it. If your child acted this way most of the time, how worried would you be that _____ would grow up to have problems later on?

1	2	3	4	5
Not at all		Somewhat		Very worried

12. What could you as a parent do to PREVENT your child from acting this way in the first place?
_____
_____

1. do nothing (unpreventable).
2. After the fact – non-preventive power assertion, punishment.
3. After the fact – reasoning, proactive guidance.
4. Before the fact – preventive but vague and general.
5. Before the fact – preventive: situation and method and specific.

Story 3

Pretend it's Saturday and you carry your child to the park. He or she sees a bunch of kids from kindergarten playing catch with a ball. Your child runs over to them and asks if he or she can play too. They don't hear your child so they just keep on playing. Your child gets upset and grabs the ball and yells, "If you don't let me play, I'm going to throw this ball down the sewer!".

13. Why do you think _____ acted this way? _____
_____

0	1	2	3	4	5	6
No interp. Made	OK blame	Other	Situation	State	Trait	Child misinterpret

14. If your child behaved this way, how would you feel? (Parent rating)

1	2	3	4	5
Very good		Neutral		Very bad, upset

15. What would you do if ____ acted this way?

_____

_____

(0 = not mentioned,
1 = spontaneous mention)

a) do nothing, ignore it	0 1
b) reasoning, explanations, talking about it	0 1
c) inductive reasoning (take the other child's point of view)	0 1
d) verbal punishment (scolding, reprimands, threats)	0 1
e) withdrawal of privileges/power assertion (make him/her do it)	0 1
f) directives/simple commands (tell him/her to do it)	0 1
g) proactive guidance (parent suggests an alternative)	0 1
h) physical punishment	0 1

16. Would you punish ____ and if so, how much would you punish him/her if s/he acted this way? (Parent rating)

1	2	3	4	5
Not at all		Moderately		Very Sternly

17. Children sometimes do things that make their parents worry that they will have some problems; some things parents don't worry about because they know their children will grow out of it. If your child acted this way most of the time, how worried would you be that _____ would grow up to have problems later on?

1	2	3	4	5
Not at all		Somewhat		Very worried

18. What could you as a parent do to PREVENT your child from acting this way in the first place?

_____

_____

1. do nothing (unpreventable).
2. After the fact – non-preventive power assertion, punishment.
3. After the fact – reasoning, proactive guidance.
4. Before the fact – preventive but vague and general.
5. Before the fact – preventive: situation and method and specific.

Story 4

Your child's birthday is coming up and you have decided to give him or her a party. You let your child invite a bunch of kids from kindergarten. One of the kids in the classroom is your child's cousin, named Lisa, who wants to come to the party a whole lot. Your child does not invite her. When you tell your child

how much Lisa wants to come and how important it is to the family, your child says, "Too bad. It's my party and I'll invite who I want."

19. Why do you think _____ acted this way? _____
_____

0	1	2	3	4	5	6
No interp. Made	OK blame	Other	Situation	State	Trait	Child misinterpret

20. If your child behaved this way, how would you feel? (Parent rating)

1	2	3	4	5
Very good		Neutral		Very bad, upset

21. What would you do if ____ acted this way?

_____
_____

(0 = not mentioned,
1 = spontaneous mention)

a) do nothing, ignore it	0 1
b) reasoning, explanations, talking about it	0 1
c) inductive reasoning (take the other child's point of view)	0 1
d) verbal punishment (scolding, reprimands, threats)	0 1
e) withdrawal of privileges/power assertion (make him/her do it)	0 1
f) directives/simple commands (tell him/her to do it)	0 1
g) proactive guidance (parent suggests an alternative)	0 1
h) physical punishment	0 1

22. Would you punish ____ and if so, how much would you punish him/her if s/he acted this way? (Parent rating)

1	2	3	4	5
Not at all		Moderately		Very Sternly

23. Children sometimes do things that make their parents worry that they will have some problems; some things parents don't worry about because they know their children will grow out of it. If your child acted this way most of the time, how worried would you be that _____ would grow up to have problems later on?

1	2	3	4	5
Not at all		Somewhat		Very worried

24. What could you as a parent do to PREVENT your child from acting this way in the first place?

_____
_____

1. do nothing (unpreventable).
2. After the fact – non-preventive power assertion, punishment.
3. After the fact – reasoning, proactive guidance.
4. Before the fact – preventive but vague and general.
5. Before the fact – preventive: situation and method and specific.

Story 5

Let's pretend that you notice your child playing outside with a bunch of other kids. Your child starts teasing one kid, named Eric, saying to him, "You can't count to 10 and you can't even write your name. Ha-ha! Boy am I glad I'm smarter than you."

25. Why do you think _____ acted this way? _____
_____

0	1	2	3	4	5	6
No interp. Made	OK blame	Other	Situation	State	Trait	Child misinterpret

26. If your child behaved this way, how would you feel? (Parent rating)

1	2	3	4	5
Very good		Neutral		Very bad, upset

27. What would you do if ____ acted this way?

_____
_____

(0 = not mentioned,
1 = spontaneous mention)

a) do nothing, ignore it	0 1
b) reasoning, explanations, talking about it	0 1
c) inductive reasoning (take the other child's point of view)	0 1
d) verbal punishment (scolding, reprimands, threats)	0 1
e) withdrawal of privileges/power assertion (make him/her do it)	0 1
f) directives/simple commands (tell him/her to do it)	0 1
g) proactive guidance (parent suggests an alternative)	0 1
h) physical punishment	0 1

28. Would you punish ____ and if so, how much would you punish him/her if s/he acted this way? (Parent rating)

1	2	3	4	5
Not at all		Moderately		Very Sternly

29. Children sometimes do things that make their parents worry that they will have some problems; some things parents don't worry about because they know their children will grow out of it. If your child acted this way most of the time, how worried would you be that _____ would grow up to have problems later on?

1	2	3	4	5
Not at all		Somewhat		Very worried

30. What could you as a parent do to PREVENT your child from acting this way in the first place?

_____

_____

1. do nothing (unpreventable).
2. After the fact – non-preventive power assertion, punishment.
3. After the fact – reasoning, proactive guidance.
4. Before the fact – preventive but vague and general.
5. Before the fact – preventive: situation and method and specific.

IV. Positive Parenting: Calm Discussion

Conflict Tactics (CT) SCALE

Your Name_____ Mother Father (circle)

Child's Name _____ Date _____

No matter how well people get along, there are times when they disagree on major decisions, get annoyed about something, or just have spats or fights because they're in a bad mood or tired or for some other reason. They also use many different ways trying to settle their differences. Here is a list of things that people might do during a conflict or a disagreement.
We would like you to try to remember how often these things occurred in your family during the past year, and also during your child's life before a year ago. We would like you to consider <u>all</u> disagreements, not just the serious ones. First, we would like you to remember how often you did any of these things to your child, and then we would like you to remember how often your spouse did any of these things to your child. We would then like you to remember how often you did any of these things to your spouse, and then how often your spouse did any of these things to you.

It may be hard to remember everything that has happened in the past 5 years, exactly how many times these things may have happened, and when. Please try to be as accurate as possible, but we understand that you will probably have to give your best guess.

This page is for the things <u>you</u> may have done to <u>your</u> child.
First, go through the items and answer for this past year (last 12 months).
Then, think about how often these things happened before a year ago.
Use the following scale:

0	1	2	3	4	5	6
Never	Less than once a month	Once a month	2-3 times a week	Once a week	2-3 times a week	Almost everyday

	THIS PAST YEAR	**BEFORE A YEAR AGO**
1. <u>Tried</u> to discuss an issue calmly	0 1 2 3 4 5 6	0 1 2 3 4 5 6
2. <u>Did</u> discuss an issue calmly	0 1 2 3 4 5 6	0 1 2 3 4 5 6

V. Social Information Processing : Benign Attributions

Home Interview With Child

1. Pretend that you are standing on the playground playing catch with a kid named Todd/Jessica. You throw the ball to Todd/Jessica and he/she catches it. You turn around, and the next thing you realize is that Todd/Jessica has thrown the ball and hit you in the middle of your back. The ball hits you hard, and it hurts a lot.

a) Why do you think Todd/Jessica hit you in the back?

_____

_____

1	2
ACC	HOS

b) What would you do about Todd/Jessica after he/she hit you?

_____

_____

0	1	2	3	4	5
Don't know	Nothing	Ask why, ask again	Command	Adult punish	Retaliate

2. Pretend that you see some kids playing on the playground. You would really like to play with them, so you go over and ask one of them, a kid named Alan/Leah, if you can play. Alan/Leah says no.

a) Why do you think Alan/Leah said no?

_____

_____

1	2
ACC	HOS

b) What would you do about Alan/Leah after he/she said no?

_____

_____

0	1	2	3	4	5
Don't know	Nothing	Ask why, ask again	Command	Adult punish	Retaliate

3. Pretend that you are walking to school and you're wearing brand new sneakers. You really like your new sneakers and this is the first day you have worn them. Suddenly, you are bumped from behind by a kid named John/Lisa. You stumble into a mud puddle and your new sneakers get muddy.

a) Why do you think John/Lisa bumped you?

_____

_____

1	2
ACC	HOS

b) What would you do about John/Lisa after he/she bumped you?

_____

_____

0	1	2	3	4	5
Don't know	Nothing	Ask why, ask again	Command	Adult punish	Retaliate

4. Pretend that you are a new kid in school and you would really like to make friends. At lunch time you see some kids you would like to sit with and you go over to their table. You ask if you can sit with them and a kid named Carl/Carolyn says no.

a) Why do you think Carl/Carolyn said no?

_____

_____

1	2
ACC	HOS

b) What would you do about Carl/Carolyn after he/she said no?

_____

_____

0	1	2	3	4	5
Don't know	Nothing	Ask why, ask again	Command	Adult punish	Retaliate

5. Pretend that you go to the first meeting of a club you want to join. You would like to make friends with the other kids in the club. You walk up to some of the other kids and say "Hi!" but they don't say anything back.

a) Why do you think the other kids didn't answer you?

_____

_____

1	2
ACC	HOS

b) What would you do about the other kids after they didn't answer you?

_____

_____

0	1	2	3	4	5
Don't know	Nothing	Ask why, ask again	Command	Adult punish	Retaliate

6. Pretend that you are walking down the hallway in school. You're carrying your books in your arm and talking to a friend. Suddenly, a kid named Brett/Wendy bumps you from behind. You stumble and fall and your books go flying across the floor. The other kids in the hall start laughing.

a) Why do you think Brett/Wendy bumped into you?

_____

_____

1	2
ACC	HOS

b) What would you do about Brett/Wendy after he/she bumped into you?

_____

_____

0	1	2	3	4	5
Don't know	Nothing	Ask why, ask again	Command	Adult punish	Retaliate

7. Pretend that it is your first day on the track team. You don't know a lot of the other kids and you would like to make friends with them. During practice, you walk up to a group of kids on the team and say "Hi!" but no one answers you.

a) Why do you think the other kids didn't answer you?

_____

_____

1	2
ACC	HOS

b) What would you do about the other kids after they didn't answer you?

_____

_____

0	1	2	3	4	5
Don't know	Nothing	Ask why, ask again	Command	Adult punish	Retaliate

8. Pretend that you and your class went on a field trip to the zoo. You stop to buy a coke. Suddenly, a kid named David/Allison bumps your arm and spills your coke all over your shirt. The coke is cold, and your shirt is all wet.

a) Why do you think David/Allison bumped into you?

_____

_____

1	2
ACC	HOS

b) What would you do about David/Allison after he/she bumped into you?

_____

_____

0	1	2	3	4	5
Don't know	Nothing	Ask why, ask again	Command	Adult punish	Retaliate

VI. Video Measure of Social Information Processing : Encoding relevance, Competent Response Generation, and Competent Response Evaluation

Child Assessment Video Version 1 Key

Story	Domain	Gender	Intention	Response A	Response B	Response C
1. Lunch	Peer Entry	Female	Hostile	Competent	Aggressive	Inept
2. Dominoes	Provocation	Male	Hostile	Aggressive	Inept	Competent
3. Cards	Peer Entry	Male	Ambiguous	Inept	Competent	Aggressive
4. Candyland Game	Provocation	Female	Accidental	Aggressive	Competent	Inept
5. Mural	Peer Entry	Male	Accidental	Inept	Aggressive	Competent
6. Playdoh	Provocation	Female	Ambiguous	Competent	Inept	Aggressive
7. Puzzles	Peer Entry	Male	Ambiguous	Competent	Aggressive	Inept
8. Tennis Ball	Provocation	Female	Ambiguous	Inept	Competent	Aggressive
9. Math Problems	Provocation	Male	Hostile	Inept	Aggressive	Competent
10. T. V.	Provocation	Male	Accidental	Aggressive	Competent	Inept
11. Sorry Game	Peer Entry	Female	Hostile	Competent	Inept	Aggressive
12. Reading	Peer Entry	Female	Accidental	Aggressive	Inept	Competent
13. Toss Outside	Peer Entry	Male	Accidental	Inept	Competent	Aggressive
14. Lunch Bag Pop	Provocation	Male	Ambiguous	Inept	Aggressive	Competent
15. Pre-baseball	Peer Entry	Male	Hostile	Competent	Aggressive	Inept
16. Writing	Provocation	Female	Accidental	Competent	Inept	Aggressive
17. Balloons	Provocation	Female	Hostile	Aggressive	Inept	Competent
18. Computer	Peer Entry	Female	Ambiguous	Aggressive	Competent	Inept
19. Coloring Books	Peer Entry	Female	Hostile	Aggressive	Competent	Inept
20. Snack	Peer Entry	Male	Accidental	Aggressive	Inept	Competent
21. Blocks	Provocation	Female	Ambiguous	Inept	Competent	Aggressive
22. Juggling	Provocation	Male	Hostile	Competent	Inept	Aggressive
23. Painting	Provocation	Male	Accidental	Inept	Aggressive	Competent
24. Jumprope	Peer Entry	Female	Ambiguous	Competent	Aggressive	Inept

Note: For any story, all participants are of the designated gender.

Child Assessment Video Version 2 Key

Story	Domain	Gender	Intention	Response A	Response B	Response C
1. Lunch	Peer Entry	Female	Ambiguous	Inept	Competent	Aggressive
2. Dominoes	Provocation	Male	Ambiguous	Aggressive	Competent	Inept
3. Cards	Peer Entry	Male	Accidental	Aggressive	Inept	Competent
4. Candyland Game	Provocation	Female	Hostile	Competent	Aggressive	Inept
5. Mural	Peer Entry	Male	Hostile	Competent	Inept	Aggressive
6. Playdoh	Provocation	Female	Accidental	Inept	Aggressive	Competent
7. Puzzles	Peer Entry	Male	Accidental	Competent	Inept	Aggressive
8. Tennis Ball	Provocation	Female	Accidental	Aggressive	Competent	Inept
9. Math Problems	Provocation	Male	Ambiguous	Aggressive	Inept	Competent
10. T. V.	Provocation	Male	Hostile	Inept	Competent	Aggressive
11. Sorry Game	Peer Entry	Female	Ambiguous	Competent	Aggressive	Inept
12. Reading	Peer Entry	Female	Hostile	Inept	Aggressive	Competent
13. Toss Outside	Peer Entry	Male	Hostile	Aggressive	Competent	Inept
14. Lunch Bag Pop	Provocation	Male	Accidental	Inept	Competent	Aggressive
15. Pre-baseball	Peer Entry	Male	Ambiguous	Competent	Inept	Aggressive
16. Writing	Provocation	Female	Hostile	Competent	Aggressive	Inept
17. Balloons	Provocation	Female	Ambiguous	Aggressive	Inept	Competent
18. Computer	Peer Entry	Female	Accidental	Inept	Aggressive	Competent
19. Coloring Books	Peer Entry	Female	Ambiguous	Aggressive	Competent	Inept
20. Snack	Peer Entry	Male	Hostile	Competent	Aggressive	Inept
21. Blocks	Provocation	Female	Accidental	Inept	Competent	Aggressive
22. Juggling	Provocation	Male	Ambiguous	Aggressive	Inept	Competent
23. Painting	Provocation	Male	Hostile	Inept	Aggressive	Competent
24. Jumprope	Peer Entry	Female	Accidental	Competent	Inept	Aggressive

Note: For any story, all participants are of the designated gender.

Child Assessment Video Version 3 Key

Story	Domain	Gender	Intention	Response A	Response B	Response C
1. Lunch	Peer Entry	Female	Accidental	Aggressive	Inept	Competent
2. Dominoes	Provocation	Male	Accidental	Competent	Aggressive	Inept
3. Cards	Peer Entry	Male	Hostile	Aggressive	Competent	Inept
4. Candyland Game	Provocation	Female	Ambiguous	Inept	Competent	Aggressive
5. Mural	Peer Entry	Male	Ambiguous	Competent	Inept	Aggressive
6. Playdoh	Provocation	Female	Hostile	Inept	Aggressive	Competent
7. Puzzles	Peer Entry	Male	Hostile	Competent	Aggressive	Inept
8. Tennis Ball	Provocation	Female	Hostile	Aggressive	Competent	Inept
9. Math Problems	Provocation	Male	Accidental	Inept	Competent	Aggressive
10. T. V.	Provocation	Male	Ambiguous	Aggressive	Inept	Competent
11. Sorry Game	Peer Entry	Female	Accidental	Inept	Aggressive	Competent
12. Reading	Peer Entry	Female	Ambiguous	Competent	Inept	Aggressive
13. Toss Outside	Peer Entry	Male	Ambiguous	Competent	Aggressive	Inept
14. Lunch Bag Pop	Provocation	Male	Hostile	Aggressive	Competent	Inept
15. Pre-baseball	Peer Entry	Male	Accidental	Competent	Inept	Aggressive
16. Writing	Provocation	Female	Ambiguous	Aggressive	Inept	Competent
17. Balloons	Provocation	Female	Accidental	Inept	Aggressive	Competent
18. Computer	Peer Entry	Female	Hostile	Inept	Competent	Aggressive
19. Coloring Books	Peer Entry	Female	Accidental	Aggressive	Competent	Inept
20. Snack	Peer Entry	Male	Ambiguous	Competent	Aggressive	Inept
21. Blocks	Provocation	Female	Hostile	Inept	Aggressive	Competent
22. Juggling	Provocation	Male	Accidental	Inept	Competent	Aggressive
23. Painting	Provocation	Male	Ambiguous	Aggressive	Inept	Competent
24. Jumprope	Peer Entry	Female	Hostile	Competent	Inept	Aggressive

Note: For any story, all participants are of the designated gender.

Child Assessment Video Version 1 Script

Practice Story

(Teacher talking to kids by drinking fountain.)
C1: I have so much homework.
TC: Yeah. Me too!
Teacher: You better hurry and get to class before the bell rings. You don't want to get in trouble.

Story 1

(Kids eating lunch at school.)
C1: Finally, we get to eat lunch. I'm starving.
C2: Good. My mom packed me a peanut butter and jelly sandwich.
C1: Oh no, here comes Kate.
(TC enters.)
TC: Hi! Can I eat lunch with you guys?
C1: No! You can't sit here. Go away!

Story 2

(TC playing with some dominoes on a desk.)
C1: I'm gonna wreck that!
(C1 intentionally knocks down the dominoes.)

Story 3

(Kids playing cards.)
C1: Here's a 10.
C2: Twelve beats 10.
C1: I've been looking for someone to play cards with all day long.
C2: Joey asked me earlier.
C1: Here comes Joey right now.
(TC enters.)
TC: Can I play?
C2: Not right now.

Story 4

(Kids playing game Candyland. C1 accidentally knocks over TC's game pieces.)
C1: Oops!

Story 5

(Kids making mural for art class.)
C1: I'm gonna draw a car.
C2: I'm gonna draw a tree.
(TC enters.)
TC: Hey guys, can I draw too?
C1: Sorry Harold, the teacher said only the two of us could draw on this project.

Story 6

(Kids working with Playdoh in their art class. C1 accidentally puts elbow in TC's Playdoh. No verbal exchange.)

Story 7

(Kids working on puzzles. TC enters.)
TC: Can I help you work on the puzzles?
(No response.)

Story 8

(TC playing with ball against wall.)
C1: What are you doing?
TC: Playing ball.

(C1 takes ball away from TC.)

Story 9

(Kids working on math problems.)
C1: My pencil doesn't work. Give me yours!
(C1 takes TC's pencil.)

Story 10

(TC watching TV. C1 enters.)
C1: Oh boy! My show's on.
(C1 changes channel.)
C1: Oops! I didn't see you there.

Story 11

(Kids playing game Sorry.)
C1: Can you do that?
C2: Yes. I can switch places.
(TC enters.)
TC: Hi! Can I play?
C2: No way! Go away! We're in the middle of the game.

Story 12

(Kids reading books. TC enters.)
TC: Can I read too?
C1: No. The teacher said only two at a time in the reading corner.

Story 13

(Kids playing catch outside. TC enters.)
TC: Guys, can I play?
C1: I'm sorry, there's the teacher. We gotta go in now.

Story 14

(Kids eating lunch at school.)
C1: Sure am glad my mom packed me two sandwiches today. I'm extra hungry.
(C1 blows up bag and pops it.)

Story 15

(Kids getting ready to play baseball.)
C1: You know, we need a new catcher today during recess.
C2: Yeah, I know.
TC: Hi! I'm new here. Can I play with, hang out with you all?
C1: You nerd! No!

Story 16

(Kids writing on the blackboard.)

C1: I made a mistake up here. Better fix it!
(C1 accidentally erases part of TC's writing.)
C1: Oops!

Story 17

(Kids blowing up balloons.)
C1: I'm sick of you hanging around me!
(C1 lets air out of balloon into TC's ear.)

Story 18

(Kids starting a computer project.)

C1: There's Julie. She looks like she needs a group.
C2: Yeah.
(TC enters.)
TC: Hi guys! Can I work with the group?
(C2 shrugs shoulders. No verbal response.)

Story 19

(Kids drawing in coloring books. TC enters.)
TC: Hi guys! Can I color?
C1: No. We don't want you here. Go somewhere else.

Story 20

(Kids eating snack at school.)
C1: Mmmmm! These brownies are good.
C2: Yeah. My mom made them.
(TC enters.)
TC: Hi guys. Can I share you snack with you?
C2: Sorry, we just ate the last one.

Story 21

(TC playing with blocks. C1 walks in and accidentally knocks the blocks down with the door. No verbal exchange.)

Story 22

(TC juggles. C1 watches.)
C1: You can't juggle you show-off!
(C1 intentionally knocks balls out of TC's hands.)

Story 23

(Kids painting in art class.)
C1: Hey, your painting's good. Can I see?
(C1 accidentally knocks TC's arm.)
C1: Oops!

Story 24

(Kids playing jump rope. TC enters.)
TC: Hi!
(Other kids look at TC.)
TC: Can I play?

Child Assessment Video Version 2 Script

Practice Story

(Teacher talking to kids by drinking fountain.)
C1: I have so much homework.
TC: Yeah. Me too!
Teacher: You better hurry and get to class before the bell rings. You don't want to get in trouble.

Story 1

(Kids eating lunch at school.)
C1: Finally, we get to eat lunch. I'm starving.
C2: Good. My mom packed me a peanut butter and jelly sandwich.
C1: Oh no, here comes Kate.
(TC enters.)
TC: Hi! Can I eat lunch with you guys?
(C1 and C2 continue talking to each other.)

Story 2

(TC playing with some dominoes on a desk. C1 walks by and bumps into desk. Dominoes fall down. No verbal exchange.)

Story 3

(Kids playing cards.)
C1: Here's a 10.
C2: Twelve beats 10.
C1: I've been looking for someone to play cards with all day long.
C2: Yeah. Joey asked me earlier.
C1: Here comes Joey now.
(TC enters.)
TC: Can I play?
C2: Sorry, only two can play at this game.

Story 4

(Kids playing game Candyland.)
C1: It's not fair. You always win!
(C1 intentionally knocks over TC's game pieces.)

Story 5

(Kids making mural for art class.)
C1: I'm gonna draw a car.
C2: I'm gonna draw a tree.
C1: Oh no, here comes Harold. He's not working on this project. Nah ah!
(TC enters.)
TC: Hey guys, can I draw too?
C1: No way, Harold! You'll mess it all up.

Story 6

(Kids working with Playdoh in their art class. C1 accidentally puts elbow in TC's Playdoh.)
C1: Oops!

Story 7

(Kids working on puzzles. TC enters.)
TC: Can I help you work on the puzzles?
C1: There's only two puzzles. You can have one when we're done.

Story 8

(TC playing with ball against wall. C1 enters. C1 accidentally knocks the ball and takes it.)
C1: Oops!

Story 9

(Kids working on math problems.)
C1: Nuts! My pencil broke.
(C1 takes TC's pencil.)

Story 10

(TC watching TV. C1 enters.)
C1: I don't like that you're watching.
(C1 changes channel.)

Story 11

(Kids playing game Sorry. TC enters.)
TC: Can I play?
(C1 turns to C2.)
C1: Sorry!

Story 12

(Kids reading books. TC enters.)
TC: Can I read some books too?
C1: No you can't.

Story 13

(Kids playing catch outside.)
C1: Oh no! Here comes Alan. He's not playing with us.
(TC enters.)
TC: Hey guys! Can I play?
C1 & C2: No way!

Story 14

(Kids eating lunch at school.)
C1: Sure am glad my mom packed me two sandwiches today. I'm extra hungry.
(C1 blows up bag and pops it. Turns to TC.)
C1: Oops! Did that hurt your ear?

Story 15

(Kids getting ready to play baseball.)
C1: You know, we could really use an extra catcher on our baseball team in recess.
C2: Yeah, I know.
(TC enters.)
TC: Hi! I'm new here. Can I hang out with you guys?
(No response.)

Story 16

(Kids writing on the blackboard.)
C1: You're writing's better than mine.
(C1 intentially erases TC's writing.)

Story 17

(Kids blowing up balloons. C1 lets air out of balloon into TC's face. No verbal exchange.)

Story 18

(Kids starting a computer project.)
C1: There's Julie. She looks like she needs a group.
C2: Yeah.
(TC enters.)
TC: Hi guys! Can I work with the group?
C1: Sorry, there has to be a boy in our group.

Story 19

(Kids drawing in coloring books. TC enters.)
TC: Hi! Can I color with you?
C1: No, not right now.

Story 20

(Kids eating snack at school.)
C1: These brownies are great!
C2: Yeah. My mom made them.
(TC enters.)
TC: Mmmmm! Those brownies look good. Can I share some with you?
C2: No way!

Story 21

(TC playing with blocks. C1 walks in and accidentally knocks the blocks down with the door.)
C1: Oops!

Story 22

(TC juggles. C1 enters and bumps balls out of TC's hands. No verbal exchange.)

Story 23

(Kids painting in art class.)
C1: Your painting is better than mine. I'm gonna screw yours up.

Story 24

(Kids playing jump rope. TC enters.)
TC: Hi! Can I play?
C1: No. This is Lisa's rope and I promised I wouldn't let anyone else use it.

Child Assessment Video Version 3 Script

Practice Story

(Teacher talking to kids by drinking fountain.)
C1: I have so much homework.
TC: Yeah. Me too!
Teacher: You better hurry and get to class before the bell rings. You don't want to get in trouble.

Story 1

(Kids eating lunch at school.)
C1: Finally, we get to eat lunch. I'm starving.
C2: Oh goody! My mom packed me a peanut butter and jelly sandwich.
(TC enters.)
TC: Hi! Can I eat lunch with you guys?
C1: Oh, sorry. We saved this seat for Katie.

Story 2

(TC playing with some dominoes on a desk. C1 walks by and bumps into desk. Dominoes fall down.)
C1: Oops!

Story 3

(Kids playing cards.)
C1: Here's a 10.
C2: Here's a 12. Beats your card.
C1: I've been looking for someone to play cards with all day long.
C2: Yeah. Joey asked me too, but I said, "Ugh-uh."
C1: Sh sh! Here comes Joey now.
(TC enters.)
TC: I've been looking for someone to play cards with all day.
C2: Leave Joey. We don't want you here.

Story 4

(Kids playing game Candyland.)
(C1 knocks over TC's game pieces. No verbal exchange.)

Story 5

(Kids making mural for art class.)
C1: I'm gonna draw a car.
C2: I'm gonna draw a tree.
(TC enters.)
TC: Hey guys, can I draw too?
(No response.)

Story 6

(Kids working with Playdoh in their art class.)
C1: I don't like what you made.
(C1 squashes TC's Playdoh.)

Story 7

(Kids working on puzzles. TC enters.)
TC: Can I do the puzzles with you?
C1: No. Can't you see we're working on them ourselves?

Story 8

(TC playing with ball against wall. C1 enters.)
C1: What are you doing?
TC: Playing ball.
C1: I'm gonna wreck your game.
(C1 intentionally hits ball away from TC.)

Story 9

(Kids working on math problems.)
C1: Whoops! My pencil broke. I'll use this one.
(C1 takes TC's pencil.)

Story 10

(TC watching TV. C1 enters and changes channel. No verbal exchange.)

Story 11

(Kids playing game Sorry.)
C1: 4, 5, 6, 7, 8.
(TC enters)
TC: Can I play?
C1: No, we just started. You'll have to wait 'til next game.

Story 12

(Kids reading books. TC enters.)
TC: Can I read some books too?
C1: Ugh-uh.

Story 13

(Kids playing catch outside. TC enters.)
TC: Can I play?
(No response.)

Story 14

(Kids eating lunch at school.)
C1: Sure am glad my mom packed me two sandwiches today. I'm extra hungry.
(C1 blows up bag. Turns to TC.)
C1: Do you always chew with your mouth open? You've been bothering me all day.
(C1 pops bag.)

Story 15

(Kids getting ready to play baseball.)
C1: You know, we could really use an extra catcher for our baseball game today.
C2: Yeah, I know.
(TC enters.)
TC: Hi! I'm new here. Can I hang out with you guys?
C1: Sorry. We're looking for people on our team.

Story 16

(Kids writing on the blackboard.)
C1: Oops! Made a mistake up here.
(C1 accidentally erases part of TC's writing.)

Story 17

(Kids blowing up balloons. C1 lets air out of balloon into TC's face.)
C1: Oops!

Story 18

(Kids starting a computer project.)
C1: Uh oh. There's four-eyed Julie wearing her thick glasses. She can't see anything
C2: Yeah. She can't work with us.
(TC enters.)
TC: Hi guys! Can I work with the group?
C1: Julie, with those eyes of yours, it would take us forever.

Story 19

(Kids drawing in coloring books. TC enters.)
TC: Hi! Can I color with you guys?
C1: You can't. We only have two coloring books.

Story 20

(Kids eating snack at school.)
C1: Mmmmm! These brownies are good.
C2: Yeah. My mom made them.
(TC enters.)
TC: Hi, guys. Can I share your snack with you?
(No response.)

Story 21

(TC playing with blocks. C1 enters.)
C1: Those are mine and you can't play with them!
(C1 kicks over blocks.)

Story 22

(TC juggles. C1 enters.)
C1: Hey, can I watch you juggle?
(C1 sits down and accidentally knocks balls out of TC's hand.)

Story 23

(Kids painting in art class. C1 knocks cup of water on TC's painting. No verbal exchange.)

Story 24

(Kids playing jump rope.)
C1: Hey Maggie, let's lock the game so no one else can play.
(TC enters.)
TC: Hi! Can I play?
C2: No way! You can't jump. Besides, we just locked the game.

Video Questionnaire

(Original contains 24 stories. This version has only 5 samples)

Date _____ Initials __ _____ ID _____

Story 1

1. Tell me what happened in this story? _____
_____

2. Was the other kid (Were the other kids): 1 – Being mean
2 – Not being mean
(3 – It's hard to tell
4 – Don't know)

3. What would you do if this happened to you? _____
_____

4. Do you think that's a good thing or a bad thing to say or do?

Response A	BAD	bad	good	GOOD
	1	2	3	4
Response B	BAD	bad	good	GOOD
	1	2	3	4
Response C	BAD	bad	good	GOOD
	1	2	3	4

Story 2

1. Tell me what happened in this story? _____
_____

2. Was the other kid (Were the other kids): 1 – Being mean
2 – Not being mean
(3 – It's hard to tell
4 – Don't know)

3. What would you do if this happened to you? _____
_____

4. Do you think that's a good thing or a bad thing to say or do?

Response A	BAD	bad	good	GOOD
	1	2	3	4
Response B	BAD	bad	good	GOOD
	1	2	3	4
Response C	BAD	bad	good	GOOD
	1	2	3	4

Story 3

1. Tell me what happened in this story? _____
_____

2. Was the other kid (Were the other kids): 1 – Being mean
2 – Not being mean
(3 – It's hard to tell
4 – Don't know)

3. What would you do if this happened to you? _____
_____

4. Do you think that's a good thing or a bad thing to say or do?

Response A	BAD	bad	good	GOOD
	1	2	3	4
Response B	BAD	bad	good	GOOD
	1	2	3	4
Response C	BAD	bad	good	GOOD
	1	2	3	4

Story 4

1. Tell me what happened in this story? _____
_____

2. Was the other kid (Were the other kids): 1 – Being mean
2 – Not being mean
(3 – It's hard to tell
4 – Don't know)

3. What would you do if this happened to you? _____
_____

4. Do you think that's a good thing or a bad thing to say or do?

Response A	BAD	bad	good	GOOD
	1	2	3	4
Response B	BAD	bad	good	GOOD
	1	2	3	4
Response C	BAD	bad	good	GOOD
	1	2	3	4

Story 5

1. Tell me what happened in this story? _____
_____

2. Was the other kid (Were the other kids): 1 – Being mean
2 – Not being mean
(3 – It's hard to tell

4 – Don't know)

3. What would you do if this happened to you? _____
_____

4. Do you think that's a good thing or a bad thing to say or do?

Response A	BAD	bad	good	GOOD
	1	2	3	4
Response B	BAD	bad	good	GOOD
	1	2	3	4
Response C	BAD	bad	good	GOOD
	1	2	3	4

VII.Aggressive Behavior

Child Behavior Checklist- Teacher Report Form

Below is a list of items that describe pupils. For each item that describes the pupil now or within the past 2 months, please circle the 2 if the item is very true or often true of the pupil. Circle the 1 if the item is somewhat or sometimes true of the pupil. If the item is not true of the pupil, circle the 0. Please answer all items as well as you can, even if some do not seem to apply to this pupil.

0 1 2 1. Acts too young for his/her age
0 1 2 2. Hums or makes other odd noises in class
0 1 2 3. Argues a lot
0 1 2 4. Fails to finish things he/she starts
0 1 2 5. Behaves like opposite sex
0 1 2 6. Defiant, talk back to staff
0 1 2 7. Bragging, boasting
0 1 2 8. Can't concentrate, can't pay attention for long
0 1 2 9. Can't get his/her mind off certain thoughts; obsessions (describe): _____
0 1 2 10. Can't sit still, restless, or hyperactive
0 1 2 11. Clings to adults or too dependent
0 1 2 12. Complains of loneliness
0 1 2 13. Confused or seems to be in a fog
0 1 2 14. Cries a lot
0 1 2 15. Fidgets
0 1 2 16. Cruelty, bullying, or meanness to others
0 1 2 17. Daydreams or gets lost in his/her thoughts
0 1 2 18. Deliberately harms self or attempts suicide
0 1 2 19. Demands a lot of attention
0 1 2 20. Destroys his/her own things
0 1 2 21. Destroys property belonging to others
0 1 2 22. Difficulty following directions
0 1 2 23. Disobedient at school
0 1 2 24. Disturbs other pupils
0 1 2 25. Doesn't get along with other pupils
0 1 2 26. Doesn't seem to feel guilty after misbehaving
0 1 2 27. Easily jealous
0 1 2 28. Eats or drinks things that are not food
0 1 2 29. Fears certain animals, situations, or places other than school
0 1 2 30. Fears going to school
0 1 2 31. Fears might think or do something bad
0 1 2 32. Feels he/she has to be perfect
0 1 2 33. Feels that no one loves him/her
0 1 2 34. Feels others are out to get him/her
0 1 2 35. Feels worthless or inferior
0 1 2 36. Gets hurt a lot, accident-prone
0 1 2 37. Gets in many fights
0 1 2 38. Gets teased a lot
0 1 2 39. Hangs around with others who get in trouble
0 1 2 40. Hears things that aren't there (describe): _____
0 1 2 41. Impulsive or acts without thinking
0 1 2 42. Likes to be alone
0 1 2 43. Lying or cheating
0 1 2 44. Bites fingernails
0 1 2 45. Nervous, high-strung, or tense
0 1 2 46. Nervous movements or twitching (describe)_____
0 1 2 47. Overconforms to rules
0 1 2 48. Not liked by other pupils
0 1 2 49. Has difficulty learning
0 1 2 50. Too fearful or anxious
0 1 2 51. Feels dizzy
0 1 2 52. Feels too guilty
0 1 2 53. Talks out of turn
0 1 2 54. Overtired
0 1 2 55. Overweight
56. Physical problems without known medical cause:
0 1 2 a. Aches or pains
0 1 2 b. Headaches
0 1 2 c. Nausea, feels sick
0 1 2 d. Problems with eyes (describe):_____
0 1 2 e. Rashes or other skin problems (describe) _____
0 1 2 f. Stomachaches or cramps
0 1 2 g. Vomiting, throwing up
0 1 2 h. Other (describe): _____

0 1 2 57. Physically attacks people

0 1 2 58. Picks nose, skin, or other parts of body (describe) _____
0 1 2 59. Sleeps in class
0 1 2 60. Apathetic or unmotivated
0 1 2 61. Poor school work
0 1 2 62. Poorly coordinated or clumsy
0 1 2 63. Prefers being with older children
0 1 2 64. Prefers being with younger children

0 1 2 65. Refuses to talk
0 1 2 66. Repeats certain acts over and over compulsions(describe) _____
0 1 2 67. Disrupts class discipline
0 1 2 68. Screams a lot
0 1 2 69. Secretive, keeps things to self
0 1 2 70. Sees things that aren't there (describe): _____
0 1 2 71. Self-conscious or easily embarrassed
0 1 2 72. Messy work
0 1 2 73. Behaves irresponsibly (describe): _____
0 1 2 74. Showing off or clowning
0 1 2 75. Shy or timid
0 1 2 76. Explosive and unpredictable behavior
0 1 2 77. Demands must be met immediately easily frustrated
0 1 2 78. Inattentive, easily distracted
0 1 2 79. Speech problem (describe): _____
0 1 2 80. Stares blankly
0 1 2 81. Feels hurt when criticized
0 1 2 82. Steals
0 1 2 83. Stores up things he/she doesn't need (describe) _____

0 1 2 84. Strange behavior (describe): _____
0 1 2 85. Strange ideas (describe): _____
0 1 2 86. Stubborn, sullen, or irritable
0 1 2 87. Sudden changes in mood or feelings
0 1 2 88. Sulks a lot
0 1 2 89. Suspicious
0 1 2 90. Swearing or obscene language
0 1 2 91. Talks about killing self
0 1 2 92. Underachieving, not working up to potential
0 1 2 93. Talks too much
0 1 2 94. Teases a lot
0 1 2 95. Temper tantrums or hot temper
0 1 2 96. Seems preoccupied with sex
0 1 2 97. Threatens people
0 1 2 98. Tardy to school or class
0 1 2 99. Too concerned with neatness or cleanliness
0 1 2 100. Fails to carry out assigned tasks
0 1 2 101. Truancy or unexplained absence
0 1 2 102. Underactive, slow moving, or lacks energy
0 1 2 103. Unhappy, sad, or depressed
0 1 2 104. Unusually loud
0 1 2 105. Uses alcohol or drugs (describe): _____
0 1 2 106. Overly anxious to please
0 1 2 107. Dislikes school
0 1 2 108. Is afraid of making mistakes
0 1 2 109. Whining
0 1 2 110. Unclean personal appearance
0 1 2 111. Withdrawn, doesn't get involved with others
0 1 2 112. Worrying
113. Please write in any problems the pupil has that were not listed above:
0 1 2 _____
0 1 2 _____
0 1 2 _____

VIII. Social Skills

Teacher Checklist of Peer Relations

How good is this child at each of the following skills? Use the scale below in answering.

1	2	3	4	5
Very poor	Somewhat poor	Average	Good	Very good

	Rating
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/her behavior on others	1 2 3 4 5