SOCIAL INFORMATION PROCESSING AND EMOTION REGULATION: RELATIONSHIPS WITH ATTACHMENT AND SOCIAL COMPETENCE IN AT-RISK PRESCHOOLERS

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SOCIAL INFORMATION PROCESSING AND EMOTION REGULATION: RELATIONSHIPS WITH ATTACHMENT AND SOCIAL COMPETENCE IN AT-RISK PRESCHOOLERS
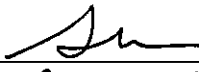
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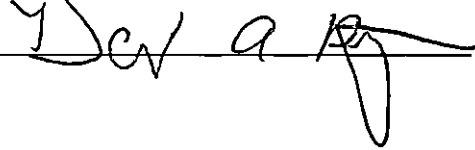Director of Thesis: _____ *Shari L. Kidwell, Ph.D.* _____

Attachment has been a key focus of developmental research since first being posited by Bowlby (1969). Previous research has linked attachment with aggression, social competence, and popularity in young children and in subsequent life stages. However, little work has been done to understand the interrelations between attachment, emotion regulation, social information processing, and social competence, particularly among preschoolers. Such was the aim of this study. Researchers hypothesized that: (1) children with a high-risk attachment would show lower abilities in emotion regulation, compared with those with normative classifications; (2) children classified as having a normative attachment would show greater social competence and social information processing skills, compared with their high-risk peers; (3) children with better emotion regulation skills would, two years later, show better scores of social competence, and fewer indices of hostile attribution bias, and better social problem solving skills; and (4) that children with more adaptive social information problem solving would also have higher levels of concurrent social

competence. Participants were sixty-nine African-American children, 4 years of age at Time 1, living in low-income neighborhoods of a large midwestern city, and their parents. Fifty-five percent of the children in the sample were girls. At Time 1, attachment style was assessed using the Strange Situation, and emotion regulation was evaluated using the Emotions Interview. Two years later, parents and teachers completed the Preschool Questionnaire, used to measure prosocial and antisocial behaviors, and the Head Start Questionnaire, used to judge interactive, disruptive, and disconnected behaviors. Attribution bias was measured using the Support Attribution Task, and social problem solving was evaluated through the Preschool Interpersonal Problem Solving Task, also at Time 2. Attachment type was analyzed by grouping the normative classification (A/B/C) from the high-risk (A+/C+), per Crittenden's Preschool Assessment of Attachment. Results indicate that those with more normative attachment patterns were more skilled at emotion regulation, and displayed more prosocial and less isolative peer behavior. Attachment was not associated with antisocial and aggressive/disruptive behavior. Emotion regulation was positively related to scores on the Support Attribution Task, the Preschool Interpersonal Problem Solving Task, and to scores of prosocial behavior on the Preschool Questionnaire. That is, children who were engaged during the task and showed the affects being discussed later exhibited less hostile attribution bias, were better able to identify solutions to interpersonal problems, and were seen as more interactive with their peers. Indices of social information problem solving were positively related to teacher-rated scores of prosocial behavior, suggesting that children who were better

able to resolve uncomfortable social situations were better equipped to deal with social interactions. Therefore, two of the four hypotheses were supported, and the others were partially supported. Further research could be done to assess the basis of certain tasks, such as whether certain children scored higher on certain measures (i.e., the Emotions Interview, the Preschool Interpersonal Problem Solving task) because they felt more comfortable with a novel adult than did other children. Implications of these findings are discussed, and limitations are considered.

Accepted by: _____, Chair

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Social Information Processing and Emotion Regulation: Relationships with

Attachment and Social Competence in At-Risk Preschoolers

Although there is an abundance of research regarding the emotional

development of middle-income Caucasian children, a divide has emerged pertaining

to the emotional development of children in low-income, African American families.

Construct validation in such samples remains to be desired as well. That is, measures

typically utilized in middle-income Caucasian samples have yet to be well-established

as valid for at-risk African-American samples. Uncontrollable and unpredictable

stressors exist in this population, such as poverty and racism, which are believed to

have a substantial impact on the development and quality of parent-child relationships

and child adjustment (Dodge, Pettit, & Bates, 1994; Raver, 2004). With a few

exceptions (e.g., Bost, Vaughn, Washington, Cielinski, & Bradbard, 1998;

Cunningham, Kliewer, & Garner, 2009; Finger, Hans, Bernstein, & Cox, 2009) little

is known about attachment, emotion regulation, and social information processes in

these families.

Attachment to parental figures is vital to healthy social development. As such

there arose a need to parsimoniously explain the phenomena and its effects.

Attachment Theory, as first posited by Bowlby (1969), emphasizes that the bond

created between the child and the primary caregiver holds such a great impact in

one's life that it influences all subsequent relationships. Attachment between the child

and caregiver is necessary to ensure survival and reproduction (Bowlby, 1969).

Parental sensitivity is greatly involved with attachment as the child and adult learn to

interpret implicit communication attempts, and develop their communication abilities

through each other. If parents are sensitive to their child's emotional needs a healthy

bond (i.e. secure attachment) is made (Ainsworth, Blehar, Waters, & Wall, 1978; van

Izjendoorn, Schuengel, & Bakermans-Kranenburg, 1999).

Past research identifies a relationship between the quality of attachment and

aggressive tendencies, social competence, and popularity at later stages in

development (Belsky, & Cassidy, 1994; Lamb, & Nash, 1989; Lyons-Ruth, 1996).

That is, better attachments have been related to fewer aggressive behaviors, greater

scores of social competence, and higher scores of popularity by peers. However, the

mechanisms through which attachment influences children's social development are

not well understood (Contreras, Kerns, Weimer, Gentzler, & Tomich, 2000) and

deserve further investigation, especially in an at-risk, African-American sample. This

is the focus of the current study.

Attachment

Attachment is described as the affective bond formed between a child and his

or her primary caregiver (Bowlby, 1969). Attachment is developed through the daily

interactions that the child has with the parent. The child begins to develop

expectations of parental behavior, such as whether he will be responded to with

promptness and sensitivity. This cognitive belief is referred to as the internal working

model and is thought to generalize to other relationships and thereby affect social

competence (Bowlby, 1969).

Ainsworth, under Bowlby's guidance, developed a method for categorizing the quality of a child's attachment (1978). This procedure, called the Strange Situation, consists of a mother-child-stranger scenario involving seven separations and reunions (Ainsworth et al.). The focus of this technique is to examine the child's use of the parent as a secure base when the mother leaves the room, and particularly at the time when reunited. Ainsworth categorized attachment into 3 main groups: (1) secure attachment (Type B) in which the child uses the parent as a "secure base" from which to explore and to which he returns if stressed; (2) insecure-avoidant (Type A) in which the child is neutral towards his mother; and (3) insecure-ambivalent (Type C) in which the child is quite dependent.

With Ainsworth's approval, Crittenden has since expanded Ainsworth's categories through her Dynamic Maturational Model (DMM: 2008), particularly for the preschool years and beyond. Defended children (Type A) typically explore well, but minimize emotional displays with the caregiver (Crittenden, 2004). The child's actions are focused on avoiding confrontation and feelings of rejection. The balanced (i.e., secure, Type B) child is at ease in seeking comfort and support as needed. They seem to enjoy spending time with the parent, but are also capable of exploring independently. Coercive children (Type C), on the other hand, exaggerate negative affect so as to display one of two expressions: anger and vulnerability. These children demand attention from their caregivers, magnifying complaints within the relationship (Crittenden, 2004). Although it is beyond the scope of this document to thoroughly describe Crittenden's DMM theory, it has two major advantages. First, it

includes a continuum of risk, with higher-risk categories in both Types A and C.

Second, it views Type A and C as psychological opposites, with A relying more on

cognitive information and C on emotional information. The higher-risk categories,

depicted in the model as further away from Type B, have increased distortions in their

processing of both types of information [See *Figure 1*]. As is discussed subsequently,

these highly differentiated attachment strategies are expected to have implications for

understanding children's socioemotional adjustment (Crittenden, 2008).

The attachment relationship is the primary source for learning about emotions

and how to cope with them, as well as about other people and their motives. Social

comprehension is not innate, but rather is created through the process of social

learning (Berlin & Cassidy, 2003; Thompson, 2008). Children use the interactions

they have with their parents and internalize these behaviors and learned beliefs,

consolidating this information in the internal working model (Anan, & Barnett, 1999;

Bowlby, 1969). Past research on early attachment patterns and peer relationships has

demonstrated an empirical relationship between the two concepts (Cassidy, Berlin, &

Appleyard, 2008). A meta-analysis conducted on such research indicates that securely

attached preschool and elementary-age children have more productive and

encouraging interaction with others, higher regard from their peers, and are reported

to have less problematic behaviors in their classrooms (Schneider, Atkinson, &

Tardif, 2001).

Some research shows behaviors observed in Type A attachment are correlated

with peer-ratings of externalizing problems (i.e., disruptive), and that behaviors seen

in Type C attachment are related to peer-ratings of internalizing problems (i.e., sad, anxious) (Booth-Laforce, Oh, Kim, Rubin, Rose-Krasnor, & Burgess, 2006). In contrast, studies using Crittenden's DMM (2008) approach, children categorized as Type C (i.e., coercive) were lower on prosocial behavior and higher on problem peer behavior, according to teachers, relative to securely attached children (DeVito & Hopkins, 2001; Fagot, & Pears, 1996; Kidwell, Young, Hinkle, Ratliff, & Martin, 2010; Vondra, Shaw, Swearingen, & Cohen, 2001). That is, Type A children seemed more like Type B than Type C, but were not significantly different from either. Regardless of whether DMM or non-DMM classifications are used, the most consistent and robust relationship between attachment and child adjustment are for high-risk classifications (Deklyen & Greenberg, 2008; Kidwell, et al., 2010; Moss, Bureau, St-Laurent, & Tarabulsy, 2011). Importantly, attachment has even been found to impact social interactions into adulthood (Cassidy, Berlin, & Appleyard, 2008).

It is crucial to note that researchers know much less about attachment among African American children. Bost and her colleagues (1998) found continuous ratings of attachment security to be predictive of low-income African American preschoolers' social competence. In a study of infants, higher risk attachments were associated with more frightening, stressful, and insensitive parenting behavior, and such attachment patterns were found amongst 40% of the sample (Finger et al., 2009). Thus, it is not fully clear that the connections between attachment, and child and family functioning will necessarily be generalizable from other research.

Nevertheless, the avenues through which attachment has such pervasive impacts include emotion regulation and social information processing. Researchers have seldom tested the theoretical links between attachment, these constructs, and children's development.

Emotion Regulation

Emotion regulation is a concept that is comprised of how one internally experiences each emotion, the thoughts associated with that emotion, physiological connections related to an emotion, and external behaviors (Thompson, 1994; Siegler, Deloache, & Eisenberg, 2006). In essence, a child receives stimuli, which creates an emotional reaction to which the child must respond. The child then must decide how to externally respond according to the rules established by the environment for acceptable emotional displays. If one is unable to satisfactorily form emotions according to society's standards then he will, from a young age, meet social interactions with frustration, anger, and confusion. The resulting affect is then cyclical, creating a biased sense of social competence that can perpetuate itself into the remainder of the individual's social life (Denham et al., 2002).

Theoretically, more socially competent children should be able to identify affect in others and themselves more accurately than their peers (Dykas & Cassidy, 2011; Hubbard, & Coie, 1994). Specifically, research shows that children with higher scores of emotion regulation greet interpersonal interactions with greater sensitivity and prosocial behaviors than their classmates, and are viewed more positively by their peers (Contreras et al, 2000; Lopes, Salovey, Côte, & Beers, 2005). Studies have

replicated such findings with low-income, urban African American children

(Cunningham, Kliewer, & Garner, 2009; Mendez, Fantuzzo, & Cicchetti, 2001).

Several studies have also suggested a link between children's attachment and

their emotion regulation skills. For example, Kochanska (2001) found that Type A

children did not differ on positive affect from Type B, but did have more fear in a

situation designed to elicit it. Type C's were dominated by negative affect, showing

distress even when joy was the affect researchers were trying to induce. These

findings are similar to those of Kidwell et al. (2010), in which Type C's had great

difficulty discussing happy memories. Additionally, during adolescence, securely

attached children exhibit stronger indices of effective emotional coping, greater social

adjustment, and greater levels of self-efficacy (Cooper, Shaver, & Collins, 1998).

It is believed that Type A children do not develop a full range of emotion

regulation skills because their parents are so disapproving of negative affect. If open

communication cannot take place between the parent and child, what the child

primarily learns is to strictly control his emotions (Berlin & Cassidy, 2003; Kochaska,

2001). In the context of not being able to influence one's own emotions,

unpredictable outbursts of negative affect can occur (Crittenden, 2004).

In contrast, Type C children show considerable negative affect but use it

coercively to gain more predictable parental affection and attention. As struggle

dominates the parent-child interactions, children likely do not have productive

discussions with their parents about how they feel (Berlin & Cassidy, 2003;

Kochaska, Coy, & Murray, 2001). Type C children are thought to experience both

vulnerability and anger, but not to have much help regulating and understanding these internal states (Crittenden, 2004).

Social Information Processing

Social information processing, in this study, refers to a combination of processes known as attribution bias and social problem solving. Hostile attribution bias is understood as interpreting incoming social information in a particular way (i.e., as hostile). Social problem solving refers to one's ability to find effective solutions for problems one encounters in a social context (D'Zurilla, Nezu, & Maydeu-Olivares, 1982).

Certainly the solutions generated are dependent upon the initial interpretation of others' motives. In fact, the two aspects of SIP described here are part of a larger process depicted in *Figure 2* (i.e., note steps 2 and 3) (Crick, & Dodge, 1994). Childhood attachment continues to play a vital role in one's personal interactions into the future. Collins (1996) found that adults with insecure attachment patterns report higher levels of attribution bias, as well as increased feelings of distress during discussion of personal attribution.

Less is known about the empirical connection between SIP and attachment, but some data suggest that secure children have the expected advantage. Specifically, securely attached preschool children have been shown to have lower levels of the hostile attribution bias (Kidwell, Hinkle, Day-Brown, Burgin, Martin, Young, 2007; Raikes & Thompson, 2008). As described in the emotion regulation section, the parent-child interaction of insecurely attached children is not conducive to learning

about coping, including a variety of ways to solve social problems. Moreover, hostile attribution biases may circumvent the problem-solving process. These biases towards attributing others' motives are thought to originate in the internal working model, or schemas for interpersonal relationships (Dodge, 2006; Dykas & Cassidy, 2011). Collins (1996) speculates that those with a Type A attachment will be particularly likely to see others as hostile, as they have met social interactions with rejection (1996).

Mediating Roles for Emotion Regulation & Social Information Problem Solving

There are relatively few studies tying these constructs together. The mechanisms through which attachment influences later social functioning, therefore, are not very well understood. There is, however, one study of middle childhood examining each construct as a potential mechanism.

In middle childhood securely attached children are better able to devise constructive coping strategies and emotion regulation skills, and are awarded higher scores of peer competence (Contreras, Kerns, Wiemer, Gentzler, & Tomich, 2000). Also, social information processing has been studied as a mechanism through which attachment influences older children (Dwyer, Fredstrom, Rubin, Booth-LaForce, Rose-Krasnor, & Burgess, 2010), though studies in early childhood remain to be found.

The Current Study

The current study aims to investigate both emotion regulation and social information problem solving as potential mediating mechanisms for attachment and

social competence [See *Figure 3*]. The multi-method longitudinal design also permits

the examination of inter-relations among each construct. That we study these

constructs among an at-risk, low-income minority may increase understanding of the

special circumstances facing these children.

Additionally, the vast majority of attachment research collapses all insecure

types into one group for analyses. Though this does increase power in findings, it has

been criticized for obscuring important differences in children's socioemotional

functioning that attachment theory predicts (Thompson & Raikes, 2003). Given that

children process incoming information and express affect differently per attachment

style, past research (i.e., especially that using Crittenden's categories) would predict

that over-controlled Type A children would socially perform most closely to Type B

children, rather than other insecurely attached under-controlled children (Type C).

From a DMM (2008) approach children with higher subtypes of A and C (i.e., A+

and C+) are at higher risk for socioemotional difficulties because greater exposure to

danger and/or parental psychological disturbance creates increased distortions in the

processing of cognitive and affective information. When attachment coding is

complete for the full sample results will be explored using the full spectrum of

Crittenden categories. With coding complete for only about half of the sample, the

analytic approach that was chosen here was to examine high-risk (i.e., A+ and C+) vs.

normative (i.e., A1-2, B, and C1-2) attachment groupings. As will be explained in

the following section, high-risk classifications are quite prominent in this sample and

Type B is relatively rare. Also, this approach is more theoretically appropriate, from

a DMM perspective, than collapsing categories into secure vs. insecure

The purpose of the current study is to investigate attachment, emotion

regulation, attribution biases, and social competence a moderately at-risk sample of

children.

Hypotheses

1.   Children with a high-risk attachment would show lower abilities in

emotion regulation, compared with those with normative

classifications.

2.   Children classified as having a normative attachment would show

greater social competence and social information processing skills,

compared with their high-risk peers.

3.   Children with better emotion regulation skills would, two years

later, show better scores of social competence and social problem

solving, and fewer indices of hostile attribution bias.

4.   Children with more adaptive social information processing would

also have higher levels of concurrent social competence.

5.   Emotion regulation and social information processing skills will

mediate the relationship between attachment and children's social

competences.

Methods

Participants:

The data collected was part of a larger study being done in a large midwestern

city. The sixty-nine families were recruited from programs designed to serve low-

income families. Children were of an average age of 4.5 years old at Time 1, and 6.5

years old at Time 2. Fifty-five percent were girls. All of the children were African

American and lived with a female primary caregiver. See Table 1 for a listing of all

measures.

Procedures:

Attachment:

Strange Situation. At Time 1 the researchers conducted the Strange Situation

(Ainsworth, Blehar, & Waters, 1978), where the child was exposed to three-minute

periods of parental presence, stranger presence, both parental and stranger presence,

and alone. This procedure was conducted in order to assess the attachment type of the

parent-child dyad (i.e., A, B, C, A+, and C+). A doctoral-level university professor,

trained in the Preschool Assessment of Attachment (PAA: Crittenden, 1992, 2004)

and reliable with Crittenden, completed the coding. A subset of 13 cases were also

coded by a trained graduate student, with 80% agreement. See Table 2 for the

distribution of attachment classifications for the 32 cases that are currently coded.

Emotion Regulation:

Emotions Interviews. At Time 1, the children were assessed using the

Emotions Interview [See Appendix A]. Two trained graduate students coded the

emotions interviews, with an inter-rater reliability above 90% on 15% of the sample.

The children were individually interviewed, and asked to discuss a time when they

felt sad, mad, scared, happy, excited, and calm. The children were shown cards that

had a representation of the appropriate face per emotion, and were then asked to make

a face that expressed that emotion. Their interviews were rated on 5 different

variables, using a 4-point Likert scale (1 = very problematic behavior, 4 = not

problematic behavior) [See Appendix A]:

1. The enthusiasm and relationship the child seemed to exhibit when

   interacting with the researcher, as well as the task at hand.

2. Appropriateness of the affect described by the child in relation to the

   emotion being discussed by the interviewer.

3. Symptoms of internalization, such as nail biting, covering mouth with

   hands, etc.

4. Externalization symptoms, such as bouncing in seat, banging card on the

   table, etc.

Social Information Processing:

    Support Attribution Task. At Time 2 researchers assessed attributions using

the Support Attribution Task, which is comprised of 16 picture vignettes and is,

matched for gender (Anan, & Barnett, 1999). The task is based on procedures by

Dodge and Frame (1982) and Suess et al. (1992). Each narrative accompanies three

cartoon-like drawings of a main character (i.e. the child) and another individual (e.g.

friend, parent, etc.), in which the intent of the other person is unknown. The child is

read the prompt then is told to select the reason that the other actor behaved as such.

The available options for attribution are neutral, negative, and positive.
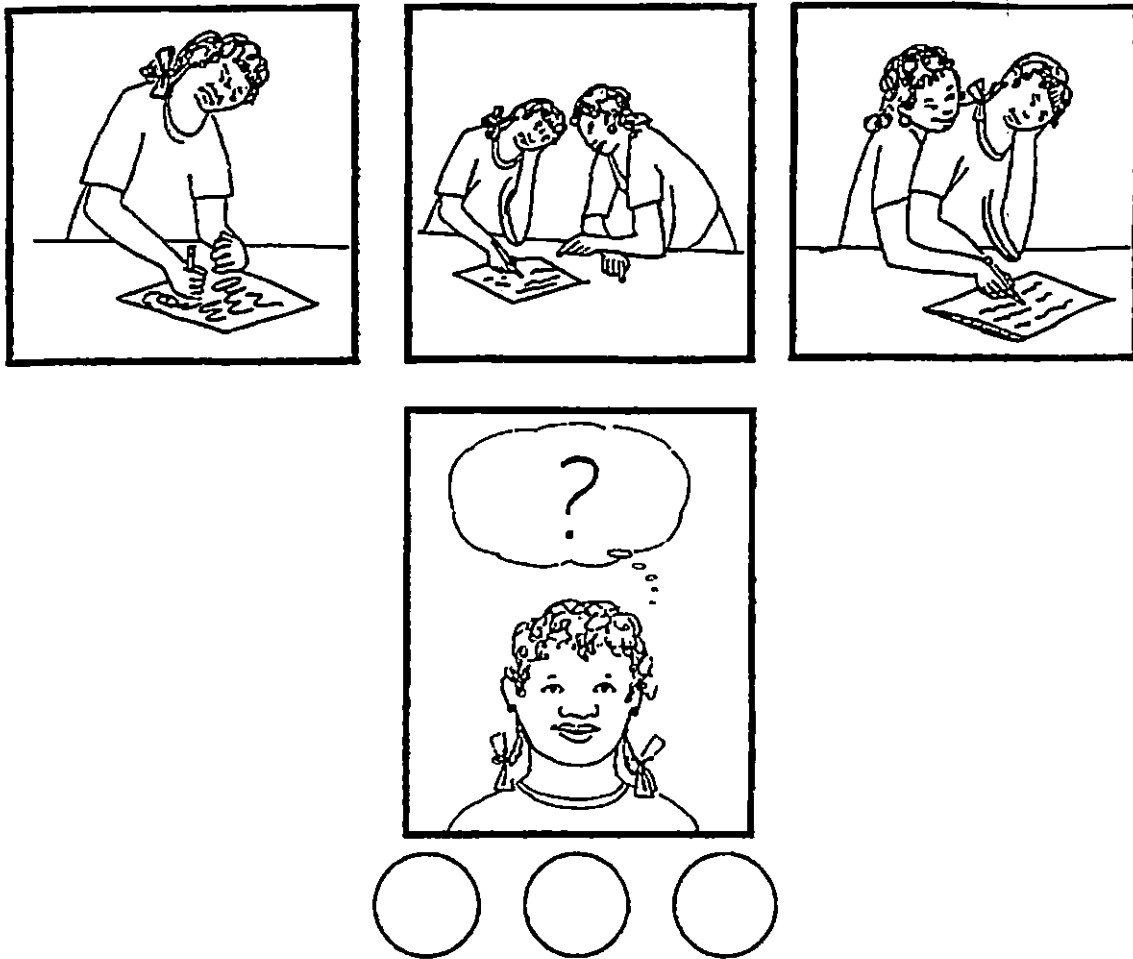
For the example illustration above, the vocal prompt would be as follows:

"[First Frame] Keisha is at school trying to write her name, but she's having a hard

time making the letters. [Second Frame] Her teacher comes over. She sees that

Keisha can't even write her own name! [Third Frame] Her teacher takes her hand and

shows her how to write her name. [Fourth Frame] Why does Keisha's teacher do

that?" Possible answers given to the child for her selection would be, "She is just doing her job", "She thinks she's so dumb that she can't even write her own name", "She really wants to help Keisha learn how to write her name."

Scoring is done such that for each negative, or hostile, response (e.g., "She thinks she's so dumb that she can't even write her own name") the child receives a score of 1. For each neutral solution (e.g., "She is just doing her job"), the child is scored a 2, and for each positive response, the child receives a score of 3. Scores, then, can range from 16-48, with lower scores indicating greater hostile attribution bias. Internal consistency of the task as measured by Cronbach's alpha was .85.

Preschool Interpersonal Problem Solving (PIPS) Test. The PIPS is a 5-item open-ended interview for children used at Time 2 (Shure, Spivack, & Jaeger, 1971). It investigates how the child would respond when placed in a troublesome situation (i.e. the child could be in trouble/mother might be mad due to property damage) [See Appendix B]. The PIPS is a widely used method of assessing childhood problem solving. A trained graduate-level researcher and an undergraduate researcher reached 100% interrater reliability for 15% of cases. Scoring is conducted by giving a point each time the child illustrates a novel way to resolve the conflict with an authority figure. Scores are calculated per solution-category. For example, for the probe "One day R tore some pages in his mother's favorite book and he was afraid his mother would be mad. What can R do or say so his mother won't be mad?" if the child responded with the solutions of "Tell Mommy I love her" and "Cry so she won't be mad", the child would be given two points for solution-category (i.e., the categories

would be verbal manipulation of affect, and finagling) (Shure, Spivack, & Jaeger,

1971).

Social Competence:

Preschool Questionnaire. Prosocial and antisocial behaviors were assessed at

Time 2 using the Preschool Questionnaire. This is a 12-item Likert-style

questionnaire that has six positive (i.e. prosocial, empathy) and six negative (i.e.

antisocial) statements [See Appendix C]. Teachers score children on a 4-point scale

(1 = not at all true of this child; 4 = very true of this child). This measure was

designed to offer insight as to the child's prosocial and antisocial behaviors. Prosocial

items include such statements as, "is considerate of other children," and "has several

close friends." Antisocial items consist of statements like, "tries to take advantage of

other children," and "is verbally cruel to other children." Cronbach's alpha for the

parent-version was .78 for prosocial behavior, and .75 for antisiocial behavior. For

the teacher version, .91 was obtained for prosocial and .92 for antisocial.

Head Start Questionnaire. The Head Start Questionnaire, also referred to as

the Penn Interactive Peer Play Scale, was completed at Time 2. It is a 32-item teacher

rating measure of children's social playtime behaviors, and was constructed in

collaboration with Head Start teachers and parents (Fantuzzo, Sutton-Smith,

Coolahan, Manz, Canning, & Debnam, 1995) [See Appendix D]. Therefore, the items

were designed for a low-income, at-risk sample. The Head Start Questionnaire is

comprised of three subscales: (A) interaction, measuring prosocial behavior; (B)

disruption, measuring aggressive behavior; and (C) disconnection, measuring

isolating, non-participatory behaviors. Higher scores indicate a higher degree of each

construct being measured. Chronbach's alpha for the parent-version was .69 for

interaction, .72 for disruptive behavior, and .71 for disconnected behavior. For the

teacher version, alphas were .90, .89, and .88, respectively.

Verbal Intelligence:

At both Time 1 and 2, verbal abilities were measured using The Peabody Picture

Vocabulary Test – Revised (PPVT-R: Dunn & Dunn, 1981). The PPVT-R has shown

to be a good measure of receptive vocabulary, and was used so as to ensure that the

child understood the other parts of the interviews. The PPVT-R uses a nonverbal,

multiple-choice format. Scores correlate highly with measures of general intelligence,

along with scores of reading and language (Dunn, & Dunn, 1981).

Results

Preliminary Analyses.

Researchers first explored gender as a covariate. Chi-Square was used to

determine if gender was associated with attachment, which it was not. A series of t-

tests were conducted on each measure of socioemotional functioning to determine if

gender needed to be controlled for during analyses. Results yielded no significant

findings and no trends ($Fs<7.06, ps>.11$).

The potential influences of additional confounding variables, age and PPVT-R

language scores, were subsequently assessed for associations with all indices of child

socioemotional functioning. There were a number of correlations between these

variables and Time 1 emotion interview ratings, so age and PPVT-R scores will be

controlled in analyses [See Table 3]. Specifically, the older children had higher scores

of verbal abilities compared with the younger participants. Age and PPVT-R scores

were also associated with measures of child socioemotional functioning at Time 2,

specifically scores on the Support Attribution Task (i.e., child's age correlation,

$p<.01$) and the prosocial teacher-report subscale of the Preschool Questionnaire (i.e.,

child's age correlation, $p<.01$), and the interaction teacher-report subscale of the Head

Start Questionnaire (i.e., PPVT-R scores correlation, $p<05$). Thus, these variables will

be controlled for in subsequent analyses.

Attachment.

Due to time constraints, coding on attachment was completed for only 32 of

the subjects. As described earlier, the cases were grouped together for analyses

depending upon the level of risk associated with their attachment classification using

the PAA system (Crittenden, 1994; 2004). Specifically, two groups were used for

analyses: a normative group, comprised of children with Type B attachment as well

as those with an A or C style of attachment that most closely resembles the secure

type; and a high-risk group, made up of those whose attachment style is an A+ or C+,

indicating greater distress within the parent-child relationship. When attachment

coding is complete, the next statistically analytical step would be to compare A vs. B

vs. C vs. High Risk combined, so as to be able to differentiate socioemotional

behaviors among the three normative classifications.

A decision was made to examine each index of child socioemotional

functioning separately. When attachment coding is complete, researchers will further

investigate methods of meaningfully combining these variables to reduce the

likelihood of Type I findings. The result was a series of one-way (i.e., normative vs.

high-risk attachment) ANOVA/ANCOVA's for the following variables: Emotions

Interview (i.e., relationship and enthusiasm, affect appropriateness, internalizing, and

externalizing), the Support Attribution Task scores, the number of relevant solutions

offered during the PIPS task, prosocial and antisocial behavior (i.e., both parent- and

teacher-ratings) as measured by the Preschool Questionnaire, and parent- and teacher-

reports of interaction, disruption, and disconnection (i.e., from the Head Start

Questionnaire). The specific breakdown of the socioemotional variables is depicted in

Table 4.

In general terms, the normative attachment group typically fared better in

terms of socioemotional adjustment than the high-risk sample, though not always

significantly so [See Table 4]. It should be noted that the sample size for all Time 2

data was further reduced by attrition, so that analyses for attachment and parent-

report included 26 subjects and for teacher-report included 25 subjects.

In order to look at the relationship between attachment and Time 1 emotion

regulation, researchers ran a series of ANCOVA's controlling for age and verbal

abilities. Attachment was significantly related to three Emotions Interview ratings

(relationship/enthusiasm: $F(1,29)=7.36, p=.01$; internalizing: $F(1,29)=5.56, p<.05$;

externalizing: $F(1,29)=5.91, p<.05$), and was related to the fourth at a trend level

(affect appropriateness: $F(1,29)=3.32, p<.10$). In each case children classified with

normative attachments showed more adaptive emotion regulation skills, relative to

children with higher risk attachment classifications. Children in the normative group were more engaged and showed fewer symptoms of internalizing and externalizing difficulties in the Emotions Interview. They also tended to display emotion consistent to the feeling being discussed.

At Time 2, Support Attribution Task scores were not associated with attachment when PPVT-R and age were controlled. Nor was the number of solutions on the PIPS at Time 2 related to attachment. Because of these non-significant findings, the mediation hypothesis cannot be further explored.

Using an ANCOVA to control for age, normative attachment predicted higher Time 2 teacher ratings of prosocial peer behavior on the Preschool Questionnaire, $F(1,25)=5.54$, $p<.05$, but not antisocial behavior. Attachment failed to predict parent reports of prosocial and antisocial behavior on the Time 2 Preschool Questionnaire.

Age and verbal scores were not found to be correlated with subscales of the Head Start Questionnaire, so a series of ANOVAs was conducted to assess the relationship between attachment and these Time 2 variables. Those classified with a normative attachment pattern (i.e., A/B/C) were given higher scores of parent-reported prosocial peer interaction, $F(1,25)=5.67$, $p<.05$, though parent reports of disruption and social disconnection were not significant.

With PPVT-R scores controlled for, teacher-report of child prosocial interaction on the Time 2 Head Start Questionnaire was also significant, though at the trend level, $F(1,25)=3.50$, $p<.10$, while teacher report of social disconnection reached significance, $F(1,25)=5.41$, $p<.05$. Children with normative attachment classifications

showed both greater prosocial peer behavior and less signs of being isolated and ignored by peers. Teacher ratings of disruptive behavior failed to reach significance.

In sum, children with normative types of attachment had significantly better concurrent emotion regulation skills during the emotions interview, relative to children with high-risk (i.e., A+ or C+) patterns. Attachment did not predict social information processing scores, antisocial peer behavior, or disruptive/aggressive social behavior. However, attachment was typically associated with prosocial behavior towards peers, with children having normative attachment patterns displaying significantly more of these behaviors than their high-risk peers. It is notable that analyses that were not significant did generally have means in the predicted direction [See Table 4]. Overall, hypothesis 1 was strongly supported and hypothesis 2 was partially supported.

Emotion Regulation.

An additional aim (i.e., hypothesis 3) of the current study was examining the relationship between children's emotion regulation skills and their social functioning. Child enthusiasm and relationship engagement during the Emotions Interview was negatively correlated with disconnectedness, as measured by teachers, two years later, $r(53) = -.475, p<.01$. That is, the more interactive and engaged the child was at 4 years old, the less likely the child was to be viewed as self-isolated, and non-participatory at age 6 by teachers. Enthusiasm and relationship was also found to be positively correlated with prosocial behavior, as measured by teachers, at Time 2, $r(53) = .354, p<.01$. Thus, the more involved and engaged the child was while

discussing their feelings with an adult at age 4, the more prosocial peer behaviors

they had at age 6. Enthusiasm and relationship was, additionally, positively correlated

with the number of relevant solutions offered two years later during the Preschool

Interactive Problem Solving Task, $r(51) = .305$, $p<.05$. Children who were more

engaged during the Emotions Interview at age 4 were more capable at solving

difficult social problems involving adults at age 6 [See Table 5].

Affect appropriateness was positively correlated with the Support Attribution

Task, $r(55) = .286$, $p<.05$, the PIPS, $r(51) =.333$, $p<.05$, and teacher's perceptions of

prosocial behavior, $r(53) = .295$, $p<.05$. These findings suggest that skills at age 4 in

matching displayed emotion to that being discussed during the Emotions Interview is

related to children thinking more highly of others in ambiguous situations, developing

more solutions in problematic social situations with adults, and showing more

positive and empathetic peer behavior at age 6.

Internalizing behavior, as measured by the Emotions Interview at Time 1, was

positively correlated with teacher-rated prosocial behavior two years later, $r(53) =$

$.380$, $p<.01$. That is, the less symptoms of distress a child revealed at age 4 was

related to being viewed as more empathetic towards peers at age 6. Interestingly,

internalizing was negatively correlated with teacher ratings of disconnectedness two

years later, $r(53) = -.515$, $p<.001$, meaning that the more distressed a child seemed at

age 4, the more likely that child will be isolated and non-participatory with peers at

age 6. Children with fewer internalizing symptoms during the Emotions Interview

also had more solutions on the PIPS social information problem-solving task (r(53) = .270, p<.05).

Regarding externalizing symptoms at Time 1, a surprising negative correlation was found with teacher ratings of disruptive behavior at Time 2, r(53) = -.307, p<.05. Children with more externalizing difficulties during the Emotions Interview at age 4, including hyperactive and impulsive behaviors, tended to show less aggressive/disruptive behavior in school two years later [See Table 5]. This is surprising in that one would assume these behaviors might resemble one another.

In general, our hypothesis regarding the importance of emotion regulation skills at Time 1 for understanding socioemotional adjustment at Time 2 was supported. Children with more adaptive emotion regulation skills on the Emotions Interview had higher levels of prosocial peer behavior (on both parent and teacher report, though parent data was not discussed for reasons of brevity); less disconnected and isolative social behavior; and increased solutions in the social problem-solving task.

Social Information Processing

The final hypothesis involved testing associations between children's social information processing skills and their social functioning, as reported primarily by teachers.

Support Attribution Task. A positive significant finding was revealed between SAT scores and teacher-ratings of prosocial behavior, r(54) = .321, p<.05 [See Table 5]. That is, the more positive (i.e., non-hostile) answers the child gave during the SAT,

the more likely the child was to be seen by his or her teacher as prosocial and empathetic towards peers.

Preschool Interpersonal Problem Solving Task. Excluding the aforementioned relationships regarding the Emotions Interview variables, no other correlations were found with any other variables ($p>.10$).

Discussion

This study was designed to examine the linkages between attachment, emotion regulation, social information processing, and social competence among a moderately at-risk, low-income, urban African-American sample. Leading researchers (i.e., Dykas & Cassidy, 2011) have called for studies that examine these constructs together, as published studies that do so do not seem currently to exist. These constructs have been theorized to work in harmony, and thus should be examined jointly. Thus, this study can potentially add deeper understanding to the field in terms of both theory and practical application. This study also uses a longitudinal design and diverse methods of assessment. It employs the gold standard assessment of attachment (i.e., the Strange Situation) and uses an attachment coding system (Crittenden's PAA, 2004) that is very sensitive to level of familial risk. It is particularly important to understand the utility of these methods and theoretical constructs for understanding the adjustment of these understudied and at-risk low-income African American children (Raver, 2004).

Researchers expected that children with less secure attachment would have lower abilities in emotion regulation, compared with the normative sample. Indeed,

attachment at age 4 was consistently associated with emotion regulation skills assessed concurrently in the Emotions Interview. Children who utilized secure or normative insecure (i.e., Types A1-2 and C1-2) attachment strategies were significantly — in contrast to higher-risk children — more engaged throughout the interview, showed fewer signs of sadness and anxiety, displayed less hyperactive and impulsive behavior, and typically showed affect that matched the emotion being discussed. This finding supports previous research conducted during toddlerhood and preschool (Kidwell et al, 2010; Kochaska, 2001), as well as the middle-childhood phase (Contreras, Kerns, Weimer, Gentzler, & Tomich, 2000). The literature is most clear and consistent about the connections between attachment and emotion regulation and behavioral difficulties among children with high-risk attachment classifications (Deklyen, & Greenberg, 2008; Kidwell, 2010; Hazen, Jacobvitz, Higgins, Allen, & Jin, 2011; Moss, Bureau, St-Laurent, & Tarabulsy, 2011; Thompson, 2008). Emotion regulation is thought to be an important pathway through which attachment influences behavior.

The other factor proposed here as a potential mediator between attachment and social functioning found less support. Indices of children's social information processing were not associated with their attachment, as would have been predicted by theoretical ties between the two involving schema and internal working model concepts (Dodge, 2006; Dykas & Cassidy, 2011). Also, neither the PIPS social problem-solving measure nor the SAT attribution measure was consistently associated with children's social behavior, which seems a bit more problematic than

the null findings for attachment. Dodge (2006) states that over 100 studies over the

past 25 years have shown that the hostile attribution bias is associated with children's

social adjustment, particularly aggression. Though there is not much literature

regarding attachment and social information processing, the current findings

contradict past research (Kidwell, Hinkle, Day-Brown, Burgin, Martin, Young, 2007;

Raikes & Thompson, 2008). In fact, research exists that suggests that, especially in

at-risk samples, hostile attribution bias tends to be more pronounced in African

Americans (Dodge, 2006). Thus, the current researchers believe that a questionnaire-

interview measure might not be a strong enough tool to elicit an appropriate

emotional reaction for the hostile attribution bias to be demonstrated. Some research

suggests scenarios played out in front of the child and those that induce negative

affect produce the largest effect size between hostile attribution bias and aggression

(de Castro, Veerman, Koops, Bosch, Monshouwer, 2002; Horsley, de Castro, & Van

der Schoot, 2010).

The Support Attribution Task was developed for this study and, although

children seemed to find it an engaging task, they may not have understood it well

enough to give meaningful answers. Scores were associated with receptive

vocabulary and child age in the .4 to .5 range and researchers were concerned enough

about the problem of comprehension that ratings were made of perceived child.

understanding. Additional analyses may benefit from excluding children with either

PPVT-R or interviewer ratings suggesting poor comprehension of the task. The PIPS

may suffer from a different measurement issue (i.e., these scores were not associated

with age and vocabulary). The number of relevant solutions offered during the PIPS simply means that the child can think of multiple ways to solve a problem. Many suggested solutions included things like, "Tell mom a joke so she won't be mad", or "hide it so Momma doesn't find out", and even "blame someone else". These solutions aren't of a positive nature, though they might still resolve the issue; yet in the coding manual developed by Shure and colleagues (1971) they are given the same point value as more socially acceptable solutions. Utilizing a more refined coding system may reveal relationships between problem-solving strategies and social functioning, as well as with attachment. Controlling for the confound of social desirability in child self-report may also improve findings for both measures.

As hypothesized, attachment significantly predicted several indices of children's social behavior two years later. Children's prosocial behavior was predicted across respondents, both parent and teacher, and measures (i.e., both Preschool and Head Start Questionnaires). Teachers were particularly consistent in rating children utilizing normative attachment strategies as having greater levels of empathetic and helpful behaviors towards their peers, relative to children using high-risk attachment strategies. Teachers also rated children with higher-risk attachment patterns as being more isolated and withdrawn from their peer group, relative to children with normative patterns. These findings match those in the literature showing that attachment has implications for children's social competence (Schneider, Atkinson, Tardiff, 2001; Deklyen, & Greenberg, 2008). These results imply that the secure child's internal working model has led him to expect social interaction to be

predictable and non-threatening, perhaps giving him the confidence to attempt more

peer interactions as predicted by Bowlby (1969). On the other hand, those with high-

risk attachment have learned through parent-child interactions that socializing with

others may be risky, leading to shame or rejection (Anan, & Barnett, 1999; Bowlby,

1969). This would cause these children to be less likely to proactively interface with

others, in turn isolating themselves.

Inconsistent with expectations, more externalizing, disruptive, and antisocial

types of social behavior, however, were not associated with children's attachment as

examined here. The means for the current sample are quite close for low- and high-

risk groups [See Table 4], suggesting to researchers that the number of coded

attachment cases may not be to blame. Considerable literature exists that associate

attachment with externalizing behavior problems, particularly for children with high-

risk attachment (Deklyen, & Greenberg, 2008; Moss, et al, 2011). Thus, this

surprising finding merits additional consideration. It is not particularly surprising that

parent-report of disruptive/aggressive behavior is not meaningfully related to

attachment, as parents may minimize problem behavior for the sake of social

desirability and/or may have less opportunity to observe their children interacting

with peers. Generally, rates of these behaviors as reported by both parents and

teachers are quite low, particularly for the Preschool Scale developed for the study, so

some restriction of range may be influencing of these analyses. It is notable that the

wording on the antisocial subscale of this measure is a bit more extreme than items on

the disruptive subscale of the Head Start Questionnaire, and that these two subscales

are not associated [See Table 5]. Also, it may be that the behaviors described are more typical problem behaviors for younger children, as both Preschool and Head Start measures were developed for preschoolers and this sample was assessed at age 6.5 years on average

A particularly perplexing finding along these same lines is the result that externalizing symptoms, as measured by the Emotions Interview at Time 1, were negatively correlated with teacher-rated scores of disruptive behavior at Time 2 [See Table 5]. This means that children who were more fidgety and impulsive during the interview were less disruptive in the classroom. Perhaps children showing such externalizing behaviors quickly learn that these behaviors are unacceptable, such that two years later this behavior is mostly eradicated. This may be particularly true in low-income, African American families, where authoritarian principles are thought to be common (Cunningham et al, 2009). Additionally, as already described, children with high-risk attachments were more likely to display externalizing behaviors in the Emotions Interview. It may be that the ratings of externalizing behavior are actually indices of anxiety. Children with compulsive A+ attachment strategies are particularly concerned with pleasing adults. This may manifest as high arousal during the interview task but also great sensitivity to teacher expectations for classroom behavior. Unfortunately this wouldn't necessarily indicate better overall adjustment for these children, just further inhibition of the external display of their feelings. Once attachment coding is complete, analyses will be conducted to assess the subtle

differences between the groups within the high-risk sample (i.e., A vs. B vs. C vs. A+ vs. C+).

These incomplete data are not a factor in examining an additional question of this study: the associations between emotion regulation and subsequent child socioemotional adjustment. Children who were more enthusiastic and engaged displayed affect that matched the emotion being discussed, and had less withdrawn and anxious behavior during the Emotions Interview, were seen by teachers as less isolated from and more prosocial with their peers. They also generated a greater number of solutions to the social problems presented in the PIPS [See Table 5]. This provides supporting evidence of the adaptive role of emotion regulation skills in social adjustment. However, the social nature of the Emotions Interview and PIPS procedure may be a consideration, as both involve an approximately 10 minute interview with relatively unfamiliar adults. Perhaps being comfortable with adults enables the child to perform better at these tasks because they are not as anxious as other children. Regardless, these findings support previous research tying emotion regulation skills with social competence (Contreras, Kerns, Weimer, Gentzler, Tomich, 2000; Cunningham et al, 2009; Lopes, Salovey, Côté, & Beers, 2005; Mendez, Fantuzzo, & Cicchetti, 2002).

The majority of research on these topics utilizes the standard middle-class, Caucasian sample. Our findings are consistent with the limited number of studies examining attachment and social competence among low-income, African-American samples. Similar to Finger and colleagues (2009), high-risk attachments seem to be

over-represented among this population, mostly likely due to the preponderance of financial and other stressors.

And like Bost and her fellow researchers (1998), researchers here showed connections between African American children's adjustment and their attachment to their primary caregivers. These results are also similar to those of a recent study showing that emotion regulation has significant connections with social and behavioral adjustment among low-income, African American preschoolers (Cunningham et al, 2009). The consistency with which our findings mirror each of these studies adds to the theoretical importance of attachment and social competence across cultural boundaries.

Together, these findings have several implications for low-income African American children and families. As previously mentioned, individuals like those in the current sample undergo stress and strain that is atypical of samples commonly utilized in research (i.e., middle-class, Caucasian). Many of the households in this study were headed by single mothers, often working multiple jobs. They often times may rely on having outside family members or older siblings care for the child, even while being concerned for their children's physical safety in their neighborhoods. In these situations, it is particularly important to understand the risks and protective factors in these children's lives. Typically, attachment and well-developed emotion regulation skills act as protective factors, leading to better adjustment. The current study, similar to that of other African American preschool studies (e.g., Bost et al, 1998; Finger et al, 2009, suggest that secure (or at least low-risk) attachment is

protective for these children. And these findings also support those of previous researchers (e.g., Cunningham et al, 2009; Mendez et al, 2002), indicating that solid emotion regulation skills are protective. Thus research has identified possible targets for prevention and intervention among low-income, at-risk African American children and families. Early intervention programs, such as Head Start, Second Step, and others, are aimed at filling potential gaps in social, emotional, and family development. Outreach programs are also being utilized to enhance parental sensitivity, aiming to ultimately impact children's attachment.

In conclusion, a number of the researcher's predictions were supported. Attachment predicted children's emotion regulation skills and their prosocial and withdrawn behavior. Emotion regulation skills were associated with children's prosocial and withdrawn behavior, as well as with generation of solutions to social problems. Attachment was not associated with social problem solving measures, or with disruptive and antisocial behavior. In addition to the low sample size for results involving attachment at present, other limitations of the study include attrition from Time 1 to Time 2 and measurement issues that must be further explored. Once attachment classifications are complete more sophisticated analyses will be conducted that can hopefully address these issues. These include plans to revisit possible mediational analyses to investigate the contributions of emotion regulation and social information processing skills to the relationship between attachment and child socioemotional adjustment.

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Table 1.

Time 1 & Time 2: Variables & Measures

Time	Variable	Measure
T 1	Attachment	Strange Situation Classification
	Emotional Regulation	Emotions Interview Ratings
		Relationship/Enthusiasm
		Affective Appropriateness
		Internalizing Behaviors
		Externalizing Behaviors
	Receptive Vocabulary	Peabody Picture Vocabulary-R Scores
T 2	Social Information Processing	Support Attribution Task Scores
		PIPS* Number of Relevant Solutions
	Social Competence- Parent and Teacher Reports	Preschool Questionnaire-
		Prosocial Behavior
		Antisocial Behavior
		Head Start Questionnaire**
		Prosocial Interaction
		Disruptive Behavior
		Disconnected Behavior
	Receptive Vocabulary	Peabody Picture Vocabulary-Revised

Note: *PIPS refers to the Preschool Interactive Problem Solving Task;

**The Head Start Questionnaire is also called the Penn Interactive Peer Play Scale.

Table 2.

Attachment Type Break-Down

Analyses Group	Attachment Style	N*	Percent
Normative	B (1-5)	6	18.8%
	A (1-2)	8	25.0%
	C (1-2)	8	25.0%
High Risk	A+ (3-4)	6	18.8%
	C+ (3-4)	4	12.5%

Note: *of the 32 total cases coded

Table 3.

Emotion Interview Variables Correlations with Age and PPVT-R Scores

Variable	Emotions Interview Variable			
	Relat/Enthus	Aff Approp	Intern	Extern
Child Age	.260*	.346 **	.168	.252*
PPVT-R	.375**	.348**	.301*	.126

*p<.05

**p<.01

Table 4.

Means and Standard Deviations of Normative vs. High-Risk Attachment with

Socioemotional Functioning

Dependent Variable	Normative		High Risk		N	Significance
	M	*SD*	*M*	*SD*		
EI Relationship/Enthusiasm	18.7	4.42	13.1	6.72	32	p<.001
EI Affect Appropriateness	18.3	5.07	14.2	6.12	32	p<.10
EI Internalizing	20.0	4.36	15.4	5.74	32	p<.05
EI Externalizing	22.6	2.10	19.2	5.34	32	p<.05
Support Attribution Task	43.4	4.24	42.5	4.92	26	NS
PIPS: Relevant Solutions	5.0	2.75	4.3	1.76	26	NS
Prosocial – Parent	16.7	3.78	15.1	4.61	26	NS
Prosocial – Teacher	18.6	3.88	14.8	4.45	25	p<.05
Antisocial – Parent	7.0	2.14	7.5	4.24	26	NS
Antisocial – Teacher	7.4	1.97	7.1	1.64	25	NS
Interaction – Parent	31.6	3.88	27.6	3.93	26	p<.05
Interaction – Teacher	28.8	4.75	24.7	4.95	25	p<.05
Disruption – Parent	19.1	4.12	19.1	3.56	26	NS
Disruption – Teacher	17.0	5.23	16.7	5.28	25	NS
Disconnect – Parent	13.7	3.05	13.1	4.15	26	NS
Disconnect – Teacher	13.8	3.35	17.9	5.01	25	p<.05

Table 5.

Simple Correlations Among All Dependent (i.e., Socioemotional) Variables

Variable	2	3	4	5	6	7	8	9	10	11
1. EI Enth/Rel	.816**	.833**	.417**	.193	.305*	.354**	-.059	.217	-.184	-.475**
2. EI Aff App	-	.697**	.434**	.286*	.333*	.295*	.000	.172	-.107	-.386**
3. EI Intern	-	-	.342**	.211	.270*	.380**	-.064	.191	-.071	-.515**
4. EI Extern	-	-	-	.224	.093	.087	-.105	.096	-.307*	-.181
5. SAT	-	-	-	-	-.074	.321*	-.177	.165	.076	-.009
6. PIPS	-	-	-	-	-	-.135	.154	.043	.140	-.189
7. Prosocial-T	-	-	-	-	-	-	-.596**	.199	.079	-.153
8. Antisocial-T	-	-	-	-	-	-	-	-.179	.046	.044
9.Interact-T	-	-	-	-	-	-	-	-	-.067	-.318*
10. Disrupt-T	-	-	-	-	-	-	-	-	-	.308*
11. Disconnect-T	-	-	-	-	-	-	-	-	-

Note: Teacher-data was used, rather than parent-data, for brevity. Parent and teacher

data did not differ significantly.

* p<.05

** p<.01

Figure 1.

Preschooler Patterns in Crittenden's DMM Theory.

(Crittenden, 2008).
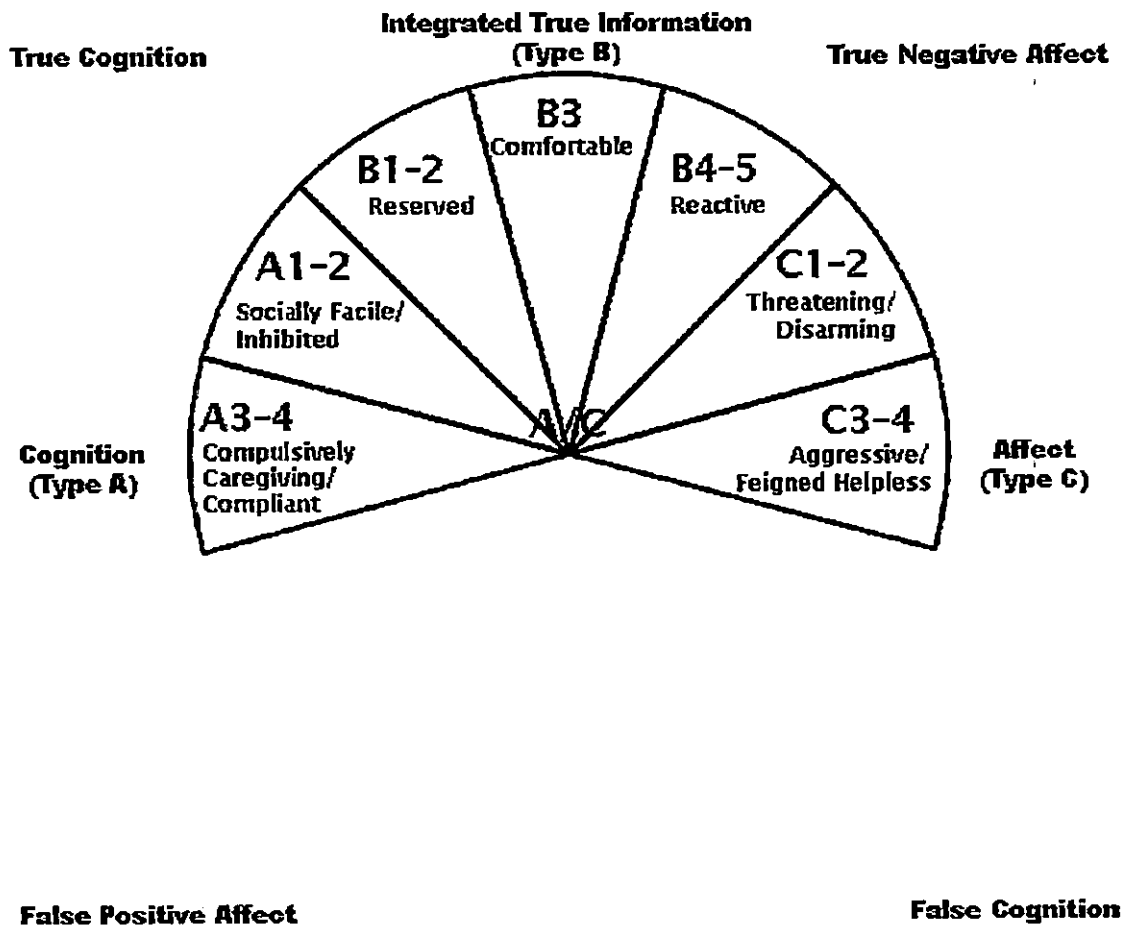
Figure 2.

Steps in the Thinking and Behavior of Aggressive Children in Social Situations.

(Crick, & Dodge, 1994).

Step 1: Encoding

Socially aggressive children use fewer cues before making a decision. When defining and resolving an interpersonal situation, they seek less information about the event before acting

Step 5: Enactment

Socially aggressive children use poor verbal communication and strike out physically

Step 2: Interpretation

Socially aggressive children attribute hostile intentions to ambiguous events

Step 4: Response Decision

Socially aggressive children are more likely to choose aggressive solutions

Step 3: Response Search

Socially aggressive children generate fewer and more aggressive responses and have less knowledge about social problem solving

Figure 3.

The Hypothesized Relationship Among Proposed Constructs

Appendix A

Emotions Interview

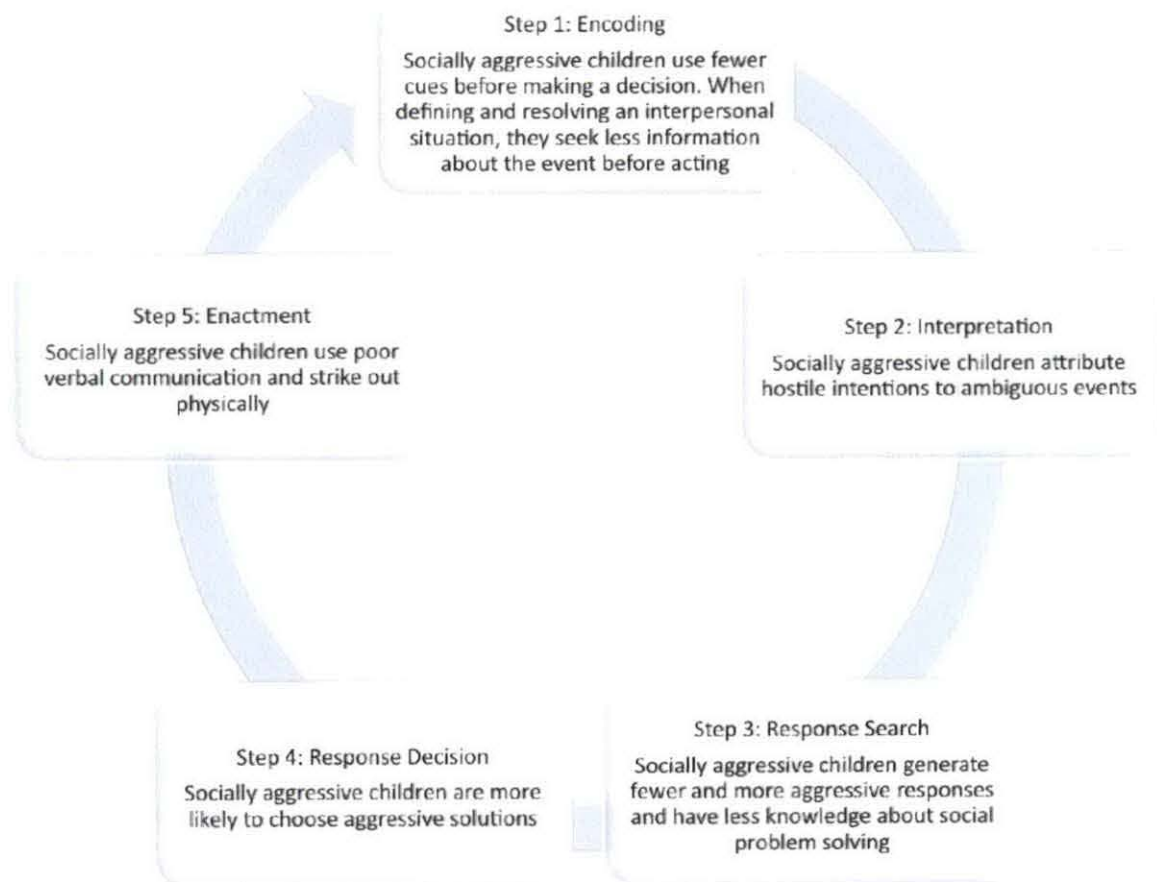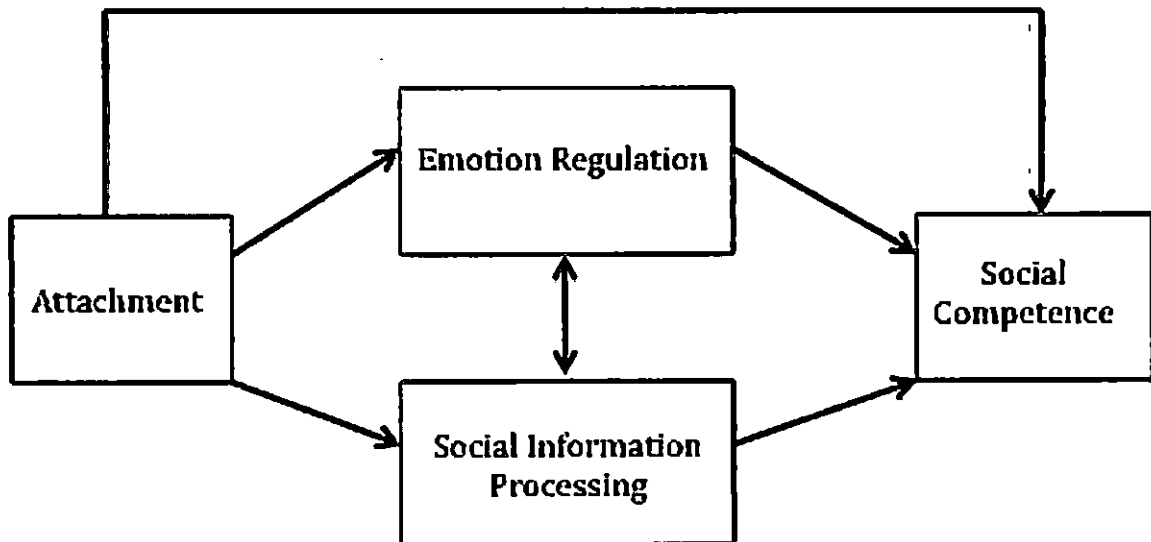Researcher: "We're going to ask you about some different feelings now, ok? And for each feeling, I want you tell me a story about a time that you felt that way. Can you do that? The feelings we are going to talk about are calm, happy, scared, sad, excited, and mad. *[Lay each card out so the child can see the name and picture of each card. Point to each card as you say the name].* Do you know what calm means? *[Wait for child's response; if no response is given continue. If child responds correctly, move on to next emotion].* Calm means relaxed, or just your regular self. *[Repeat definitional procedure for each emotion].* Ok, I can tell you're going to be very good at this game. Now, which feeling do you want to talk about first?"

Child selects one of the six emotions.

Researcher: "Ok, you've picked [name of emotion]. First, can you show me your [name of emotion] face? What does your face look like when you're feeling [name of emotion]?

Wait for child's facial response. If no response is given, continue.

Researcher: "That's a great [name of emotion] face! Good job! Ok, now I want you to tell me about a time when you felt [name of emotion]. Tell me about any time that you were feeling [name of emotion].

Wait for child's response; if no response is given, ask probing questions.

R: "That's a great [name of emotion] story! Ok, that time when you were feeling [name of emotion] because [repeat major story line to child], were you feeling a little bit [name of emotion], a medium amount, or a whole lot [name of emotion]?" *[While asking about 'little bit', 'medium amount' and 'whole lot', point to the designated teacups indicating respective amounts].*

Wait for child to indicate level of emotion.

R: "Ok, now how much of the time do you feel [name of emotion]? Hardly ever, sometimes, or all the time?" *[While asking 'hardly ever', 'sometimes', or 'all the time', point to the designated teacups indicating respective amounts.]*

R: "Great job! You're a really good helper; I'm having a lot of fun. Ok, which feeling do you want to talk about next?"
Continue to discuss each emotion as described above, until the child has discussed each emotion.

Appendix B

Preschool Interpersonal Problem Solving (PIPS) Test

Child's Name _____

Sex   _____ M   _____ F

School   _____

Teacher   _____

Date   _____

Experimenter _____

Instructions to Subject:

We want to know how children things about things. I've got some pictures,

and I'm going to tell you some stories about children. I'm going to tell you the first

part of the story, and I want you to make up the rest of the story. All of these stories

are pretend (make-believe) , o.k.? Pretend all the children are (age of S).

Minimum of 5

1) Q broke his/her mother's favorite flowerpot and he/she is afraid that his/her

mother will be really mad at him/her.

What can Q do or say so his/her mommy will not be mad at him/her?

2) Now let's pretend that <u>P</u> scratched his/her mother's wood table, and it made a big

    scratch or mark on the table. His/her mother might be mad at him/her.

        What can <u>P</u> do or say so his/her mommy will not be mad at him/her because

        s/he scratched mommy's table?

3) Now, let's say that it's this way. <u>Q</u> burned a hole in his/her mother's best dress

    and he/she was afraid that his/her mother would be mad at him/her.

        What can <u>Q</u> do or say so that his/her mother won't be mad at him/her?

4) One day <u>R</u> tore some pages in his/her mother's favorite book and he/she was

    afraid his/her mother would be mad.

        What can <u>R</u> do or say so his/her mother won't be mad?

5) <u>S</u> was playing ball and the ball hit a window. The window broke, and he/she

    knows his/her mother will be mad at him/her.

        What can <u>S</u> say or do so that his/her mother won't be mad?

If five different solutions given, continue. Stop when no new solution is given.

---

6. Broken Dish

7. Broken Glass

8. Broken Ashtray

9. Smashed Car Window

(Create additional acts of property damage as needed.)

Appendix C

Preschool Questionnaire

The following list of statements describes different aspects of children's behavior.

Please respond to each item by writing the number from the scale below, ranging

from 1 to 4, which most accurately describes the child.

1	2	3	4
Not At All	A Little	Pretty True	Very True
True of This Child	True of This Child	Of This Child	Of This
Child			

<u>Relationships with Peers</u>

_____   1. Is considerate of other children

_____   2. Is warm and responsive to other children

_____   3. Gets along well with other children

_____   4. Is verbally cruel to other children

_____   5. Shows concern for other children's feelings

_____   6. Is destructive towards other children's work or play materials

_____   7. Seeks positive social interaction with other children

_____   8. Sticks up for children who are teased, left out, or unpopular

_____   9. Tries to take advantage of other children

_____   10. Has several close friends

_____   11. Is selfish, unconcerned about other children

_____   12. Shares with or lends things to other children

_____   13. Is liked by other children

_____   14. Victimizes or scapegoats other children

_____   15. Initiates conversation with other children

_____   16. Offers help to other children

_____   17. Hurts other children's feelings

_____   18. Handles conflicts with other children appropriately

Appendix D

Head Start Questionnaire

In the <u>past two months,</u> indicate how much you have observed the following

behaviors in this child <u>during play</u> by circling Never, Seldom, Often, or Always

observed.

1. Helps other children

     Never   Seldom   Often   Always

2. Starts fights and arguments

     Never   Seldom   Often   Always

3. Is rejected by other

     Never   Seldom   Often   Always

4. Does not take turns

     Never   Seldom   Often   Always

5. Hovers outside play group

     Never   Seldom   Often   Always

6. Shares toys with other children

     Never   Seldom   Often   Always

7. Withdraws

     Never   Seldom   Often   Always

8. Demands to be in charge

     Never   Seldom   Often   Always

9. Wanders aimlessly

       Never   Seldom   Often   Always

10. Rejects the play ideas of others

       Never   Seldom   Often   Always

11. Is ignored by other

       Never   Seldom   Often   Always

12. Tattles

       Never   Seldom   Often   Always

13. Helps settle peer conflicts

       Never   Seldom   Often   Always

14. Destroys others' things

       Never   Seldom   Often   Always

15. Disagrees without fighting

       Never   Seldom   Often   Always

16. Refuses to play when invited

       Never   Seldom   Often   Always

17. Needs help to start playing

       Never   Seldom   Often   Always

18. Verbally assaults others

       Never   Seldom   Often   Always

19. Directs others' action politely

       Never   Seldom   Often   Always

20. Cries, whines, shows temper

       Never   Seldom   Often   Always

21. Encourages others to join play

       Never   Seldom   Often   Always

22. Grabs others' things

       Never   Seldom   Often   Always

23. Comforts others who are hurt or sad

       Never   Seldom   Often   Always

24. Confused in play

       Never   Seldom   Often   Always

25. Verbalizes stories during play

       Never   Seldom   Often   Always

26. Needs teacher's direction

       Never   Seldom   Often   Always

27. Disrupts the play of others

       Never   Seldom   Often   Always

28. Seems unhappy

       Never   Seldom   Often   Always

29. Shows positive emotions during play (e.g. smiles, laughs)

       Never   Seldom   Often   Always

30. Is physically aggressive

       Never   Seldom   Often   Always

31. Shows creativity in making up play stories and activities

      Never   Seldom   Often   Always

32. Disrupts class during transition from one activity to another

      Never   Seldom   Often   Always