The Pennsylvania State University

The Graduate School

Department of Psychology

LINKING CHILD SOCIAL ANXIETY AND PEER MALADJUSTMENT:

SOCIAL-COGNITIVE AND SOCIAL-BEHAVIORAL FACTORS

A Thesis in

Psychology

by

Stephen A. Erath

Submitted in Partial Fulfillment
of the Requirements
for the Degree of

Doctor of Philosophy

August 2006

The thesis of Stephen A. Erath was reviewed and approved* by the following:

Karen L. Bierman
Distinguished Professor of Psychology
Thesis Adviser
Chair of Committee

Susan McHale
Professor of Human Development and Family Studies

Jeffrey G. Parker
Associate Professor of Psychology

Brian Rabian
Associate Professor of Psychology

Kevin Murphy
Professor of Psychology
Head of the Department of Psychology

*Signatures are on file in the Graduate School.

ABSTRACT

The present study aimed to advance understanding of social-cognitive and social-behavioral vulnerabilities to peer maladjustment among middle school children with elevated social anxiety.  Hypothesized pathways linking social anxiety with peer acceptance and peer victimization were examined using reports of 84 target children, their peers and teachers, and behavioral observations.  Regression models revealed that social behaviors mediated pathways linking social anxiety and problem-directed coping strategies with peer acceptance, and that social performance expectations were directly linked with peer acceptance.  Social anxiety, self-directed coping strategies, and adaptive social behaviors were each directly linked with peer victimization for boys but not for girls.  In addition, logistic regression analyses revealed that social interaction skills during conversation differentiated the peer acceptance status of children with elevated social anxiety.  These findings and their implications for intervention are discussed.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

**Introduction**

Anxiety disorders are among the most common psychological disorders of childhood and adolescence (Weiss & Last, 2001). Some degree of child anxiety is normative and transient, yet child anxiety disorders often have a long-term course and increase risk for psychopathology in adolescence and adulthood (Vasey & Dadds, 2001). Childhood social anxiety has received increasing attention in recent years due to recognition of its potentially detrimental psychosocial consequences. Indeed, child social anxiety has been linked with concurrent problems and subsequent negative outcomes, including school maladjustment, other anxiety disorders, depression, substance abuse, and impaired occupational functioning (for a review, see Beidel & Turner, 1998).

In addition, socially anxious children are often rejected and victimized by their peers (Inderbitzen, Walters, & Bukowski, 1997; La Greca & Stone, 1993; Morris, 2001; Vernberg, Abwender, Ewell, & Beery, 1992). Research suggests that the relation between social anxiety and peer maladjustment is cyclical (Morris, 2001), and peer maladjustment most likely compounds the risk for later maladjustment posed by child social anxiety alone. Theorists have speculated that child social-cognitive and social skill development may play key roles in mediating the negative peer outcomes associated with social anxiety (Morris, 2001; Rubin & Burgess, 2001). However, little is known about the social-cognitive and social-behavioral processes by which social anxiety contributes to peer maladjustment.

The present study sought to elucidate these processes. In particular, the present study examined social behaviors that may be associated with social anxiety and mediate its link with decreased peer acceptance and increased peer victimization. Adaptive social behaviors in the school context and social interaction skills during a conversation task were the social behaviors

of interest in the present study, due to their purported susceptibility to influence by social anxiety. In addition, research suggests that the performance of these social behaviors may be shaped by social-cognitive factors associated with social anxiety. Thus, negative social performance expectations and self-directed coping strategies were examined as additional vulnerabilities to social-behavioral skill deficits and peer maladjustment. In addition, the present study examined heterogeneity in the peer adjustment of children with elevated social anxiety, and specifically investigated social-behavioral and social-cognitive factors that may account for subgroups of socially anxious children with and without peer problems.

The following literature review addresses: (1) the definition, developmental context, and outcomes of social anxiety; (2) the link between social anxiety and peer maladjustment, including conceptual models that offer explanations for the hypothesized contributions of social anxiety to peer maladjustment; (3) social-behavioral vulnerabilities that may be associated with social anxiety and contribute to peer maladjustment; (4) social-cognitive vulnerabilities that may be associated with social anxiety and contribute to peer maladjustment; and (5) a person-oriented model that implicates social-cognitive and social-behavioral factors to explain why some socially anxious children have peer problems and others do not.

### *Conceptualizing Social Anxiety*

Anxiety is a normal but aversive emotional state characterized by apprehension or fear in response to perceived threat (Barlow, 1991). The anxiety in social anxiety refers specifically to fear of negative evaluation in real or imagined social situations. For instance, frequently feared social situations in children with social anxiety include public speaking (89%), speaking with peers (approximately 40%), eating in front of others (39%), writing on the blackboard (28%), going to parties (28%), using public bathrooms (24%), and speaking to authorities (21%)

(Beidel, 1991). Socially anxious children report that socially distressful events occur on most days, elicit high levels of anxiety, and result in avoidance about 35% of the time (Beidel, Turner, & Morris, 1999).

At the categorical or diagnostic level, social anxiety disorder has been defined as "a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others" (American Psychiatric Association, 1994, p. 417). A diagnosis is warranted if social fears produce significant distress and impairment in daily functioning. Social anxiety has also been conceptualized along continuous dimensions of behavior (e.g., social avoidance) and affect-cognition (e.g., fear of negative evaluation) (La Greca & Stone, 1993; La Greca & Lopez, 1998).

Researchers have constructed a multidimensional model of social anxiety comprised of several interdependent elements. For example, affective elements of general and social anxiety include nervousness and negative affect (Beidel et al., 1999; Chorpita, 2002) and fear of anxious symptoms (Rabian, Peterson, Richters, & Jensen, 1993; Reiss, Silverman, & Weems, 2001). Physiological elements include hyperarousal in response to stress (Lilienfeld, 1999) and sensitivity to physiological hyperarousal (Reiss et al., 2001). In the cognitive domain, socially anxious children report negative social performance expectations (Spence, Donovan, & Brechman-Toussaint, 1999), threatening attributions in ambiguous social situations (Muris, Merckelbach, & Damsma, 2000), and negative appraisals of their social performance (Cartwright-Hatton, Hodges, & Porter, 2004; Magnusdottir & Smari, 1999; Rheingold, Herbert, & Franklin, 2003). Finally, the behavioral characteristics of socially anxious children include low rates of social initiation and interaction (Spence et al., 1999), deficits in conversational responding (Beidel et al., 1999; Spence et al., 1999), and poor conflict management skills

(Beidel et al., 1999; Johnson, LaVoie, Spenceri, & Mahoney-Wernli, 2001). It is believed that each of these factors are reciprocally influential in the emergence and maintenance of social anxiety (Morris, 2001).

*Developmental Context.* Social anxiety may emerge in concert with normative, converging developments in social cognition and peer relationships. That is, exaggerations or distortions in normative developmental processes—or in the integration of normative developmental processes—may set the stage for increased vulnerability to social anxiety.

Rates of social anxiety increase markedly during the early adolescent years (Beidel & Turner, 1998), with an average age of onset around early to mid adolescence (Beidel & Turner, 1998; Weiss & Last, 2001). Normative changes occur in social cognition and peer relationships during this same developmental period of increased vulnerability to social anxiety, and potentially account for the elevated prevalence during these years. For example, during late childhood and early adolescence, children increasingly evaluate themselves in comparison to their peers rather than to absolute standards (i.e., comparative appraisals) (Costanzo, Miller-Johnson, & Wencel, 1995; Parker, Rubin, Price, & DeRosier, 1995). Related developments in abstract thinking and perspective taking allow children to recognize that other children are also evaluating them, prompting concern with the content and valence of these evaluations (i.e., reflected appraisals) (Costanzo et al., 1995; Crozier & Burnham, 1990). A deviation from normative trends in the valence of comparative and reflected appraisals may place children at risk for the development of social anxiety (Costanzo et al., 1995). As noted, an integral aspect of social anxiety involves fear that social evaluations will be negative.

At the same time that use and awareness of social comparison processes emerge, peers begin to play a prominent role in the lives of children, rivaling and even surpassing the influence

of family relationships in some domains (Rubin, Bukowski, & Parker, 1998). Children spend a substantial amount of time with peers inside and outside of school, and their friends become vital sources of companionship as well as providers of instrumental and emotional support (Parker et al., 1995). Peer relationships, and the values and interests they represent, may also support identity development, a key developmental task of adolescence (Newman & Newman, 2001). The increasing importance and relevance of peer relationships, as well as higher expectations for peer involvement from parents and school personnel, may result in increased motivation to establish friendships and gain peer acceptance during the late childhood and early adolescent years. However, the task of making friends and avoiding peer rebuff may be complicated by the dynamics of the early adolescent social climate (Brown, 1990; Bukowski & Sippola, 2001). Almost one-third of eleven year-olds reported losing a friend over the course of the school year (Wojslawowicz, Rubin, Burgess, Rose-Krasnor, & Booth, in press), and almost two-thirds reported being teased by peers in the previous month (Kanner, Feldman, Weinberg, & Ford, 1987). In addition, hierarchical social networks and emerging social cliques leave many children either alienated or insecure about their social position (Parker et al., 1995). Ethnographic studies indicate that even popular children and members of cliques experience insecurities about maintaining their reputations and social statuses (Adler & Adler, 1995; Eder, 1985). Children who are repeatedly rejected and victimized face a far more intimidating task.

Thus, during the late childhood and early adolescent years, cognitive capabilities support greater self-reflection and social comparison at the same time that peer relationships become increasingly important and complex. In some cases, peers act as supportive companions and facilitate positive identity development; in other cases, however, peers represent sources of insecurity and discomfort (Hodges, Finnegan, & Perry, 1999), with exclusive social networks

and victimization creating a daunting social outlook for some children (Brown, 1990). Concerns about friendships and social position are normal developmental processes that increase during late childhood and early adolescence. However, excessive social distress and fears of negative evaluation can be detrimental to social and psychological adjustment, with long-term negative consequences (Beidel & Turner, 1998; Rubin, Burgess, Kennedy, & Stewart, 2003).

*Social anxiety and maladjustment.* Social anxiety in children has been associated with peer maladjustment, (Flanagan, 2005; Inderbitzen et al., 1997; La Greca & Lopez, 1998; La Greca & Stone, 1993; Morris, 2001; Vernberg et al., 1992), depressed mood (Beidel et al., 1999; Francis, Last, & Strauss, 1992), and school disengagement (Wittchen, Stein, & Kessler, 1999). School maladjustment is a particularly common and troubling feature of childhood social anxiety. In one study of children with a diagnosis of social anxiety disorder, 75% reported no or few friends, 50% were not involved in extracurricular or peer activities, 50% reported that they disliked school, and 10% refused to attend school regularly (Beidel et al., 1999). Socially anxious children report that 60% of the situations that cause them distress occur at school (Beidel & Morris, 1995), and 30% of children who refused to attend school did so because of social fears (Last, Perrin, Hersen, & Kazdin, 1992). In addition to promoting a variety of concurrent adjustment problems, social anxiety places children and adolescents at risk for social and psychological maladjustment in adulthood, including the development of other anxiety disorders, major depression, and substance use disorders (DeWit, MacDonald, & Offord, 1999; Kushner, Sher, & Beitman, 1990; Merikangas et al., 1996; Stein et al., 2001), as well as impaired occupational functioning (Phillips & Bruch, 1988).

Thus, social anxiety has clear significance for social and psychological adjustment. The middle school years, when peers take center stage in the lives of children, appear to be a

sensitive period for the development of social anxiety. Not surprisingly, then, research increasingly implicates peer relationships in the emergence and maintenance of social anxiety.

*Social anxiety as a cause and consequence of peer maladjustment.* A growing body of research provides evidence for an association between child social anxiety and peer maladjustment. For example, in cross-sectional studies of both normative and clinical populations, child social anxiety has been linked with self-reports of limited and low quality friendships, peer rejection, and peer victimization (Beidel et al., 1999; Flanagan, 2005; La Greca & Lopez, 1998; La Greca & Stone, 1993; Vernberg et al., 1992). Social anxiety has also been linked with sociometric ratings of peer rejection and peer victimization (Flanagan, 2005; Inderbitzen et al., 1997; La Greca & Stone, 1993). Anxious children (not socially anxious children specifically) are also less well-liked, more neglected and rejected, and more victimized than their non-anxious peers (Grills & Ollendick, 2002; Straus, Frame, & Forehand, 1987; Straus, Lahey, Frick, Frame, & Hynd, 1988). In addition, in retrospective accounts, socially anxious adults report fewer friends during childhood than non-anxious adults (Rapee & Melville, 1997), and they identify negative social experiences as contributing to the onset of social anxiety (Stemberger et al., 1995).

These findings are generally interpreted as evidence for the impact of peer problems on the emergence, maintenance, and intensification of social anxiety. Although this contention is warranted, it also seems probable that social anxiety would impede children in their attempts to establish positive peer relationships and avoid negative peer experiences. Indeed, a one-year longitudinal study of relocating middle school students provided evidence for a bidirectional relationship between social anxiety and peer maladjustment (Vernberg et al., 1992). In this study, poor quality friendships and victimization experiences prior to relocation predicted higher

levels of social anxiety following relocation; in addition, higher levels of social anxiety prior to relocation predicted fewer interactions with peers and less intimacy and companionship in newly formed friendships following relocation (Vernberg et al., 1992). Several conceptual models offer insights as to how social anxiety may impinge on social cognition and social behavior.

*Cognitive interference models.* One conceptual model providing a potential explanation for the impact of social anxiety on peer maladjustment contends that anxiety interferes with task-focused attention and cognitive processing, and thereby disrupts task performance (Rapee & Heimberg, 1997; Sarason, 1975; Vasey & Daleiden, 1996). According to Rapee and Heimberg's (1997) cognitive-behavioral model of social anxiety, individuals construct a mental representation of themselves as seen by their social audience. In the process of constructing and revising this mental representation, socially anxious individuals preferentially allocate attentional resources to internal and external cues of threat (i.e., cues that they may be evaluated negatively). Internal cues of threat may include physiological arousal (e.g., blushing, sweating), negative cognitions (e.g., negative social performance expectations), and information retrieved from long-term memory (e.g., recollection of general appearance, prior negative experience in similar social situations). External cues of threat may include indicators of perceived negative evaluation from the audience (e.g., frowns, laughter, signs of boredom). For socially anxious individuals, exaggerated perceptions of internal and external cues of threat disproportionately influence the mental representation of self as seen by the audience, such that they are likely to evaluate their social performance more negatively than their audience (Cartwright-Hatton, Hodges, & Porter, 2004; Rapee & Lim, 1992; Stopa & Clark, 1993).

Preferential allocation of attentional resources to cues of threat also diverts attention from task-relevant stimuli (e.g., social interaction) to task-irrelevant stimuli (e.g., self-focused fears of

negative evaluation) (Vasey & Daleiden, 1996). This proposition is supported by evidence that socially anxious individuals take longer to color-name negative evaluation words (e.g., stupid) than neutral words in modified Stroop tasks, whereas non-socially anxious individuals do not show this discrepancy in color-naming (Hope, Rapee, Heimberg, & Dombeck, 1990; Mattia, Heimberg, & Hope, 1993; McNeil, Ries, et al., 1995). In addition, several studies with analogue social interaction tasks find that socially anxious individuals devote reduced attention to the conversational partner and heightened attention to self-focused fears of negative evaluation (Johnson & Glass, 1989; Hope, Heimberg, & Klein, 1990; Simonian, Beidel, Turner, Berkes, & Long, 2001), as will be reviewed in further detail below.

In addition to constructing a mental representation of self during social interaction, individuals simultaneously formulate a prediction of the audience's expected standard of social performance, and compare this expected standard to their mental representation of their own performance as seen by the audience (Rapee & Heimberg, 1997). Some research suggests that individuals with social anxiety believe that their audience expects a higher standard than non-socially anxious individuals, although other studies find no differences in expected standards between socially anxious individuals and controls (Wallace & Alden, 1991, 1995). However, as discussed, there is strong evidence to suggest that socially anxious individuals exhibit overly negative evaluations of their own social performance (Cartwright-Hatton, Hodges, & Porter, 2004; Rapee & Lim, 1992; Stopa & Clark, 1993), contributing to a discrepancy between expected audience standards and mental representations of performance. This discrepancy provides the basis for their perceived likelihood of negative evaluation. With increased perceived likelihood of negative evaluation, levels of social anxiety are believed to increase which, in turn, triggers cognitive, behavioral, and physiological symptoms of anxiety (Rapee &

Hiemberg, 1997). A major implication of this model for the proposed study is that social anxiety may contribute to peer maladjustment by diverting attention from social interaction to self-focused fears of negative evaluation, and thereby disrupt competent social behavior.

A related model concerning the impact of social anxiety on peer adjustment posits a similar mechanism for disrupted social behavior (negative cognitions and diverted attention), yet emphasizes relationship preservation rather than impression management as the source of cognitive interference. Baumeister and Leary (1995) contend that establishing positive interpersonal relationships is a fundamental human motive, grounded in the evolutionary natural selection of individuals inclined toward sociability. Thus, according to Leary (2000), individuals scan the environment for cues of "perceived relational devaluation" (e.g., interpersonal cues of disinterest, disapproval, or rejection) at the preattentive level, allowing immediate recognition and response to such threats to positive interpersonal relationships. Leary (2000) proposes that perceived relational devaluation invariably produces negative social emotions, such as social anxiety, jealousy, and sadness. Perceived relational devaluation and corresponding negative social emotions may then reduce focus on the ongoing social interaction and promote negative evaluations of the self and situation. Negative cognitions and distracted attention may then interrupt ongoing social behavior and contribute to poor social performance.

Despite the potential negative implications of human sensitivity to perceived relational devaluation, this sensitivity also contributes to readiness and motivation to respond and repair such threats. Thus, the "sociometer," or psychological device that tracks cues of relational devaluation, serves an important and adaptive function that may protect the stability of positive relationships, yet when hyper-responsive or dysregulated, may also damage interpersonal functioning and relationships (Leary, 2000). An important implication of this model for the

present study is that social anxiety may contribute to peer maladjustment through its influence on negative affect and cognitions, potentially promoting the expression of negative affect and disrupting ongoing social behavior.

*Social withdrawal and skill deficit model.*  Another conceptual model emphasizes the direct impact of socially anxious feelings on social behavior.  Rubin and colleagues have advanced a developmental model in which social withdrawal in early childhood increases the risk for social skill deficits and peer maladjustment (Rubin & Asendorpf, 1993; Rubin et al., 2003).  This developmental model contends that young children with temperamental vulnerabilities, such as behavioral inhibition, initially experience psychological and physiological discomfort in social situations, which leads them to avoid social interaction (Rubin, Burgess, & Hastings, 2002).  A negative developmental cycle may ensue, as withdrawal from social interaction during early childhood limits important socialization opportunities, and thereby may impede the normative development of social cognition and social skills.  Social skill deficits may then elicit negative peer reactions which, in turn, perpetuate further social withdrawal and intensify social anxiety (Nelson, Rubin, & Fox, in press).  This cycle may be sustained and strengthened if anxiety decreases as a result of social avoidance because such negative reinforcement increases the likelihood of subsequent avoidance and withdrawal (Rubin, Burgess, & Coplan, 2002).

A major implication of this developmental model for the present study is that social anxiety may contribute to peer maladjustment by interfering with normative peer interaction, through which social cognition is organized and social skills are learned.  That is, children with social anxiety may fail to develop normative social-cognitive and social-behavioral skills, and thereby encounter difficulties gaining peer acceptance.  In addition, social withdrawal itself may

elicit peer rejection and victimization, particularly during the late childhood and adolescent years when it become increasingly non-normative (Rubin et al., 2001). A substantial body of research provides support for this model, including evidence for links between social withdrawal and poor perspective-taking and interpersonal problem-solving skills (Adalbjarnardottir, 1995; Bowker, Bukowski, Hymel, & Sippola, 2000; LeMare & Rubin, 1987), low assertiveness (Rubin, Daniels, & Bream, 1984), negative appraisals of social competence (Bowker et al., 2000; Rubin & Burgess, 2001), and peer rejection (Boivin, Hymel, & Bukowski, 1995; Rubin, Chen, & Hymel, 1993). Interestingly, although most withdrawn children report having mutual friendships, even these friendships are viewed as lacking in fun, intimacy, and validation (Rubin, Wojslawowicz, Burgess, Rose-Krasnor, & Booth, 2004).

The models above are not mutually exclusive. Each provides one intriguing perspective on how social anxiety may contribute to peer maladjustment. Furthermore, whether the emphasis is on social skill deficits per se or social-behavioral disruption due to affective and cognitive interference, each model suggests that social anxiety impinges on social behavior, a proximal determinant of peer response (Bierman, 2004; Coie, 1990). The following sections will address social-behavioral and social-cognitive vulnerabilities that are hypothesized correlates of social anxiety and factors that may account for the link between social anxiety and peer maladjustment.

***Social Anxiety, Social Behavior, and Peer Maladjustment***

Research provides compelling evidence that children's social behaviors are often the most important proximal determinants of peer responses (Bierman, 2004; Coie, 1990). For example, behavioral assessments predict subsequent social acceptance in play groups (e.g., Dodge, 1983), and social competence training programs have shown corresponding

improvements in social behavior and positive peer responses (e.g., Bierman & Furman, 1984; Bierman, Miller, & Stabb, 1987). Prosocial behaviors (e.g., cooperative, friendly, and helpful behaviors) and problem-solving skills generally elicit positive peer responses and result in peer acceptance and friendship (Coie, Dodge, & Kupersmidt, 1990; Newcomb, Bukowski, & Patee, 1993). In contrast, withdrawn, awkward, disruptive, and aggressive behaviors generally elicit negative peer responses and predict peer rejection and victimization (Bierman, Smoot, & Aumiller, 1993; Coie et al., 1990; Newcomb et al., 1993). As such, social behaviors are plausible and proximal processes by which social anxiety may contribute to peer maladjustment.

Existing research suggests that socially anxious children exhibit social-behavioral skill deficits. For example, children with social anxiety disorder exhibited lower levels of social initiation and interaction during school observations, and shorter response length during conversation role-plays, as compared to their nonanxious peers (Spence et al., 1999). Furthermore, school-based observations indicated that socially anxious children were less likely to obtain positive outcomes from their interactions with others, as compared to nonanxious peers (Spence et al., 1999). Socially anxious children were also rated as less socially skilled and more anxious than their nonanxious peers in read-aloud and social interaction tasks, and they exhibited longer speech latencies during the social interaction task (Beidel et al., 1999). Children with high levels of social anxiety also demonstrate conflict avoidance and low assertiveness in social problem situations (Beidel, 1991; Johnson et al., 2001).

Thus, the existing literature finds that children with high levels of social anxiety interact less with peers, exhibit less fluency in conversation, and elect avoidant and non-assertive strategies for dealing with social problem situations. Additional social behaviors (e.g., prosocial-cooperative behaviors, social interaction skills during conversation) have not been examined

empirically, and no social behaviors have been included in a model that attempts to account for the link between social anxiety and peer maladjustment. That is, no study has examined the extent to which social anxiety disrupts competent social behavior which, in turn, contributes to peer maladjustment. The present study examined two classes of social behaviors as potential mediators linking social anxiety with peer maladjustment: (1) general and easily observable adaptive social behaviors at school (including withdrawn and prosocial-cooperative behaviors), as reported by teachers, and (2) social interaction skills during a conversation task (including sensitive verbal responding and positive affective expression), as coded by independent observers.

*Adaptive Social Behaviors*

Children with elevated social anxiety may have trouble displaying high rates of adaptive social behaviors, including social participation in the first place and prosocial-cooperative and problem-solving behaviors once engaged, and thereby experience difficulties with peers. Indeed, social participation and prosocial-cooperative behavior have been linked with peer acceptance and represent important dimensions of social competence (Bierman, 2004; Newcomb et al., 1993).

*Social withdrawal.* Social withdrawal refers to isolating oneself from social interaction and peers (Rubin & Asendorpf, 1993), and more specifically to "the consistent (across situations and over time) display of solitary behavior when encountering familiar and/or unfamiliar peers" (Rubin & Burgess, 2001). Social withdrawal is one component of the diagnostic criteria for social anxiety disorder (American Psychiatric Association, 1994, p. 417), and a substantial body of research has documented that socially anxious children show elevated rates of socially withdrawn behavior (Rubin & Burgess, 2001). For example, socially anxious children initiate

fewer social interactions, interact less with peers, and respond with fewer words, as compared to non-anxious children (Beidel et al., 1999; Spence et al., 1999).

In addition to withdrawing from social interaction altogether, socially anxious children may exhibit subtle withdrawal behaviors during social interaction, such as avoiding eye contact and limiting conversation (Rapee & Heimberg, 1997). Overt and subtle forms of social withdrawal may be sustained through negative reinforcement. That is, avoidance of anxiety-provoking social situations is rewarded by reduced anxiety in the short-term, despite the potential longer-term consequences. In this way, social withdrawal may become increasingly automatic and resistant to change over time for children with social anxiety.

Social withdrawal itself has been linked with peer rejection (e.g., Newcomb et al., 1993) and social skill deficits, including poor interpersonal problem-solving skills and low assertiveness (Adalbjarnardottir, 1995; Bowker et al., 2000). Socially withdrawn children make limited attempts to gain peer acceptance and establish friendships, and they often experience high levels of social anxiety (Rubin & Asendorpf, 1993). Their inhibited and reticent behavior may also mark them as easy targets for victimization by peers attempting to establish social power and dominance (Hodges, Malone, & Perry, 1997). Indeed, children who display internalizing problems are viewed by aggressors as likely to provide the intended response to victimization and unlikely to defend themselves (Hodges & Perry, 1999). In turn, it is easy to imagine how peer victimization would exacerbate the social avoidance and anxious affect that may have invited peer victimization in the first place. Although social withdrawal has not been linked consistently with peer rejection during the early and middle childhood years, it is clearly linked with peer rejection and victimization during the late childhood and early adolescent years,

perhaps because it becomes increasingly evident and non-normative during these years (Boivin, Hymel, & Bukowski, 1995; Rubin, Chen, & Hymel, 1993; Younger, Gentile, & Burgess, 1993).

*Prosocial-cooperative behavior.* The peer relations of socially anxious children may also suffer due to decreased prosocial-cooperative behaviors, including friendly, helpful, and problem-solving behaviors, which are associated with peer acceptance and positive peer responding (Coie, 1990; Newcomb et al., 1993). Conceptually, socially anxious children may exhibit lower levels of prosocial-cooperative behavior, due, in part, to limited opportunities to learn prosocial-cooperative and problem-solving skills through social interaction. In addition, socially anxious children may find it difficult to exhibit the prosocial-cooperative skills they do possess, due to their avoidance of social interaction in the first place as well as the fear and negative cognitions they experience once engaged in social interaction. Peers view children who exhibit low levels of prosocial-cooperative behavior as unpleasant interactive partners, and furthermore, react negatively to their failures to solve problems in calm and mutual ways (Eisenberg & Fabes, 1998). Thus, decreased prosocial-cooperative behavior among socially anxious children may also contribute to their peer problems. However, this hypothesis has not yet been examined empirically.

*Social Interaction Skills*

In addition to increasing withdrawal and decreasing prosocial overtures, social anxiety may impede sensitive verbal responding and positive affective expression, social interaction skills that require sustained interpersonal attention and affect regulation.

*Sensitive verbal responding.* As defined in the present study, sensitive verbal responding involves demonstrating attention and interest through flexible and validating responses during conversation. Behavioral examples may include asking follow-up questions, identifying

common ground, and balancing the focus on self and other during conversation. Sensitive verbal responding may be particularly important for establishing and maintaining friendships during the early adolescent years, when friendships increasingly involve intimacy and self-disclosure and thus require sensitivity and reciprocity (Parker et al., 1995; van Lieshout, Cillessen, & Haselager, 1999).

It is possible that socially anxious children exhibit deficits in sensitive verbal responding in the context of conversation—a social task that demands a high level of attention to a conversation partner and requires flexible responding. Indeed, the cognitive interference perspective on anxiety contends that socially anxious individuals devote attentional resources to self-focused fears of negative evaluation at the expense of attention to social interactions (Rapee & Heimberg, 1997; Leary, 2000; Vasey & Daleiden, 1996). This pattern of self-focused, negative thinking has been termed "anxious self-preoccupation" (Sarason, 1975). Additional research also suggests that anxiety promotes allocation of attentional resources to cues of threat, and thereby reduces the available space in working memory for processing task-relevant information (Derryberry & Tucker, 1994). Such demands on working memory may be expected to complicate the task of maintaining a coherent and organized social interaction.

In one study, socially anxious adults reported more self-focused attention and recalled less about their partners following social interactions. Furthermore, their self-focused attention was negatively associated with recall of information about their partners (Hope, Heimberg, & Klein, 1990). In a study of heterosocial anxiety among adolescent boys, subjects who reported more confederate- and task-focused thoughts made fewer pauses, fewer unelaborated responses, and asked more on-topic questions, as compared to those who reported fewer confederate- and task-focused thoughts (Johnson & Glass, 1989). Simonian, Beidel, Turner, Berkes, and Long

(2001) examined facial affect recognition, a potentially important component of sensitive interpersonal responding, among socially anxious children and their nonanxious peers. Children with social anxiety committed more errors in labeling facial affect (e.g., happy, sad, disgust) than their nonanxious peers. Furthermore, the combination of group membership (i.e., social anxiety versus control) and self-reported anxiety during the facial affect recognition task accounted for 49% of the variance in facial affect recognition (Simonian et al., 2001).

Thus, sensitive verbal responding may present a heightened challenge for socially anxious children who face the "multi-task paradigm" of simultaneously attending to their partner and evaluating their own performance through the eyes of their partner (Rapee & Heimberg, 1997). Indeed, socially anxious children report that unstructured encounters with peers are highly distressing (Beidel & Morris, 1995). No research has examined the extent to which sensitive interpersonal responding may account for the link between social anxiety and peer maladjustment, but it is an intriguing area of study given its relevance to well-established social-cognitive features of social anxiety (e.g., attentional biases), as discussed below.

*Positive affective expression.* Positive and appropriate affective expression is another dimension of social competence. As described in their model of affective social competence, Halberstadt, Denham, and Dunsmore (2001) proposed that sending affective messages involves identification of which message to send, sending a message consistent with the demands of the situation, and managing delivery of the message. Positive affective expression communicates affiliative intent to others and engenders positive perceptions by others (Sroufe, Schork, Motti, Lawroski, & LaFreniere, 1984). Research has shown that children who are more positively expressive and adept at sending affective messages are better liked by their peers than children who are negatively expressive (Halberstadt et al, 2001; Sroufe, 1996). In contrast, neutral or

anxious affective expression may communicate disinterest or hostility toward others. For example, Hubbard (2001) found that rejected children expressed more anger and nonverbal unhappiness than their non-rejected peers. In addition, as noted, an inhibited and anxious affective appearance may mark children as easy and rewarding targets for victimization by peers (Hodges et al., 1997; Hodges & Perry, 1999).

Socially anxious children may have trouble displaying a positive and confident affective orientation, and thereby turn away potential friends. They are believed to experience negative affect in social interactions due to the negative impressions they expect to make (Leary, 2000). The *experience* of negative affect in social interactions leaves socially anxious children susceptible to the *expression* of less positive or more negative affect. Indeed, Beidel et al. (1999) found that socially anxious children appeared more anxious during social interaction than did normal controls. Similarly, Cartwright-Hatton et al. (2003) found that higher levels of child social anxiety were associated with higher child and observer ratings of nervous appearance during a public speaking task. In addition, recent research with rejection-sensitive and aggressive-rejected children found that these children have difficulty shifting attention from negative affect and information to positive affect and information (Ayduk, Mendoza-Denton, Mischel, Downey, Peake, & Rodriguez, 2000; Wilson, 2003). This attention shifting difficulty has not been examined among socially anxious children specifically, yet it is possible that socially anxious children would exhibit similar difficulties, given evidence for their negative cognitions and attentional biases to cues of threat. Thus, reduced positive affective expression is another social interaction skill that may account for the link between social anxiety and peer maladjustment, by making children less enjoyable to interact with and potential targets of victimization.

No study, to date, has examined verbal interaction and affective dimensions of social competence together as an empirical correlate of social anxiety, and no study has determined the extent to which general adaptive social behaviors at school or social interaction skills during conversation account for the link between social anxiety and peer maladjustment. Thus, despite the apparent validity of developmental models and the early success of social skills training-based interventions (Beidel, Turner, & Morris, 2000; Spence, Donovan, & Brechman-Toussaint, 2000), little is known about the processes by which socially anxious children experience peer maladjustment. Social-cognitive vulnerabilities with purported links to social anxiety may also impart susceptibility to social-behavioral skill deficits, and thereby contribute to the peer problems of children with social anxiety.

***Social Anxiety, Social Cognition, and Peer Maladjustment***

Child social anxiety has been linked with a variety of negative social cognitions, including anticipation of negative social performance and outcomes (Spence et al., 1999), low perceived competence in social situations (Chansky & Kendall, 1997; Smari, Petursdottir, & Porsteinsdottir, 2001), negative cognitions during social-evaluative tasks (Spence et al., 1999), attentional biases to cues of threat (Vasey & Daleiden, 1996), threatening interpretations of ambiguous social events (Muris et al., 2000), negative appraisals of social performance (Cartwright-Hatton et al., 2004), and high likelihood and cost of negative social events (Magnusdottir & Smari, 1999; Rheingold, Herbert, & Franklin, 2003). Interestingly, research suggests that the cognitive biases of children with social anxiety are specific to the social domain (Magnusdottir & Smari, 1999; Smari et al., 2001; Spence et al., 1999). Social performance expectations, in particular, may be correlates of social anxiety with implications for social behavior and peer adjustment.

*Social performance expectations.*  Social performance expectations involve predictions of social success or failure, implicating expected behavioral performance and peer response. Theorists have proposed that a central feature of social anxiety is the desire to make a positive impression on others, yet a corresponding doubt that one will perform in a way that achieves the desired outcome.  The discrepancy between desired impression and expected impression is believed to contribute to feelings of social anxiety and disrupt behavior (Costanzo et al., 1995; Leary & Kowalski, 1995).

Negative social performance expectations may influence both approach-avoidance tendencies and behavior in ongoing social interaction.  As internal cues of threat, negative social performance expectations may prompt avoidance or draw attention away from social interaction (Rapee & Heimberg, 1997; Vasey & Daleiden, 1996), and thereby compromise social skill. Although previous research has not addressed the link between social performance expectations and social behavior among socially anxious children specifically, negatively biased social information processing has been linked with impaired social behavior and peer difficulties in experimental research (e.g., Rabiner & Coie, 1989) and theoretical models (Crick & Dodge, 1994; Lemerise & Arsenio, 2000; Rubin & Krasnor, 1986).

A large body of research documents the relation between anxiety and negative social performance expectations among adults, yet fewer studies have examined the social performance expectations of socially anxious children.  Spence et al. (1999) found that children (age 7 – 14) with a diagnosis of social anxiety reported lower social performance expectations than nonanxious peers prior to social-evaluative tasks (i.e., role-play, read-aloud).  Smari et al. (2001) found a moderate correlation ($r = .42$) between adolescents' social anxiety and perceived social competence.  Likewise, Chansky and Kendall (1997) found that children with anxiety disorders

reported lower perceived social competence than nonanxious peers; in addition, children with higher scores on the Social Anxiety Scale for Children reported higher expectations of dislike and rejection by unfamiliar peers. Expectations of social difficulty and failure, as documented by these studies, may promote avoidant behavior and disturbed social interaction skills, both of which are likely to impact peer responses and peer relationships.

Whereas some research suggests that the negative social performance expectations of individuals with social anxiety reflect accurate appraisals of social skill deficits (e.g., Stopa & Clark), other research suggests that these negative expectations reflect distorted evaluations of performance, existing in the absence of social skill deficits or as exaggerations of the limited skill deficits that do exist (e.g., Rapee & Heimberg, 1997). In part, this debate may hinge on the conceptualization of social skill. Whereas individuals with social anxiety may not lack an appropriate behavioral repertoire for social interaction (e.g., making eye contact, identifying common ground), the ability to execute skilled behaviors flexibly in changing social situations and to elicit positive peer responses requires regulation of emotion and cognition (Bierman, 2004; Sroufe, 1996). As a result of affective and cognitive interference (Leary, 2000; Rapee & Heimberg, 1997), the social difficulties of socially anxious children may lie in the performance of socially skilled behaviors in challenging social situations. Due to limited social interaction, however, it is certainly possible that even the behavioral repertoire of children with social anxiety is limited.

As discussed in further detail below, studies with socially anxious children suggest that performance in social interaction is compromised (e.g., Beidel et al., 1999; Spence et al., 1999), although some conflicting evidence does exist (e.g., Cartwright-Hatton, Tschernitz, & Gomersall, 2005). The available research on social-cognitive expectations of children with

social anxiety also finds evidence for negative social performance and outcome expectations

(Smari et al., 2001; Spence et al., 1999). The existing literature has not yet clarified whether the

negative social expectations of socially anxious children reflect accurate or exaggerated

evaluations of their social competence. Nonetheless, research on links between cognition and

behavior suggest that the disruptive impact of negative cognitions on behavior may be difficult to

overcome (Rapee & Heimberg, 1997).

Few studies have examined the social performance expectations of socially anxious

children; even fewer, if any, studies have attempted to link their social performance expectations

with social behavior and peer outcomes. Likewise, little, if any, research has explored coping

strategies as correlates of child social anxiety and factors influencing social behavior and peer

adjustment.

*Coping strategies.* Feelings of stress and anxiety direct attention toward perceived threat

and options for coping (Compas & Boyer, 2001; Derryberry & Tucker, 1994). Effective coping

may protect children from otherwise debilitating anxiety, yet only a few studies have examined

coping strategies among children with anxiety disorders. Southam-Gerow and Kendall (2000)

found that children with anxiety disorders exhibited a poorer understanding of strategies for

hiding and changing emotions than their non-anxious peers. Suveg and Zeman (2004) found that

children with anxiety disorders reported fewer adaptive emotion regulation strategies (e.g.,

"When I am sad, I do something totally different until I calm down") and more dysregulated

strategies (e.g., "I say mean things to other when I am mad") for coping with feelings of sadness,

worry, and anger, as compared to non-anxious children. In addition, anxious children reported

lower confidence in their ability to regulate these feelings than their non-anxious peers (Suveg &

Zeman, 2004). These studies provide preliminary evidence that anxious children employ

ineffective coping strategies, but existing research does not provide a clear or comprehensive picture of coping among socially anxious children.

In general, however, research with children and adolescents suggests that problem-focused coping strategies are associated with decreased internalizing and externalizing problems, including decreased trait anxiety (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Compas, Malcarne, & Fondacaro, 1988; Fields & Prinz, 1997; Olah, Torestad, & Magnusson, 1989; Sandler, Tein, & West, 1994). Problem-focused coping strategies are attempts to manage or modify the external source of stress itself (Lazarus & Folkman, 1984), and examples include problem-solving and information-seeking. In contrast, emotion-focused and escape-avoidant coping strategies appear to be associated with increased internalizing and externalizing problems, including increased trait anxiety (Compas et al., 2001; Compas et al., 1988; Fields & Prinz, 1997; Olah et al., 1989; Sandler et al., 1994). Emotion-focused coping strategies are attempts to reduce or regulate the emotional state that is the result of a stressor (Lazarus & Folkman, 1984), and examples include emotional venting and denial. In addition to linkages with psychological adjustment, research suggests that task-focused coping strategies facilitate performance in anxiety-provoking situations, whereas escape-avoidant strategies impede performance (Vasey & Daleiden, 1996).

Despite the relative wealth of research on problem- versus emotion-focused coping strategies and the straightforward heuristic value of this and similar dichotomous representations (e.g., approach/avoidance, active/passive), recent work has called this conceptual model into question. For example, Compas et al. (2001) contend that a simplistic representation of coping across children and circumstances ignores the complex ways in which children cope with diverse stressors, and masks important differences in the nature and function of coping among children.

According to their more differentiated model, Compas et al. (2001) propose that coping may be represented as voluntary or involuntary, and each of these dimensions may be further distinguished along an engagement-disengagement dimension. Within the voluntary coping domain, engagement coping strategies encompass both primary and secondary control strategies. Primary control strategies are directed toward influencing objective events or conditions (e.g., problem-solving) or directly regulating one's emotions (e.g., regulated emotional expression). Secondary control strategies involve attempts to adapt to the environment, such as through cognitive restructuring or acceptance of circumstances. Disengagement coping strategies are directed away from the stressor or one's thoughts and emotions about the stressor. Examples of disengagement coping strategies include avoidance, denial, and wishful thinking.

Research increasingly supports this model of coping, with numerous studies linking engaging coping strategies with decreased internalizing and externalizing problems, and disengaging coping strategies with increased internalizing and externalizing problems (Compas et al., 2001). Fewer studies have examined links between coping strategies and social competence, but the existing studies show a similar pattern of results, with engaging coping strategies associated with increased social competence and disengaging coping strategies associated with decreased social competence (Compas et al., 2001). For example, Eisenberg et al. (1997) found associations between constructive coping (e.g., instrumental strategies, support-seeking, positive cognitive restructuring) and teacher reports of increased social competence, as well as associations between destructive coping (e.g., emotional venting, avoidance) and parent and teacher reports of decreased social competence.

In their review, Compas et al. (2001) concluded that the engaging coping strategies most consistently linked with better adjustment were problem-solving, cognitive restructuring, and

positive reappraisals of the stressor. Interestingly, their review of the literature also generated some skepticism about previous findings linking emotion-focused coping strategies with psychological maladjustment. Compas et al. (2001) reviewed findings suggesting that emotion-focused coping is not necessarily problematic—and may even promote positive adjustment under some circumstances. Instead, they hypothesized that responses involving disengagement with the stressor or emotions, negative cognitions about the self and situation, and unregulated venting of emotions account for previous findings linking emotion-focused coping with psychological maladjustment (Compas et al., 2001).

Indeed, an important caveat to findings linking general coping categories (e.g., engagement coping) with psychosocial outcomes is that the effectiveness of coping strategies may vary depending upon the situation in which they are implemented and the quality of implementation (Compas et al., 2001; Fields & Prinz, 1997). Likewise, according to Connor-Smith et al. (2000), "An understanding of response effectiveness cannot be separated from the nature of the stressor, and no pattern of responses to stress is assumed to be universally helpful or detrimental across situations." Indeed, some empirical evidence suggests that coping effectiveness is moderated by factors such as the nature and context of the stressor. For example, research has shown that controllability of the stressor governs the relative effectiveness of different coping strategies to some degree. The occurrence of interparental conflict and painful medical procedures, for example, may lie beyond the control of children exposed to them, and thereby, attempts to alter the source of the problem (i.e., problem-focused coping) may be futile and even harmful (O'Brien et al., 1997; Rudolph, Dennig, & Weisz, 1995). Despite these exceptions, little is known about the fit between characteristics of stressors and children's attempts to cope with them (Fields & Prinz, 1997; Rudolph et al., 1995). This gap in knowledge

is due, in part, to the tendency of research to examine reports of coping in hypothetical situations or in-general (Compas et al., 2001), limiting the specification of coping in response to particular types and contexts of stress.

Vasey and Daleiden (1996) provide some insight as to how socially anxious children may cope with intimidating social situations on the basis of their research examining task performance among anxious children. These authors contend that the choice of coping strategies for anxious children is determined primarily by their emotional state, rather than the specific demands of the situation. Extrapolating from their findings, children with social anxiety may be expected to choose coping strategies that provide immediate emotional relief (e.g., avoidance), yet these coping strategies may paradoxically create other problems such as reduced attention to social interaction or heightened anxiety in subsequent social situations. For example, whereas self-directed "engagement" strategies such as distraction and self-talk may serve the purpose of reducing anxiety, their use during social interaction may also unwittingly distract attention from the social interaction and disrupt competent social behavior. Indeed, some research suggests that self-directed coping cognitions themselves may divert attention and impair performance for anxious children. For example, in two similar studies, anxious children reported more coping self-statements than non-anxious children, and furthermore, coping self-statements were negatively associated with math test performance (Prins, Groot, & Hanewald, 1994; Zatz & Chassin, 1985). Thus, self-directed coping cognitions themselves may absorb attention, and certain kinds of coping strategies (e.g., distraction) may further direct limited attention away from social interaction. In contrast, problem-directed "engagement" strategies such as focusing on an interaction partner or generating positive appraisals of the situation may direct attention toward the social interaction and thereby promote competent social behavior. Thus, it is possible

that subtypes of engagement coping strategies (i.e., self- versus problem-directed) are differentially effective for on-line coping with social anxiety (i.e., coping with a proximal or ongoing stressor) as compared to general coping with anxiety (i.e., coping with a distal or past/anticipated stressor).

### *Variability in Peer Adjustment among Socially Anxious Children*

There is reason to expect linear relations among social anxiety, social-behavioral and social-cognitive vulnerabilities, and peer maladjustment. However, a person-oriented model in which children are grouped according to their social anxiety and positive or negative peer status may have more explanatory power, particularly for a subclinical sample. Indeed, the existence of heterogeneity within psychological disorders is a basic tenet of developmental psychopathology, and anxiety disorders appear to be consistent with this model of heterogeneity (see Vasey & Dadds, 2001). The social functioning and peer experiences of children at risk for social anxiety may be characterized by heterogeneity as well.

Whereas compelling evidence links social anxiety and peer maladjustment, not all socially anxious children experience low levels of peer acceptance or suffer victimization by peers. Indeed, the findings of several studies offer evidence for variability in peer adjustment of children with social anxiety. For example, one study of elementary children found that rejected children were no more socially anxious than average children, and that rejected and average children were more socially anxious than neglected children (Crick & Ladd, 1993), suggesting that a significant subgroup of socially anxious children may attain average peer status despite their social concerns. Chansky and Kendall (1997) found that anxious children were just as likely to have a best friend as were controls, though they had fewer friends overall. In addition,

Strauss et al. (1988) found that anxious children had neglected sociometric status only when their anxiety was comorbid with depression.

In addition to the available empirical evidence, there are at least two other reasons to expect heterogeneity in the peer adjustment of socially anxious children. First, socially anxious children may be more motivated than children who are less socially oriented to gain acceptance and positive evaluation from their peers. In addition, according to Leary (2000), negative social emotions elicited by perceived relational devaluation motivate responses to repair damaged relationships or build alternative relationships. Thus, whereas their motivation for positive evaluation and acceptance may become overbearing and disrupt social performance, socially anxious children who are better able to manage arousal and emotion in evaluative situations may enhance their social performance as a result of increased motivation for positive evaluation. Second, due to the potentially intimidating nature of the middle school peer world, it is not unreasonable to expect that social anxiety may reach risky levels in the absence of social-behavioral skill deficits or peer maladjustment. Ethnographic studies have illustrated a process by which adolescents generate resentment from unpopular adolescents as they climb to the top of the social hierarchy (Adler & Adler, 1995; Eder, 1985). Though popular, the undercurrent of resentment from some peers and their observations of other children's social failures foster their anxiety about peer perceptions and social status (Adler & Adler, 1995; Eder, 1985).

It is likely that the adjustment outcomes of socially anxious children are worse when their feelings of social anxiety are compounded by peer problems, particularly peer victimization (Egan & Perry, 1998). Evidence that some socially anxious children establish positive peer relationships raises questions regarding the protective factors that may enable them to remain socially competent, despite feelings of self-doubt and worry. Waters and Sroufe (1983) defined

the competent individual as "one who is able to make use of environmental and personal resources to achieve a good developmental outcome." Some socially anxious children may be able to manage their negative cognitions and organize their social behavior in a way that minimizes the external visibility and negative social impact of their anxious feelings. For example, by focusing on a conversation rather than their anxious thoughts and feelings, some children may reduce self-focused fears of negative evaluation and display more sensitive social interaction skills. Furthermore, socially anxious children may simultaneously validate their peers and remove social-evaluative pressure from themselves by asking questions, identifying common ground, and otherwise directing attention toward their peers during interactions.

Apparently, even though they are equally anxious about peer responses, some children are able to keep their anxiety from disrupting their social interactions. Strategies for coping with social anxiety may be an important protective factor for these children, buffering them from the deleterious effects of anxiety on their social behavior and peer relationships. That is, although self-focused fears of negative evaluation associated with social anxiety can divert attentional resources away from social interaction and damage social performance (Vasey & Daleiden, 1996), some children may have effective coping strategies that allow them to preserve their social attention and social performance. In addition, socially anxious children may find some social behaviors more feasible and effective in eliciting positive peer responses than others.

### *The Present Study*

Social anxiety and peer problems each alone place children at significant risk for psychosocial maladjustment; their combination most likely exacerbates this risk. Social anxiety and peer maladjustment are often concomitant, and the existing literature provides evidence for a feedback cycle in which they reciprocally intensify one another. Despite general supporting

evidence for the feedback cycle and associated risks, little is known about the processes by which social anxiety and peer maladjustment impact one another.

The present study was concerned specifically with the purported pathway from social anxiety to peer maladjustment. Theorizing and the available research implicate social cognition and social behavior as potential mediators of the link between social anxiety and peer maladjustment. However, the breadth and depth of social-cognitive and social-behavioral features examined has been limited, and no study has tested whether social-cognitive and social-behavioral factors account for the association between child social anxiety and peer maladjustment. Thus, a study is warranted to examine (1) social-cognitive and social-behavioral correlates of child social anxiety and peer adjustment, (2) the extent to which social-cognitive and social-behavioral vulnerabilities account for the link between social anxiety and peer maladjustment, and (3) whether these factors differentiate subgroups of socially anxious children with and without peer problems.

A preliminary goal of the present study was to replicate prior findings linking child social anxiety with peer maladjustment. It was anticipated that child social anxiety would be associated with decreased peer acceptance and increased peer victimization. As an exploratory aim, the present study also investigated the role of gender as a correlate and moderating variable in analyses predicting peer maladjustment. One existing study found that social anxiety was more strongly associated with limited number and quality of close friendships among girls as compared to boys (La Greca & Lopez, 1998). Given the lack of prior research examining gender differences in this regard, however, specific hypotheses were not generated and analyses must be considered exploratory.

The first major goal of the present study was to examine social behaviors as correlates of social anxiety and peer adjustment. It was anticipated that adaptive social behaviors in the school context and social interactions skills in an analogue conversation task would be linked with increased peer acceptance and decreased peer victimization. It was also expected that social anxiety would impart vulnerability to social-behavioral skill deficits, as reflected in its associations with decreased adaptive social behaviors and decreased social interaction skills.

The second major goal of the present study was to examine social-cognitive factors as additional vulnerabilities to social-behavioral skill deficits and peer maladjustment. It was anticipated that decreased social performance expectations and increased self-directed coping strategies (and decreased problem-directed coping strategies) would be associated with social-behavioral skill deficits and peer maladjustment. It was also expected that social anxiety would be linked with these social-cognitive vulnerabilities.

The third major goal of the present study was to examine more inclusive regression models with direct and mediated pathways linking social anxiety with (a) decreased peer acceptance and (b) increased peer victimization. It was hypothesized that social anxiety and associated social-cognitive vulnerabilities (decreased social performance expectations and increased self-directed coping strategies) would be linked with social-behavioral vulnerabilities (decreased adaptive social behaviors and decreased social interaction skills) which, in turn, would be linked with peer maladjustment (decreased peer acceptance and increased peer victimization) (see Figure 5). As shown in Figure 5, it was expected that adaptive social behaviors and social interaction skills would mediate pathways linking social anxiety and social-cognitive vulnerabilities with peer maladjustment.

The fourth major goal of the present study was to examine links among social-cognitive and social-behavioral factors and peer adjustment more specifically for a subsample of children with elevated social anxiety.  It was hypothesized that subgroups of socially anxious children would exist, with and without peer problems, and that social-cognitive and social-behavioral factors would differentiate these socially anxious children with (a) low and high levels of peer acceptance and (b) no or some peer victimization.

## Research Design and Methods

### *Participants*

Data for the present study were collected from sixth and seventh grade students at two middle schools in rural central Pennsylvania.  A description of the study and consent forms were sent home with all sixth and seventh grade students at participating schools and also mailed directly to their parents.  Students were given a $5 gift certificate for returning consent forms, regardless of whether consent to participate was given.  412 students (60%) agreed to participate in the larger study, and data was collected on 397 of these students, who were present on the days of data collection.

Participants in the present study were 84 children who were selected from the larger sample with a focused over-sampling of children with elevated social anxiety, as measured by the Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998).  More specifically, the proposed study included 42 children (23 girls, 19 boys) with an "elevated" level of social anxiety and 42 children (24 girls, 18 boys) with a "normative" level of social anxiety.  Children classified as elevated reported levels of social anxiety on the SAS-A one standard deviation above the mean of the larger sample, with separate selection within school, grade, and gender. An additional 42 children with normative levels of social anxiety were selected from the

remaining participants in the larger sample. An attempt was made to match children in the

normative subsample with children in the elevated subsample by grade, school, and gender.

However, due to differential availability of students for data collection, the normative subsample

included one more girl and one less boy than the elevated subsample. The mean item score on

the SAS-A (an 18-item measure, rated on a 5-point scale) for children classified as "normative"

was 1.83 ($SD = .45$), and the mean score for children classified as "elevated" was 3.06 ($SD =$

.57). The mean level of social anxiety reported by children in the larger sample is comparable to

the mean level of social anxiety reported by a sample of high school students (La Greca &

Lopez, 1998), providing supporting evidence that the selection criteria (i.e., one standard

deviation above the larger sample mean) resulted in a group with elevated social anxiety.

The sample of the present study included 47 females (56%) and 37 males (44%), and 30

sixth graders (36%) and 54 seventh graders (64%). The racial composition of the sample

reflected the racial composition of rural central Pennsylvania, which is primarily Caucasian. The

racial composition included 79 Caucasian children (94%), 1 Hispanic child (1%), and 4 children

of more than one racial category (5%). All children in the participating schools were invited to

participate in the research, and there were no exclusion criteria.

### *Procedure*

Child self-report measures and peer sociometric nominations were administered during a

single class period, taking approximately 35 minutes to complete. Graduate research assistants

explained the measurement battery and were available to answer questions. Children were

instructed to keep their answers private and a cover sheet was provided to ensure privacy.

Teachers were also asked to complete a questionnaire for each participating child.

Teachers who participated agreed to divide the child ratings among themselves, such that

teachers completed measures for children with whom they were most familiar. Teachers were compensated for their time at an hourly rate, according to school district standards.

Following questionnaire administration, children who qualified for inclusion in the present study on the basis of their social anxiety scores were identified (42 students with elevated social anxiety and 42 students with normative social anxiety), and they participated in two video-taped social interaction tasks and pre- and post-task interviews. Children were given permission to leave non-core academic classes and lunch/recess periods to complete the interview and social interaction tasks, which lasted approximately 20 minutes. The social interaction tasks and interviews took place in available space at schools, typically the library or guidance office conference room. Graduate and undergraduate research assistants conducted the interviews and directed the social interaction tasks. The social interaction tasks and interview procedures were described to participants upon their arrival.

Before and after the social interaction tasks, children were asked about their social performance expectations and use of coping strategies. The social interaction tasks included a structured dyadic conversation task (adapted from Kelly, Furman, Phillips, Hathorn, & Wilson, 1979) and the Talk Show Activity (TSA; adapted from Guevremont, 1990). For the TSA, children were asked to begin and maintain a conversation with a research assistant for a few minutes by telling about themselves and finding out about the other person. They were instructed to pretend the research assistant was another middle school student whom they hoped to get to know better. Prompts (2 questions and 1 self-statement) were provided on a sheet of paper to help children begin the conversation. The research assistant ended the conversation after 3 minutes. To promote standardization across interviews and to ensure that children remained in control of the conversations, research assistants responded to questions with self-

statements, and responded to self-statements with only one follow-up question.  Research

assistants were unaware of participants' level of social anxiety.  The procedures for the TSA

were designed to adhere to guidelines for socially valid contrived-interaction tasks recommended

by Bierman (2004), including: (1) that the task involve relevant and salient developmental

challenges applicable to the naturalistic context, and (2) that the task require coordination of

cognitive, affective, and behavioral dimensions of social competence.

*Measures*

    *Social anxiety.*  Child social anxiety was assessed with the Social Anxiety Scale for

Adolescents (SAS-A; La Greca & Lopez, 1998; see Appendix A), a developmentally appropriate

adaptation of the Social Anxiety Scale for Children – Revised (SASC-R; La Greca & Stone,

1993).  The SAS-A is an 18-item self-report, and each item is rated on a 5-point scale (1 = not at

all, 5 = all the time).  Although the measure has a 3-factor structure (i.e., Fear of Negative

Evaluation, Social Avoidance and Distress – New Situations, Social Avoidance and Distress –

General), this study used the total score as a measure of social anxiety. In the present sample, the

total scale had strong internal consistency ($\alpha$ = .91).  The SAS-A has demonstrated reliability and

validity (Inderbitzen-Nolan & Walters, 2000; La Greca & Lopez, 1998).

    *Social performance expectations.*  Social performance expectations were assessed in two

ways.  First, children provided self-reports of their performance expectations prior to the social

interaction task (TSA).  After the interviewer described the social interaction task, but before the

task began, children were asked two questions about their social performance expectations

("How well do you think you'll do"; "How certain are you that you can do as good a job as other

kids"; see Appendix C).  Children responded to the questions using a 5-point scale (e.g., 1 = very

poorly, 5 = very well).  A total score was computed by averaging the scores for the two items.

Inter-item consistency was adequate ($\alpha = .80$).

Second, children provided self-reports of their social performance expectations in

response to hypothetical vignettes of social situations, developed for the present study (What Do

You Think; see Appendix B).  The vignettes described social situations likely to occur in middle

school (e.g., "You see a group of students from another class playing a great game.  You walk

over and want to join in.  As you get closer, you hear them laughing.").   These situations were

adapted from hypothetical vignettes used in three previous studies (Barrett, Rapee, Dadds, &

Ryan, 1996; Bogels & Zigterman, 2000; Muris, Merckelbach, & Damsma, 2000).  In the context

of the hypothetical situations, children were asked, "How would you feel about this situation?,"

then asked to provide ratings for two statements (You'd be able to get along with them; You'd

know what to do) on 4-point scales (1 = Not at all; 4 = Very much).  Similar rating formats have

been used in previous studies (see Bogels & Zigterman, 2000; Smari et al., 2001).  Three

hypothetical vignettes were administered, and two items assessing social performance

expectations were attached to each vignette.  A composite score was computed by averaging

scores from the six items.  Inter-item consistency was adequate ($\alpha = .80$).

A composite score reflecting social performance expectations was computed by

averaging the z-scores for the two measures of social performance expectations.  The inter-item

consistency of items comprising the composite score was sufficient ($\alpha = .79$).

*Coping strategies*.  Coping strategies were assessed based on children's responses to

open-ended questions about coping strategies they used during the social interaction task.

Specifically, after the TSA, children were asked, "What strategies did you use when you felt

nervous?  What did you do to make yourself feel less nervous?" (see Appendix C).  Their

responses were coded as problem-directed, self-directed, or not applicable coping strategies. Problem-directed coping strategies were defined as those that (1) directed immediate action or attention toward the interaction (e.g., attempts to influence the conversation), or (2) involved appraisals/pretending about the interaction (e.g., non-threatening appraisals of the interaction). Thus, problem-directed coping strategies were specific cases of engagement coping strategies, including both primary control strategies (e.g., attempts to influence the conversation) and secondary control strategies (e.g., attempts to appraise the conversation or interaction in positive terms), as defined by Compas et al. (2001).

Self-directed coping strategies were defined as those that (1) directed immediate action or attention toward the self or away from the interaction (e.g., self-directed motor responses; positive statements about the self) or toward emotion regulation (e.g., relaxation strategies), or (2) involved appraisals/pretending about the self or something other than the specified situation (e.g., thoughts about extraneous matters). Thus, self-directed coping strategies were also specific cases of engagement coping strategies, including primary control strategies (e.g., direct attempts to relax an anxious state) and secondary control strategies (e.g., cognitive distraction from the interaction), as defined by Compas et al. (2001). As noted, coping subtypes in the present study were differentiated on the basis of their immediate allocation of attention toward or away from the social interaction. Responses involving the camera, indicating the absence of anxiety (e.g., "I wasn't nervous"), and indicating that the child forgot to use a strategy were coded as Not Applicable (see Appendix D for coding key).

Children identified a mean of 2.37 ($SD$ = 1.10) coping strategies. A total of 67 children identified 130 problem-directed coping strategies; 37 children identified 56 self-directed coping strategies; and 12 children identified 13 not applicable coping strategies. Strategies coded as

problem-directed and self-directed were summed to create a total score for each type of coping strategy. Two raters who were unaware of the social anxiety level of participants coded the responses. Inter-rater reliability was high ($\kappa = .90$). Coping responses were also coded in a more specialized manner to further describe the types of responses that comprised problem- and self-directed coping strategies (see Table 1).

*Social Interaction Skills during an Analogue Conversation Task.* Social interaction skills were assessed with a global observational coding system developed for the present study. Previous research has shown that verbal interaction and affective expression during social interaction are both important dimensions of social competence (e.g., Englund, Levy, Hyson, & Sroufe, 2000; Hops, Alpert, & Davis, 1997). Thus, to capture both affective (e.g., positive and comfortable affective expression) and verbal interaction (e.g., sensitive verbal responding) dimensions of social interaction skills exhibited during the Talk Show Activity, children were rated on their displays of positive affective expression, confidence/comfort, sensitive responding, and global skill (see Appendix E).

Each item was rated on a 5-point scale (0 = not at all; 5 = very much) by trained undergraduate and post-graduate coders who were unaware of the social anxiety level of study participants. Coders were trained on practice tapes until they achieved an inter-rater reliability (intraclass correlation) of .70 on each item. Reliability checks and coding meetings were conducted on a weekly basis throughout the coding period. For each coder, a minimum of 25-percent of tapes were also coded by a master coder to assess reliability. An intraclass correlation coefficient (ICC) was computed to assess reliability for each item. Item-level ICCs were computed by weighting the ICCs for each coder by the number of interactions she coded. Item-level ICCs were .74 for positive affective expression, .64 for confidence, .76 for sensitive

responding, and .77 for global skill. Fifty-five percent of the interactions were reviewed by the master coder, and discrepant ratings were resolved by consensus.

The social interaction skill composite score was comprised of ratings of positive affective expression, confidence/comfort, sensitive responding, and global skill. Thus, affective and verbal interaction dimensions of social skill were represented in the composite score. The internal consistency ($\alpha$ = .87) and inter-rater reliability (ICC = .72) of the composite score were adequate.

*Adaptive Social Behaviors in the School Context*. Adaptive social behaviors were assessed with teacher ratings of child prosocial-cooperative and withdrawn behavior at school. Seven items reflecting prosocial-cooperative and problem-solving behavior (e.g., "This child is kind and cooperative with peers") were selected from the Social Health Profile (CPPRG, 1992), and three items reflecting withdrawn behavior (e.g., "This child avoids peers or keeps peers at a distance") were drawn from the Child Behavior Scale (Ladd & Profilet, 1996) (see Appendix F). Each item was rated on a 5-point scale (1 = almost never, 5 = all the time). The reliability and predictive validity of the Social Health Profile and the Child Behavior Scale have been established (CPPRG, 1997; Ladd & Profilet, 1996). In the present study, the prosocial-cooperative and withdrawn behavior scales each had high internal consistency ($\alpha$s = .92 and .96, respectively). Items that comprised the prosocial-cooperative and withdrawn behavior subscales were summed and averaged to create a composite score representing Adaptive Social Behaviors ($\alpha$ = .90).

*Peer Adjustment*. Peer acceptance was assessed with peer nominations on the Peer Social Network Diagram (Lansford & Parker, 1999; see Appendix G). All children participating in the larger middle school study (N = 397) were asked to identify their very best friends, their good

friends, and their remaining friends, within 3 concentric circles. All of the "friend" nominations received by each child were summed and standardized within grade-level and school to obtain a score for peer acceptance.

Peer victimization was assessed with peer nominations of victimization. Following the Peer Social Network Diagram, children were asked to identify: "Students who get picked on all the time by other students" and "Students who get made fun of by other students." The nominations that children received for both items were summed and standardized within grade-level and school to obtain a score for peer victimization.

## Results

*Preliminary Analyses*

A preliminary goal of the present study was to replicate prior findings linking child social anxiety with peer maladjustment. As hypothesized, social anxiety was significantly correlated with decreased peer acceptance ($r = -.25$, $p < .05$) and increased peer victimization ($r = .24$, $p < .05$). Peer acceptance and peer victimization were also correlated ($r = -.29$, $p < .01$). As an exploratory goal, the present study also investigated the role of gender as a correlate and moderating variable in analyses predicting peer adjustment. Gender was not significantly correlated with social anxiety ($r = -.06$, $p > .10$) or peer acceptance ($r = -.07$, $p > .10$). However, gender was significantly correlated with peer victimization ($r = .22$, $p < .05$), such that boys experienced more peer victimization than girls ($t(40.26) = -1.85$, $p < .10$). In addition, gender moderated the relation between social anxiety and peer victimization, according to the procedures recommended by Baron and Kenny (1986). Specifically, social anxiety and gender were entered on the first step of a hierarchical regression equation with peer victimization as the dependent variable; the interaction between social anxiety and gender was entered on the second

step, and the interaction emerged as a significant predictor of peer victimization ($\beta = .31$, $p <$ .05).

Post-hoc analyses were conducted to interpret the nature of the significant interaction (i.e., whether social anxiety was associated with peer victimization for boys and/or girls). According to post-hoc probing procedures recommended by Holmbeck (2002), two conditional moderator variables were first computed, with girls assigned a value of zero for the first conditional variable and boys assigned a value of zero for the second conditional variable. Next, variables representing interactions between social anxiety and each of the conditional moderator variables were computed. Finally, regressions were conducted separately for each conditional moderator variable. Each regression equation included social anxiety, one of the conditional moderator variables (with boys or girls equal to zero), and the interaction between social anxiety and one of the conditional moderator variables. With zero substituted for the conditional moderator variable in each equation (which is the value of gender represented by each equation), separate intercepts and slopes were generated for the relations between social anxiety and peer victimization for boys and girls (Holmbeck, 2002). As illustrated in Figure 1, post-hoc analyses revealed a significant link between social anxiety and peer victimization for boys ($\beta = .52$, $p <$ .01), but no significant relation between social anxiety and peer victimization for girls ($\beta = .05$, $p > .10$).

*Interrelations among Key Variables*

*Linking social behaviors with peer adjustment and social anxiety*. The first major goal of the present study was to examine social behaviors as correlates of peer adjustment and social anxiety. It was hypothesized that adaptive social behaviors in the school context and social interaction skills during an analogue conversation task would be linked with increased peer

acceptance and decreased peer victimization.  It was also hypothesized that increased social anxiety would impart vulnerability to social-behavioral skill deficits, as reflected in its associations with decreased adaptive social behaviors and decreased social interaction skills.

As shown in Table 2, teacher reports of adaptive social behaviors in the school context were significantly correlated with increased peer nominations of acceptance ($r = .40$) and decreased peer nominations of victimization ($r = -.27$).  Adaptive social behaviors were not associated with gender, but the association between adaptive social behaviors and peer victimization was moderated by gender ($\beta = -.33, p < .05$).  As illustrated in Figure 2, post-hoc analyses revealed that adaptive social behaviors were significantly linked with peer victimization for boys ($\beta = -.54, p < .01$) but not for girls ($\beta = -.05, p > .10$) (Holmbeck, 2002).  As hypothesized, adaptive social behaviors were also significantly associated with social anxiety ($r = -.22$).

Observational codes of social interaction skills during the analogue conversation task were also significantly correlated with increased peer nominations of acceptance ($r = .27$) and decreased peer nominations of victimization ($r = -.24$).  Social interaction skills were not associated with social anxiety or gender, but the association between social interaction skills and peer victimization was moderated by gender ($\beta = -.31, p < .05$).  As illustrated in Figure 3, post-hoc analyses revealed that social interaction skills were significantly linked with decreased peer victimization for boys ($\beta = -.46, p < .01$) but not for girls ($\beta = -.01, p > .10$) (Holmbeck, 2002).  Social interaction skills and adaptive social behaviors were correlated ($r = .27$).

*Linking social-cognitive factors with social anxiety, social behaviors, and peer adjustment*.  The second major goal of the present study was to examine social-cognitive factors as additional vulnerabilities to social-behavioral skill deficits and peer maladjustment.  It was

hypothesized that decreased social performance expectations and increased self-directed coping strategies (and decreased problem-directed coping strategies) would be associated with decreased adaptive social behaviors, decreased social interaction skills, decreased peer acceptance, and increased peer victimization. It was also hypothesized that social anxiety would be linked with social-cognitive vulnerabilities.

As shown in Table 3, positive social performance expectations were significantly correlated with increased social interaction skills ($r$ = .25) and increased peer acceptance ($r$ = .28), but not correlated with adaptive social behaviors or peer victimization. Problem-directed coping strategies were significantly correlated with increased adaptive social behaviors ($r$ = .24) and social interaction skills ($r$ = .23) and marginally associated with increased peer acceptance ($r$ = .18), but not correlated with peer victimization. Self-directed coping strategies were marginally correlated with decreased social interaction skills ($r$ = -.18) and significantly associated with increased peer victimization ($r$ = .37), but not correlated with adaptive social behaviors or peer acceptance. In addition, gender moderated the association between self-directed coping strategies and peer victimization ($\beta$ = .28, $p$ < .05). As illustrated in Figure 4, post-hoc analyses revealed that self-directed coping strategies were linked with increased peer victimization for boys ($\beta$ = .56, $p$ < .001) but not for girls ($\beta$ = .15, $p$ > .10) (Holmbeck, 2002).

Problem- and self-directed coping strategies were negatively correlated ($r$ = -.37, $p$ < .01). Furthermore, $r$ to z transformations revealed significant differences between correlations linking problem- versus self-directed coping strategies with adaptive social behaviors ($z$ = 1.82, $p$ < .05) and social interaction skills ($z$ = 2.30, $p$ < .05) (Cohen & Cohen, 1983). Social anxiety was not associated with problem-directed or self-directed coping strategies, but was associated with decreased social performance expectations ($r$ = -.27). Social performance expectations

were not significantly linked with problem-directed ($r = .03$, $p > .10$) or self-directed ($r = -.05$, $p > .10$) coping strategies.

To explore the failure to find hypothesized associations between social anxiety and coping strategies, follow-up Pearson correlations were also computed between an item assessing anxiety during the social interaction task ("How nervous were you during the talk show?", rated on a 5-point scale) and coping strategies. Nervousness during the social interaction task was significantly related to self-directed coping strategies ($r = .22$, $p < .05$), but not to problem-directed coping strategies ($r = -.04$, $p > .10$).

Gender differences in the distribution of peer victimization nominations may have contributed to the discrepancies between findings for girls and boys. A nearly equal number of girls and boys received at least one peer victimization nomination (15 girls and 14 boys). However, the number of victimization nominations ranged from 0–6 for girls, whereas victimization nominations ranged from 0–38 for boys, with five boys receiving more than six victimization nominations. Despite the potential role of gender differences in distribution, the same pattern of findings, with nearly identical regression coefficients, emerged when peer victimization was re-coded to constrain the influence of outliers in the distribution of victimization among boys.

*Regression Models Linking Social Anxiety with Peer Adjustment*

The third major goal of the present study was to examine more inclusive regression models with direct and mediated pathways linking social anxiety with (a) decreased peer acceptance and (b) increased peer victimization. It was hypothesized that increased social anxiety would be linked with social-cognitive vulnerabilities (decreased social performance expectations and increased self-directed coping strategies) which, in turn, would be linked with

social-behavioral skill deficits (decreased adaptive social behaviors and decreased social interaction skills) which, in turn, would be linked with peer maladjustment (decreased peer acceptance and increased peer victimization) (see Figure 5). As shown in Figure 5, it was expected that adaptive social behaviors and social interaction skills would mediate pathways linking social anxiety and social-cognitive vulnerabilities with peer maladjustment.

Each model diagram is a graphic representation of a series of multiple regression analyses. Each variable with arrows pointing toward it in Figure 5 was used as a dependent variable in a multiple regression equation. All variables preceding (left to right) the dependent variable were entered simultaneously as independent variables in the equation, thus providing predictive estimates of each variable independent of all other variables (i.e., controlling for all other variables). Gender was also included as an independent variable in each regression equation, and the interaction between gender and social anxiety was included on the second step of equations predicting peer outcomes. After conducting initial regression equations including all hypothesized links, final regression equations were conducted, trimmed to include only significant predictors from their respective initial regression equations. The model diagrams in Figures 6 and 7 represent the results of the final regression models. Formal tests of mediation were also conducted to examine whether social-behavioral factors mediated pathways linking social anxiety and social-cognitive vulnerabilities with peer maladjustment.

*Regression model linking social anxiety with peer acceptance.* As illustrated in Figure 6, regression analyses provided support for an indirect pathway linking social anxiety with decreased peer acceptance. Specifically, describing the model diagram from left to right, (1) social anxiety was associated with decreased social performance expectations ($\beta = -.27, p < .05$) , (2) social anxiety and problem-directed coping strategies were linked directly with adaptive

social behaviors ($\beta = -.21$, $p < .05$; $\beta = .23$, $p < .05$, respectively), (3) social performance

expectations and problem-directed coping strategies predicted social interaction skills ($\beta = .25$, $p$

$< .05$; $\beta = .22$, $p < .05$, respectively), and (4) social performance expectations and adaptive social

behaviors were linked directly with peer acceptance ($\beta = .23$, $p < .05$; $\beta = .37$, $p < .01$,

respectively).  Social performance expectations and adaptive social behaviors accounted for 21%

of the variance in peer acceptance ($F(2, 81) = 10.74$, $p < .001$).  On the basis of non-significant

regression coefficients with each dependent variable in the initial model, gender and self-directed

coping strategies were not included in the final regression model.  The interaction between

gender and social anxiety was also non-significant in the initial model and thus excluded from

the final model.

Further analyses were conducted to examine whether social-behavioral factors mediated

pathways linking (a) social anxiety and (b) social-cognitive factors with peer acceptance.

Mediational analyses were conducted because the regression model above indicates direct and

indirect links, but does not provide formal tests of mediation.  Relations that met the criteria for

testing mediation according to Baron and Kenny (1986) were examined.  Specifically, the Baron

and Kenny (1986) procedure was used to examine whether (a) adaptive social behaviors

mediated the link between social anxiety and decreased peer acceptance, (b) a composite of

adaptive social behaviors and social interaction skills mediated the relation between problem-

directed coping strategies and increased peer acceptance, and (c) social interaction skills

mediated the link between social performance expectations and increased peer acceptance.

Mediational analyses revealed that adaptive social behaviors partially mediated the link

between social anxiety and decreased peer acceptance.  Specifically, in the first equation

recommended by Baron and Kenny (1986), social anxiety was associated with decreased

adaptive social behaviors ($\beta = -.22$, $p < .05$); in the second equation, social anxiety was associated with decreased peer acceptance ($\beta = -.25$, $p < .05$); and in the third equation including both predictors, social anxiety was no longer significantly associated with decreased peer acceptance ($\beta = -.18$, $p < .10$) and adaptive social behaviors were associated with increased peer acceptance ($\beta = .36$, $p < .01$). Thus, when both social anxiety and adaptive social behaviors were included in the equation predicting peer acceptance, the association between social anxiety and decreased peer acceptance was marginally attenuated ($z = -1.77$, $p < .10$; Sobel, 1988), providing evidence for partial mediation.

Mediational analyses also revealed that a composite of adaptive social behaviors and social interaction skills mediated the link between problem-directed coping strategies and increased peer acceptance. A composite score comprised of rate of adaptive social behaviors and social interaction skills was created to streamline analyses. The correlation coefficient between adaptive social behaviors and social interaction skills was .27, and both indices of social behavior were similarly associated with problem-directed coping and peer acceptance (see Table 2). The composite score was computed by averaging the standardized score of each variable. In the first mediational equation (Baron & Kenny, 1986), problem-directed coping was associated with the social skill composite ($\beta = .29$, $p < .01$); in the second equation, problem-directed coping was associated with increased peer acceptance at the non-significant trend level ($\beta = .18$, $p = .10$); in the third equation including both predictors, problem-directed coping was no longer associated with increased peer acceptance ($\beta = .07$, $p > .10$) and the social skill composite was associated with increased peer acceptance ($\beta = .40$, $p < .001$). Thus, when both problem-directed coping and the social skill composite were included in the equation predicting peer acceptance,

the association between problem-directed coping and increased peer acceptance was significantly

attenuated ($z = 2.22$, $p < .05$; Sobel, 1988), providing evidence for mediation.

Analyses did not provide support for the hypothesis that social interaction skills would

mediate the relation between social performance expectations and increased peer acceptance ($z =$

1.49, $p > .10$; Sobel, 1988).  Instead, as suggested by regression model analyses, results

suggested that social performance expectations were linked directly with increased peer

acceptance.

*Regression model linking social anxiety with peer victimization.*  As illustrated in Figure

7, regression analyses provided support for direct and indirect pathways linking social anxiety

with increased peer victimization.  Specifically, describing the model diagram from left to right,

(1) social anxiety was associated with decreased social performance expectations ($\beta = -.27$, $p <$

.05) , (2) social anxiety and problem-directed coping strategies were linked directly with

adaptive social behaviors ($\beta = -.21$, $p < .05$; $\beta = .23$, $p < .05$, respectively), (3) social

performance expectations and problem-directed coping strategies predicted social interaction

skills ($\beta = .25$, $p < .05$; $\beta = .22$, $p < .05$, respectively), and (4) social anxiety, self-directed coping

strategies, and adaptive social behaviors were each linked directly with peer victimization ($\beta =$

.18, $p < .10$; $\beta = .32$, $p < .01$; $\beta = -.20$, $p < .05$, respectively).  Analyses also revealed an

independent association between gender and peer victimization ($\beta = .19$, $p < .10$), with boys

victimized more often than girls.  Interactions between gender and other significant predictors of

peer victimization from the initial model were included in the final model, to examine the

possibility that these interactions accounted for gender differences in the pathway linking social

anxiety with peer victimization.  Indeed, gender moderated pathways linking (a) social anxiety ($\beta$

$= .68$, $p < .10$), (b) self–directed coping strategies ($\beta = .56$, $p < .10$) and (c) adaptive social

behaviors ($\beta = -1.27$, $p < .05$) with peer victimization. In each case, links between predictors and peer victimization were significant for boys but not significant for girls (see Figures 1, 2, and 4 for results of post-hoc analyses). The final model accounted for 38% of the variance in peer victimization ($F(7, 76) = 6.56$, $p < .001$).

The Baron and Kenny (1986) procedure was also used to examine whether (a) adaptive social behaviors mediated the link between social anxiety and increased peer acceptance, and (b) social interaction skills mediated the link between self-directed coping strategies and increased peer victimization. Analyses did not provide support for the mediating role of adaptive social behaviors ($z = 1.48$, $p > .10$) or social interaction skills ($z = 1.20$, $p > .10$). Instead, as suggested by regression model analyses, results suggested that social anxiety and self-directed coping strategies were linked directly with increased peer victimization.

*Person-Oriented Analyses*

Person-oriented analyses that group children according to their profiles on social-psychological variables serve the purpose of elucidating the existence and prevalence of certain profiles in the population. More importantly, person-oriented analyses allow investigators to understand the clinical significance of these profiles as well as the factors that predict their membership (Bergman, Magnusson, & El-Khouri, 2003). Thus, the fourth goal of the present study was to examine links among social-cognitive and social-behavioral factors and peer adjustment more specifically for a subsample of children with elevated social anxiety. It was hypothesized that subgroups of socially anxious children would exist, with and without peer problems, and that social-cognitive and social-behavioral factors would differentiate these socially anxious children with (a) low and high levels of peer acceptance and (b) no or some peer victimization.

Descriptive statistics among key variables are displayed separately for children with elevated and normative levels of social anxiety (see Table 4). Logistic regressions were conducted to examine whether social-cognitive and social-behavioral factors differentiated peer acceptance and peer victimization statuses among children with elevated social anxiety. For these analyses, it was important to first verify that socially anxious children could be separated into meaningful subgroups of similar size according to their peer adjustment status. A dichotomous split was used to distinguish children's peer acceptance and peer victimization statuses. Peer victimization was dichotomized as none (zero) or some (more than zero). Twenty-six children received no peer nominations of victimization, and 16 children received at least one nomination. Victimization nominations among children with elevated social anxiety ranged from 0 to 38. Without a clear point at which to dichotomize (e.g., none or some) for peer acceptance, children were dichotomized according to whether they received fewer or more "friend" nominations than the mean number for the larger sample of middle school students ($n =$ 397), standardized within grade-level and school. This subgroup criteria resulted in 25 children classified as low on peer acceptance and 17 children classified as high on peer acceptance. Although the mean split was a somewhat arbitrary point at which to divide subgroups on peer acceptance, preliminary analyses provided support for the selection criteria. In particular, children classified as "low" on peer acceptance reported higher levels of loneliness than children classified as "high" on peer acceptance ($t(38.04) = 3.35, p < .01$). Peer adjustment subgroups did not differ on level of social anxiety ($t(40) = -.90, p > .10$ for peer victimization; $t(40) = .97, p > .10$ for peer acceptance).

The results of logistic regression analyses are presented in Table 5. For logistic regression analyses predicting each dependent variable (peer victimization and peer acceptance

status), social-cognitive and social-behavioral factors that were significantly correlated with these outcomes for the subsample were entered simultaneously as independent variables, thus providing predictive estimates of each variable independent of all other variables. This selection criteria (i.e., significant correlations) was used to preserve limited power to detect significant relations. In addition, gender was entered on the first step of each logistic regression analysis, and interactions between gender and each predictor were entered on the second step.

Gender, adaptive social behaviors, and social interaction skills were entered on the first step in the logistic regression equation predicting peer acceptance status. Together, these predictors significantly differentiated socially anxious children with high peer acceptance status from those with low peer acceptance status ($\chi^2 = 9.16$, $p < .05$). Social interaction skills was the only single variable to significantly predict whether socially anxious children had high or low peer acceptance status (odds ratio = 2.49, $p < .05$). In addition, the set of interactions between gender and the predictors significantly improved the logistic model ($\chi^2 = 7.26$, $p < .05$). Specifically, the interaction between adaptive social behaviors and gender emerged as a marginally significant predictor of peer acceptance status (odds ratio = 15.42, $p < .10$). The procedures recommended by Holmbeck (2002) were conducted to interpret the interaction finding. Post-hoc analyses revealed that adaptive social behaviors significantly differentiated peer acceptance status among boys (odds ratio = 11.80, $p < .05$) but not among girls (odds ratio = .823, $p > .10$). The full logistic model correctly classified 76% of children with elevated social anxiety as high or low on peer acceptance status ($\chi^2 = 16.42$, $p < .01$).

Gender, self-directed coping strategies, and social interaction skills met criteria for entry in the logistic regression equation predicting peer victimization status. Neither the set of predictors ($\chi^2 = 2.80$, $p > .10$) or individual variables differentiated socially anxious children who

were victimized from those who were not. Interactions between gender and predictors did not significantly improve the model ($\chi^2 = 2.74$, $p > .10$).

<div align="center">**Discussion**</div>

The present study aimed to advance understanding of social-cognitive and social-behavioral vulnerabilities to peer maladjustment among children with elevated social anxiety. Hypothesized pathways linking social anxiety with peer maladjustment were examined using reports of target children, their peers and teachers, and behavioral observations. Analyses revealed direct and indirect pathways linking social anxiety with peer maladjustment, as well as predictors of peer adjustment independent of social anxiety. Significant gender differences also emerged in the model predicting peer victimization. These findings and their implications for intervention will be discussed.

*Interrelations among Key Variables*

*Linking social anxiety with peer maladjustment.* In the present study, children's self-reports of social anxiety were linked with peer-reported peer problems, including both decreased peer acceptance and increased peer victimization. These findings add to the existing research literature, in which associations between social anxiety and peer maladjustment have emerged across developmental periods (middle childhood through adolescence) and across normative and clinical samples (Beidel et al., 1999; Flanagan, 2005; Inderbitzen et al., 1997; La Greca & Lopez, 1998; La Greca & Stone, 1993; Vernberg et al., 1992), justifying the conclusion that children with elevated social anxiety often experience peer problems. Recent research has thus begun to examine moderators and mediators of the relation between social anxiety and peer maladjustment, to advance conceptual models and inform intervention. Mediated pathways and gender differences in the present study will be discussed in further detail below.

*Linking social anxiety with social behaviors.* Social anxiety was negatively associated with adaptive social behaviors at school. Thus, the present study is among the first to show that children with elevated social anxiety not only participate in social interaction at lower rates (i.e., social withdrawal), but also appear to exhibit deficits in friendly and cooperative behaviors. Despite the lack of previous research investigating this issue specifically, it is not surprising that socially anxious children exhibit decreased adaptive social behaviors at school. Overcoming urges to avoid social interaction altogether is difficult for socially anxious children; engaging in an active and positive manner is a further challenge. As discussed in more detail below, this finding suggests that interventions for children with social anxiety must consider the importance of prosocial-cooperative and problem-solving skills in addition to skills for initiating social interaction alone. Indeed, research has shown that prosocial behavior is a predictor of positive peer adjustment across social contexts (Chang, 2004; Stormshak, Bierman, Bruschi, Dodge, Coie, & CPPRG, 1999), demonstrating its "absolute value" and unequivocal importance for children's success with peers (Bierman, 2004).

In contrast to expectations, however, the association between social anxiety and decreased social interaction skills did not reach significance, suggesting that peer vulnerabilities associated with deficits in these social skills are not unique to social anxiety. In the present study, social interaction skills during conversation were comprised of sensitive verbal responding and positive affective expression, dimensions of social competence hypothesized to be affected by social anxiety in particular. That is, it was anticipated that the sustained attention required to maintain a reciprocal conversation would outreach the available attentional capacity of children who were simultaneously devoting cognitive resources to internal and external cues of perceived threat (Rapee & Heimberg, 1997; Vasey & Daleiden, 1996). In addition, fears of negative

evaluation were expected to inhibit positive and confident affective displays among children with elevated social anxiety (Leary, 2000).

Indeed, with a clinical sample, Beidel et al. (1999) found that socially anxious children were rated as less effective than non-anxious peers in role-plays that included carrying on a conversation, giving and receiving compliments, and requesting another to change behavior. Research has also shown that socially anxious children exhibit longer speech latencies, shorter response length, and increased anxious affect during conversation role-plays, as compared to non-anxious peers (Beidel et al., 1999; Spence et al., 1999). Additional evidence suggests that experiencing social anxiety impedes sensitivity to others during social interaction (Hope et al., 1990; Johnson & Glass, 1989; Simonian et al., 2001). However, the Beidel et al. (1999) and Spence et al. (1999) studies, in particular, differ from the present study in at least two important ways. First, these studies compared children with a diagnosis of social anxiety disorder to children with no diagnosis. Second, the conversation tasks and behavioral observations in these studies involved interactions between target children and same-age peers.

Like the present study, Cartwright-Hatton and colleagues recently conducted two studies investigating the link between social anxiety and social skills with non-clinical samples. In the first study, Cartwright-Hatton et al. (2003) found small correlations between social anxiety and observer ratings of global performance ($r = -.17$, ns) and nervousness ($r = -.28$, $p < .05$) during a two-minute speech task. In a more recent study, Cartwright-Hatton et al. (2005) found no significant differences between children with high and low levels of social anxiety on observer ratings of nervousness and global performance during a conversation task with an adult confederate. However, in both studies increased social anxiety was associated with poorer ratings of social performance by target children themselves. On the basis of these findings,

Cartwright-Hatton et al. (2003, 2005) concluded that socially anxious children may not consistently show social skill deficits, but do appear to exhibit distortions in self-evaluations of their social skills, particularly their evaluations of nervous appearance.

Their conclusion is questionable given the opposing evidence from studies investigating children with social anxiety disorder (e.g., Beidel et al., 1999; Spence et al., 1999) and the results of the present study linking social anxiety with decreased adaptive social behaviors. Instead, it is possible that the social skill deficits of socially anxious children are small to moderate in magnitude, and evident consistently only among children at or near clinical levels of social anxiety. Indeed, children with heightened—yet subclinical—social anxiety may be expected to elevate their social performance as a result of increased motivation to gain peer acceptance and avoid negative evaluation. This possibility is supported by results of the present study revealing wide variability in the social cognition, social behavior, and peer adjustment of children with elevated social anxiety, as discussed in further detail below.

In addition, the different interaction partners in these studies (i.e., same-age peers versus adult research assistants) may account for the discrepant findings. Beidel et al. (1999) and Spence et al. (1999) used same-age peers as conversation partners, whereas Cartwright-Hatton (2003, 2005) and the present study used adult research assistants as interaction partners. Due to the increased importance of comparative and reflected peer evaluations during the late childhood and early adolescent years (Costanzo et al., 1995; Parker et al., 1995), interactions with same-age peers may elicit more significant fears of negative evaluation, and correspondingly impact social cognition and social behavior more forcefully.

The social contexts from which data was drawn is also an important difference between the measurement of adaptive social behaviors and social interaction skills in the present study.

Adaptive social behaviors were assessed by teachers in the naturalistic school context, where social histories (e.g., reputational biases) and peer group dynamics (e.g., behavioral norms within groups) complicate the task of exhibiting socially competent behavior (Bierman, 2004). For example, in the naturalistic social context, the same behavior may be met with different peer responses depending upon the child, the time and place, and the presence of other children. In contrast, social interaction skills were assessed during a conversation with an unfamiliar research assistant, absent of social history and peer group influences that increase the complexity of behavioral demands. In this context, the assertions and responses of research assistants were relatively standardized across children, regardless of their previous behavior and social standing. Thus, adaptive social behaviors in the school context and social interaction skills in the conversation task each required children to organize affective, cognitive, and behavioral dimensions of social skill; in addition, however, adaptive social behaviors in the school context required that children navigate the specific and changing demands of the preadolescent social context. Thus, as compared to displaying social interaction skills in a conversational context, exhibiting adaptive social behaviors in the school context may be a heightened challenge for socially anxious children, as these behaviors may be even more susceptible to the cognitive and affective interference inherent in social anxiety. Indeed, social interaction skills like those measured in the present study may be conceptualized as a subset of the skills required to exhibit adaptive social behaviors in the naturalistic school context.

*Linking social performance expectations with social anxiety and social behaviors.* Social-cognitive factors with purported associations to social anxiety were examined as additional and more specific vulnerabilities to social-behavioral skill deficits, to further account for the peer problems of socially anxious children. As expected, social anxiety was associated

with decreased (i.e., negative) social performance expectations. This finding replicated the results of Spence et al. (1999), the first study to show an association between child social anxiety and negative social performance expectations prior to a social-evaluative task, joining a number of studies with similar findings for anxious adults. This finding is also consistent with the cognitive interference perspective on anxiety. The cognitive interference perspective suggests that internal cues of threat associated with anxiety, such as negative social performance expectations, divert attention from social interaction, and thereby disrupt social behavior (Rapee & Heimberg, 1997; Vasey & Daleiden, 1996). Indeed, in the present study, negative social performance expectations were also linked with decreased social interaction skills.

The association between social performance expectations and social interaction skills is consistent with research linking social information-processing with social behavior and social adjustment. For example, among aggressive children, biased encoding and interpretation of social cues as well as maladaptive response evaluation and selection contribute to aggressive responding (Crick & Dodge, 1994). Much of the research on social information-processing has concerned the social-cognitive characteristics of aggressive-disruptive children, but increasingly, investigators have integrated emotional processes in their models of social cognition (e.g., Crick & Dodge, 1994; Lemerise & Arsenio, 2000) and extended this research to children with internalizing problems such as anxiety (e.g., Rapee & Heimberg, 1997). The results of the present study suggest that perceptual biases, such as negative social performance expectations, also shape the social behavior of socially anxious children. Specifically, expectations of social failure may generate negative affect and preoccupation with negative outcomes, and thereby contribute to less positive affective displays and less sensitive verbal responding during social interaction.

*Linking coping strategies with social anxiety and social behaviors.* In contrast to expectations, social anxiety was not linked positively with self-directed coping strategies or negatively with problem-directed coping strategies. As described, all coping strategies reported by children in the present study were engaging strategies, as defined by Compas et al. (2001), yet they could be differentiated based on the allocation of attention toward the self or social interaction. Self-directed coping strategies engaged the stress itself, by attempting to regulate nervous feelings directly (e.g., relaxation, distraction, motor self-soothing). In contrast, problem-directed coping strategies engaged the source of stress, by attempting to influence or appraise the social interaction in positive ways (e.g., asking questions, pretending to be a talk show host, viewing the research assistant as a friend). It was anticipated that the emotional state of anxious children would carry more weight than the specific demands of the situation in their choice of coping strategies (Vasey & Daleiden, 1996). Thus, it was expected that socially anxious children would attend to their anxious emotional state in a social interaction situation (self-directed coping) rather than the interaction itself (problem-directed coping).

At least two alternative explanations for the failure to find significant associations are feasible. First, in contrast to expectations, socially anxious children may not be uniquely predisposed to self-directed coping at the expense of problem-directed coping in social situations. That is, social anxiety and maladaptive coping may act as independent vulnerabilities to disrupted social behavior and peer maladjustment. Second, it is also possible that only children who have reached clinical levels of social anxiety consistently resort to self-directed coping strategies (and avoid problem-directed coping strategies) in anxiety-provoking social situations.

Despite the failure to find compelling evidence in the present study, it is possible that a link between social anxiety and maladaptive coping strategies would emerge over time. Indeed, in the present study, social anxiety was significantly associated with self-directed coping strategies among the normative social anxiety subsample, and nervousness during the social interaction task was also linked with self-directed coping for the full sample. Thus, it is puzzling that social anxiety was not linked with increased self-directed coping or decreased problem-directed coping during the social interaction task for the full sample. One potential explanation is that social anxiety experienced by children during the social interaction task was not fully reflected in their ratings on the Social Anxiety Scale for Adolescents (SAS-A). The age range of children in the present study may have resulted in a sample for whom increased social anxiety had begun to emerge in particular social contexts, but had not yet generalized across contexts, as would be reflected on the SAS-A. Indeed, children in the present study were below the mean age of onset for social anxiety disorder (Beidel & Turner, 1998; Weiss & Last, 2001). Interestingly, Costanzo et al. (1995) contended that early experiences of anxiety are likely to be situationally delimited; with accumulating negative experiences, however, feelings of anxiety and related belief structures are likely to generalize across situations and increase in intensity. Thus, it is possible that specific experiences eliciting social anxiety are not reflected in general ratings of social anxiety until negative cognitive structures have further consolidated, perhaps as a result of accumulating coping and social-behavioral difficulties in social situations. It is possible that general ratings of social anxiety would emerge as stronger correlates of coping and social-behavioral difficulties in particular social situations during the adolescent years, when generalization has occurred.

Despite the failure to find associations with social anxiety, hypothesized differences emerged for relations between problem- versus self-directed coping and both social interaction skills and adaptive social behaviors. As expected, problem-directed coping strategies were positively linked with adaptive social behaviors at school and social interaction skills during conversation. In contrast, self-directed coping strategies were marginally negatively linked with social interaction skills. These findings are compatible with the perspective that coping strategies may either distract or facilitate attention to the task at hand, and thereby affect competent social behavior (Vasey & Daleiden, 1996). However, the failure to find significant associations between social anxiety and coping strategies suggests that self-directed and problem-directed coping strategies act as independent risk and protective factors, respectively, for social competence.

These findings also echo the recent calls of child coping researchers emphasizing the need to conceptualize coping effectiveness as a context-dependent (Compas et al., 2001; Connor-Smith et al., 2001; Fields & Prinz, 1997; Rudolph et al., 1995). Specifically, the results of the present study are consistent with a substantial body of research documenting the effectiveness of problem-directed coping strategies in controllable circumstances. That is, in the present study, focusing on the conversation or appraising the interaction in positive terms was associated with increased social interaction skills. Presumably, in the face of social challenge, problem-directed coping responses allow children to preserve sufficient attention to social interaction, facilitating contingent and enjoyable interaction. In contrast, whereas previous research has shown that some self-directed coping strategies promote psychological adjustment, the present study suggests that ongoing social interaction is not the appropriate context for such coping. These results suggest that self-directed coping strategies (e.g., relaxation, distraction, and motor

responses) during social interaction disrupt social interaction skills and invite peer victimization among boys, as discussed in further detail below.

It is also worth noting that the assessment of coping strategies in the present study allowed it to address several gaps in the child coping literature. In particular, Compas et al. (2001) remarked on the lack of attention to person- and context-specificity in child coping research. The present study examined coping strategies among children with elevated social anxiety, in the context of conversational interaction, thus examining a particular population in a particular situation. In addition, whereas most previous research on child coping is based on self-reports of both coping and adjustment, the present examined links among self-reported coping, observational and teacher-reported social behavior, and peer-reported social adjustment.

*Predicting Peer Acceptance*

Analyses revealed correlations among several social-cognitive and social-behavioral factors and peer acceptance. In particular, direct associations emerged between observational assessments of social interaction skills during a brief conversation task and increased peer acceptance (and decreased peer victimization). These findings suggest that affective and verbal interaction dimensions of social competence influence peer responses and confirm the importance of dyadic conversation skills during late childhood and early adolescence. Peer interactions that build and sustain friendships during the preadolescent years increasingly involve intimate self-disclosure and reciprocity (Parker et al., 1995). It is likely that these processes often occur in the context of dyadic or small-group conversations. Indeed, preadolescents reported that "conversing" was among the most important activities for them to do with other children, and activities such as talking on the telephone and hanging out were also identified as important social contexts (Zarbatany, Hartmann, & Rankin, 1990). The present study suggests

that children with skill deficits in these social interaction contexts are less likely to gain peer acceptance and more likely to experience victimization.  Social interaction skills did not, however, retain its significant association with peer adjustment in regression models, perhaps due to the limitations of the measure and the greater importance of exhibiting these skills in the naturalistic social context, as reflected in the measure of adaptive social behaviors at school.

Consistent with hypotheses, the regression model predicting peer acceptance revealed that social anxiety was linked with decreased social performance expectations and decreased adaptive social behaviors which, in turn, were linked with decreased peer acceptance.  Adaptive social behaviors mediated pathways linking social anxiety and problem-directed coping strategies with peer acceptance.  These findings suggest that children with elevated social anxiety experience decreased peer acceptance—at least in part—due to reduced rates of adaptive social behaviors.  This finding is consistent with the perspective that, in general, children are not disliked by peers at random; rather, observed behavioral as well as non-behavioral (e.g., appearance) factors principally influence peer responses (Coie, 1990; Bierman, 2004).  Indeed, numerous studies have linked adaptive social behaviors, such as social participation, prosocial behaviors, and problem-solving skills, with peer acceptance (Bierman, 2004).  This finding also supports the recent trend toward including social skills training as a major component of interventions for children with social anxiety (e.g., Beidel, Turner, & Morris, 2000; Hayward, Vardy, Albano, Thienemann, Henderson, & Schatzberg, 2000; Masia, Klein, Storch, & Corda, 2001; Spence, Donovan, & Brechman-Toussaint, 2000).

Social performance expectations were also directly linked with peer acceptance in the regression model.  According to social information-processing models, "social cognitions are the mechanisms leading to social behaviors that, in turn, are the bases of social adjustment

evaluations by others" (Crick & Dodge, 1994, p. 74). Thus, it seems probable that children's social performance expectations were reflected in their social behavior in a way that was not measured in the present study. That is, negative social performance expectations themselves are not accessible to peers; however, their behavioral manifestations in social avoidance, for example, are observable. As reviewed, the influence of social cognition on social behavior and social adjustment has been well-documented among aggressive-disruptive children (Crick & Dodge, 1994). The present study extends this research literature to socially anxious children, suggesting that negative social performance expectations exert a negative influence on their social behavior and peer adjustment.

*Predicting Peer Victimization*

An additional goal of the present study was to examine direct and mediated pathways linking social anxiety with increased peer victimization. In contrast to the model predicting peer acceptance, social behaviors did not mediate the pathway linking social anxiety and coping strategies with increased peer victimization. Instead, social anxiety, self-directed coping strategies, and adaptive social behaviors were each directly linked with peer victimization. Differences between the predictive models for peer acceptance and peer victimization may be understood, in part, by contrasting the experience of peer acceptance from that of peer victimization. Whereas decreased peer acceptance involves low levels of peer liking and generates feelings of loneliness and isolation, peer victimization involves being singled out for attack and hostile treatment by peers. In addition, gender differences in peer victimization contributed to variability in the predictive models.

*Gender differences in the model predicting peer victimization.* The present study is among the first to explore gender differences in the association between child social anxiety and

peer maladjustment.  No gender differences emerged in levels of social anxiety reported by children; however, boys were more intensively victimized than girls, and social anxiety was linked with peer victimization for boys but not for girls.  One other study has reported gender differences in the association between social anxiety and peer maladjustment.  La Greca and Lopez (1998) found that social anxiety was more strongly linked with number and quality of close friendships for adolescent girls, as compared to boys, such that social anxiety characterized girls with few and poor quality friendships.  Thus, it is possible that social anxiety interferes with peer relationships in different ways for girls and boys, reflecting gender differences in the middle school peer culture.  For example, some research suggests that boys are oriented more toward the larger peer group than dyadic relationships, whereas girls are oriented more toward dyadic relationships and small groups than the larger peer group (Benenson, 1993; Maccoby, 1998; Markovits, Benenson, & Dolenszky, 2001).  In this case, it would not be surprising if social anxiety as a cause and consequence of peer adjustment was relatively more salient for boys in the general peer group context (e.g., victimization) and for girls in smaller-group and dyadic contexts (e.g., friendships).  In addition, longitudinal research suggests that internalizing problems place boys at greater risk for peer victimization than girls (Boulton, 1999), and that peer problems place boys at greater risk for internalizing problems than girls (Burks, Dodge, & Price, 1995).  Gender differences in peer group reactions to internalizing behaviors may explain gender differences in the association between internalizing problems, such as social anxiety, and peer victimization.

For example, increased self-directed coping strategies and decreased adaptive social behaviors were linked with peer victimization for boys but not for girls.  A potential explanation for these findings is that decreased adaptive social behaviors and increased self-directed coping

behaviors are less normative among boys than girls, leaving boys who display these behaviors more susceptible to peer victimization. Indeed, research supports a person-group similarity model for withdrawn and aggressive behaviors, such that the meaning and acceptability of these behaviors varies according to their normative rates in a group (Boivin, Dodge, & Coie, 1995; Chang, 2004; Stormshak, Bierman, Bruschi, Dodge, Coie, & CPPRG, 1999; Wright, Giammarino, & Parad, 1986). Gender differences in normative rates of self-directed coping and adaptive social behaviors appear to be unlikely explanations for the present findings, however, because gender differences in these variables did not exist in the present sample. Furthermore, boys actually displayed lower rates of adaptive social behaviors than girls in the larger middle school sample from which the present sample was drawn (Flanagan, 2005).

Other potential explanations for these findings involve gender-specific reactions to behavior on the basis of group needs (Bukowski & Sippola, 2001), socialized perceptions of appropriateness (Maccoby, 1998), or opportunities to establish dominance (Pellegrini & Bartini, 2001). For example, from an ethological perspective, research suggests that boys at first employ aggression as a means to establish dominance hierarchies within new peer groups (e.g., transition to middle school) (Boulton, 1992; Hawley, 1999; Pellegrini & Bartini, 2001; Pellegrini & Long, 2002). Aggressive boys seeking dominance may target "easy" victims on the basis of perceived affective and behavioral vulnerabilities (Hodges et al., 1997; Hodges & Perry, 1999), as reflected in social anxiety, self-directed coping strategies, and reduced adaptive social behaviors. That is, among boys in particular, vulnerabilities to victimization may include spending time alone and displaying anxious or fearful affect, despite opposing socialization pressures for peer group involvement, toughness, and assertiveness (Maccoby, 1998). Indeed, Boulton (1999) found that spending time alone early in the school year predicted increased peer victimization later in the

school year for middle school boys but not for girls, despite slightly higher mean rates of solitary behavior among boys.  Chang (2004) also found that social withdrawal was more negatively linked with peer acceptance among middle school boys than among girls, for whom withdrawn behavior was only slightly more common.  In addition, Waas and Graczyk (1999) found that elementary-age boys, as compared to girls, reported more negative perceptions of internalizing behaviors such as worrying, crying, and not playing during recess.  Thus, it appears that boys who display anxious behaviors are more likely to be victimized than girls, perhaps even when normative rates of these behaviors do not differ between boys and girls.  Interestingly, longitudinal research has even shown that boys who were shy during late childhood were more likely than girls to experience negative consequences over the next 30 years of their lives, including delayed entry into stable careers, less occupational achievement and stability, and marital instability (Caspi, Elder, & Bem, 1989).

Behavioral manifestations of self-directed coping strategies might also help explain stronger links between social anxiety and peer victimization for boys than for girls.  As discussed, self-directed coping strategies during social interaction may draw attention away from social interaction, impeding natural and reciprocal engagement in social interaction.  Such disconnected social interaction would not be expected to precipitate greater peer problems for boys than for girls.  However, visible self-directed coping strategies such as taking deep breaths and motor self-soothing during social interaction may be perceived as awkward, and signal weakness and vulnerability particularly to aggressive boys, as suggested by findings linking internalizing behaviors with victimization among boys (Boulton, 1999).  Examples of self-directed coping strategies during social interaction included "counted to ten," "grabbed hold of my seat," "thought about being home and what my mom is doing tonight," and "thought about

my snake back home." Peer perceptions of these strategies as atypical and awkward, to the extent that they are manifest in observable behaviors, may explain their direct link with peer victimization among boys.

In addition to potential explanations raised above, it is possible that the trouble with self-directed coping strategies during social interaction does not lie exclusively in their use, but also in the factors governing the use of strategies such as relaxation and distraction during social interaction. For example, the use of these self-directed coping strategies (and failure to use problem-directed coping strategies) may reflect difficulty shifting attention away from cues of perceived threat (Compas & Boyer, 2001). That is, while nervous feelings may trigger attempts to relax, sooth, and distract in many children, some children may become fixated on coping with the nervous state itself and find it difficult to re-direct sufficient attention to social interaction (i.e., problem-directed coping). Indeed, recent research suggests that the link between attentional biases to threat-relevant information and pathological anxiety is moderated by effortful control, such that children at risk for anxiety disorders with low effortful control are not able to override their automatic attentional biases to threat, and thereby experience heightened anxiety (Lonigan, Vasey, Phillips, & Hazen, 2004). Furthermore, shifting attention from negative states to positive states or to problem-directed coping appears to be operational in the poor outcomes of anxious children (Derryberry & Tucker, 1994), children who develop recurrent abdominal pain (Compas & Boyers, 2001), rejection-sensitive children (Ayduk et al., 2000), and aggressive-rejected children (Wilson, 2003). Interestingly, Wilson (2003) found that girls, regardless of social status, had less difficulty than boys shifting attention from one affective state (i.e., negative or positive) to another as part of a facial affect recognition task. The present study suggests that children who cope with anxiety by directing attention toward social interaction engage in more

prosocial and sensitive ways, as compared to children who remain focused on the anxious state itself, as reflected in self-directed coping strategies. It is not clear whether the purported attention-shifting difficulty is due to higher anxiety in the first place, underdeveloped coping skills, or actual deficits in cognitive-attentive functioning such as effortful control.

It should be noted that another potential explanation for gender differences in links among predictors and peer victimization is that boys in the present sample may have been more maladjusted than girls in the sample. It is possible that the linkages examined in the present study would not differ for boys and girls at the extremes of behavioral and psychological maladjustment. This is a viable alternative explanation because the sample size was relatively small and thus susceptible to non-random variability. As noted, it is unlikely that the measure of victimization itself accounted for gender differences in its prediction because an equal number of boys and girls received nominations of victimization and outliers did not appear to account for the findings.

*Person-oriented Analyses*

The present study is also among the first to show substantial variability in peer adjustment among children with elevated social anxiety. Specifically, the sample of children with elevated social anxiety was divided into subgroups of similar size with no versus some peer victimization nominations (victimization nominations ranged from 0 to 38). In addition, the number of friend nominations among children with elevated social anxiety ranged from 0 to 44, spanning the lowest to the highest number of nominations in the entire middle school sample. These data are consistent with the developmental psychopathology perspective that heterogeneity exists in the nature and outcomes of anxiety disorders (Vasey & Dadds, 2001), and specifically supported the hypothesis that heterogeneity would exist in the peer adjustment of children with

elevated social anxiety. As noted, this hypothesis was based on the premise that social anxiety may reflect heightened motivation for peer acceptance and thereby facilitate competent social behavior, when anxious feelings are well-regulated. This hypothesis was also based on ethnographic research suggesting that the developmental importance and intimidating nature of the preadolescent peer environment may set the stage for some children to develop elevated social anxiety in the absence of social-behavioral skill deficits or concurrent peer problems (Adler & Adler, 1995; Eder, 1985).

Thus, it appears that children with elevated social anxiety may gain peer acceptance and avoid peer victimization despite their social discomfort. The present study also sought to examine the social-cognitive and social-behavioral factors that differentiate socially anxious children who do and do not experience successful peer adjustment. Social interaction skills during conversation emerged as a significant predictor differentiating the peer acceptance status of children with elevated social anxiety. It is interesting that social interaction skills emerged as a significant predictor of peer adjustment, with adaptive social behaviors statistically controlled, only among the subsample of children with elevated social anxiety. Whereas multiple routes to peer acceptance exist, this result suggests that exhibiting social interaction skills (e.g., positive affect and sensitive verbal responding) in dyadic interactive contexts may be a particularly feasible route to peer acceptance for children with elevated social anxiety, who may be unlikely to gain acceptance through more visible social behaviors such as prosocial leadership, social dominance, and gregariousness. Adaptive social behaviors also differentiated peer acceptance status among boys with elevated social anxiety. Thus, in the present study, adaptive social behaviors, including withdrawn and prosocial-cooperative behaviors, showed increased importance as a predictor of both peer victimization and peer acceptance among boys. These

person-oriented findings may be particularly important because it is possible that social skills and peer adjustment status differentiates those children with elevated social anxiety whose anxiety intensifies to clinical levels versus declines to normative levels over time.

*Implications for Intervention*

The present study aimed not only to advance understanding of social-cognitive and social-behavioral factors involved in child social anxiety, but also to guide intervention efforts designed to interrupt the feedback cycle between social anxiety and peer maladjustment. The results of the present study suggest that decreased social performance expectations and adaptive social behaviors are vulnerabilities that account for the association between social anxiety and peer maladjustment. These results also suggest that maladaptive coping strategies and social interaction skills during conversation are risk factors for peer maladjustment that are independent of social anxiety. That is, these constructs were not associated with social anxiety in the present study, yet each predicted social-behavioral skill deficits and peer maladjustment. Thus, the present study provides support for a cumulative risk and protective model for peer outcomes among socially anxious children, as opposed to a predictive model including only social anxiety and vulnerabilities associated with social anxiety. As such, interventions designed to improve the peer relations of socially anxious children may benefit from (1) targeting anxiety reduction and associated vulnerabilities (e.g., social-cognitive distortions, adaptive social behaviors), and (2) building "generic" protective factors that may not be unique to social anxiety, such as problem-directed coping and social interaction skills during conversation.

More specifically, the apparent importance of increased adaptive social behaviors across peer outcomes suggests that increasing social participation and prosocial-cooperative overtures may be crucial intervention targets. The present study also suggests that social interaction skills

in the conversational context may be productive intervention targets, due to their association with peer acceptance and victimization and independent prediction of peer acceptance status for children with elevated social anxiety. Indeed, the social interaction skills assessed in the present study may represent a subset of the broader class of adaptive social behaviors at school, and thereby intervention programs may more practically and effectively target this narrower set of social skills.

A more subtle implication of these results is that interventions targeting peer responsivity in addition to behavior change should be most effective. As noted, teacher reports of adaptive social behaviors most likely encompass both actual behavior and behavioral reputations, which are based on teacher observations of peer responses to target children. Thus, both adaptive social behaviors and peer responses are important targets for intervention. Peer responses are based on actual child behavior and peer schemas representing a child's previous behavior. Intervention programs may alter negative peer schemas by involving peers in the intervention program, to expose them to adaptive social behaviors exhibited by the target child, and by altering the general climate of acceptance in the peer environment (Bierman, 2004). Positive peer experiences as a result of intervention would then be expected to alleviate social anxiety, particularly during the middle school years when self-conceptions are closely intertwined with comparative and reflected peer appraisals (Costanzo et al., 1995; O'Brien & Bierman, 1988; Parker et al., 1995).

In addition, the results linking coping strategies and peer adjustment may have important implications for intervention. Research has shown that regulating or coping with negative emotions is an important dimension of social competence (Bierman, 2004; Eisenberg & Fabes, 1992; Halberstadt et al., 2001, Sroufe, 1996). And, it is clear that socially anxious children must

cope with anxiety during social interactions. How they ought to cope with anxiety is less clear. Successful intervention programs for children with anxiety disorders have advocated both problem-directed (e.g., problem-solving, cognitive restructuring) and self-directed (e.g., relaxation, distraction) coping strategies (Barrett, 2001; Spence, 2001). In addition, research suggests that problem-directed and at least some self-directed coping strategies are associated with positive psychological adjustment (Compas et al., 2001). However, the present study found divergent relations between these coping strategies and social behavior and peer adjustment.

The assessment of coping strategies that children used during social interaction differentiated the present study from other studies investigating the outcomes associated with coping strategies. The particular pattern of results, presumably as a result of assessing coping during social interaction, suggests that timing and context of coping strategies are important factors influencing their effectiveness. More specifically, in the context of ongoing social interaction, these results suggest that self-directed coping strategies may disrupt competent social behavior and result in negative peer responses, despite the potential effectiveness of self-directed coping as a strategy for reducing anxiety in general. In contrast, problem-directed coping strategies appear to facilitate competent social behavior and positive peer responses in the context of ongoing social interaction. If replicated, these findings would have important implications for intervention. For example, it would seem that successful intervention programs for anxious youth might advocate self-directed coping strategies for uncontrollable and distal anxiety-provoking events, yet problem-directed coping strategies for controllable and proximal anxiety-provoking events, particularly ongoing events such as social interaction.

Until these findings are replicated, however, they must be interpreted with caution given the unique classification of coping strategies and small sample size. Indeed, alternative

implications for intervention are feasible.  For example, it is possible that self-directed coping strategies can be implemented effectively even during social interaction situations when used in a subtle and efficient manner.  It is also worth noting that self-directed coping strategies may actually prevent behavioral responses such as avoidance, which could lead to even more negative peer responses than the disrupted social behavior indicated by the present study.  Thus, the strengths and weakness of self-directed coping during social interaction are not fully understood, and further research is needed to investigate the issue.

As an analytic approach in general, person-oriented analyses employing social-cognitive and social-behavioral skills to predict the peer adjustment status of children with elevated social anxiety are particularly well-suited for generating recommendations for intervention.  That is, this approach is sensitive to the ways in which experiencing social anxiety may render certain coping strategies and behaviors more or less feasible.  For example, social interaction skills in dyadic conversations may be more feasible than behaviors requiring more confidence (e.g., leadership, assertiveness) in the face of elevated social anxiety, and thus productive intervention targets for children with elevated social anxiety.

*Limitations of the Present Study and Directions for Future Research*

Several limitations of the present study and corresponding directions for future research should be noted.  All analyses conducted in the present study were cross-sectional, precluding conclusions about causality and direction of pathways.  As noted, an existing longitudinal study bearing on this matter provides evidence for reciprocal relations between social anxiety and peer experiences (e.g., Vernberg et al., 1992).  Additional longitudinal and experimental research would elucidate the relative effects of social anxiety and peer adjustment on one another.  In particular, further prevention and intervention research designed to target the social-cognitive

and social-behavior vulnerabilities of socially anxious children would be informative. For example, if improvements in social-cognitive and social-behavioral domains result in improvements in the peer relationships of socially anxious children, then conclusions about the directionality presumed in the present study (i.e., social anxiety results in social-behavior vulnerabilities which, in turn, results in peer problems) would be warranted.

The present study examined general rates of adaptive social behaviors at school and specific social interaction skills during a conversation task as predictors of peer adjustment. However, it did not specifically account for the variability that different social situations and peer contexts might introduce. For example, research has shown that socially anxious children experience varying levels of distress depending on the social situation, with unstructured and evaluative social situations evoking the highest levels of distress (Beidel & Turner, 1995; Beidel et al., 1999). In addition, as noted, the acceptability of some social behaviors appears to vary as a function of their normative rates in the peer group (Boivin et al., 1995; Chang, 2004; Stormshak et al., 1999; Wright et al., 1986). The acceptability of social behaviors might also vary as a function of other dimensions of the peer group, including age, gender, culture, and activity preferences. For example, Zarbatany et al. (1990) found that humor was rated as a highly desirable behavior by preadolescents in activity contexts such as speaking on the phone, shopping, and eating, but not particularly desired while playing team sports. Recent research has also shown that the link between social anxiety and victimization may vary as a function of ethnic diversity in the peer group (Bellmore, Witkow, Graham, & Juvonen, 2004). Specifically, Bellmore et al. (2004) found that victimized children who shared the classroom with many same-ethnicity peers reported higher levels of social anxiety than victims who shared the classroom with fewer same-ethnicity peers. Thus, it is likely that the intensity of anxiety, importance of

particular behaviors, and peer adjustment of socially anxious children also varies according to the situational and social context. Understanding the situational and social contexts in which children are more or less vulnerable as a function of social anxiety levels and social behaviors would inform intervention efforts. In particular, such research might have implications for the relative emphasis of intervention on individual skill remediation versus contextual factors, such as the availability of diverse activity contexts and the climate of acceptance among children in schools.

The sample size and diversity of the present study were additional limitations. The sample size was relatively small, limiting power to detect significant relations and the feasibility of advanced statistical procedures such as structural equation modeling. The sample was also relatively homogenous in terms of race and, presumably, homogenous in terms of unmeasured demographic characteristics (e.g., parental education, income), limiting the extent to which these findings may be generalized to the broader population of middle school children. Nonetheless, the sample size exceeded the size and depth of measurement that characterize most available studies of social anxiety in middle school. In addition, although the level of diversity represented in this study reduces generalizability to more urban and diverse student populations, it is important to note that nearly one-third of all school-aged children in the United States attend public schools in rural areas or small towns that serve predominantly European-American families (Rural School and Community Trust, 2003). Due to a research literature that has emphasized urban samples, rural schools and students have not been well-studied (Merz & Furman, 1997), despite rates of mental health problems that equal or exceed those in urban areas (Bierman & CPPRG, 1997). In addition, rural schools may provide a particularly fertile context for the development of social anxiety due to their small and stable student populations. In such

contexts, reputational biases may be difficult to overcome, and children with peer problems may find themselves feeling "stuck," with few alternatives for establishing friendships and gaining acceptance, and thereby may be at heightened risk for social anxiety. For these reasons, a study examining social anxiety in rural schools was warranted, and results are likely to generalize to a significant understudied population of U.S. children. Future studies will be needed to assess generalizability to more urban and diverse school populations.

In addition, the results from this normative school-based sample may not generalize to children with clinical levels of social anxiety. It is unlikely that many children in the present study with "elevated" social anixety met diagnostic criteria for social anxiety disorder. Future research that examines similar social-behavioral and social-cognitive factors among children with more severe social anxiety would be informative. Nonetheless, research on subclinical but elevated levels of social anxiety may provide important insights about the emergence of clinical levels of social anxiety. This is particularly relevant in the present study given that children in the sample were just below the mean age of onset for social anxiety disorder.

Despite the strengths of the social interaction task used in the present study (e.g., standardization of interactions; correlations with student, teacher, and peer ratings), several weaknesses were evident. For the social interaction task, children were instructed to pretend they were having a conversation with a same-age peer while involved in an interaction with an adult research assistant. Although anecdotal observations suggested that children role-played as instructed (e.g., several children asked research assistants which teachers and classes they liked best), it is likely that interactions with same-age peers would have differed in some ways. For example, aside from differences in age-related perceptions and expectations, the present study was not able to account for the perceived social status of the conversation partner. It is possible

that the behavior of socially anxious children varies according to the social status of the other child(ren) involved in the interaction.  Thus, as long as adequate standardization can be achieved, it would be informative for future research to examine the social behavior of socially anxious children in naturalistic, same-age peer interactions.

In addition, social-behavioral differences between children with normative and elevated levels of social anxiety may have been constrained by the social interaction task.  Whereas avoidance is a common behavioral response of children with social anxiety in anticipation of social interactions (Beidel et al., 1999), avoiding the social interaction task in the present study may have differed from typical circumstances in which avoidance would be an option.  In the present study, child assent to participate was obtained prior to the interview and social interaction task.  However, the implicit demands of an activity in the school setting with an adult probably differentiated the viability of avoidance as a response option in this situation from its viability in typical peer situations.  It should be noted that ratings of social withdrawal were obtained from teachers, potentially accounting for the variance in peer outcomes associated with social avoidance.  Nonetheless, future studies with naturalistic observations of conversational interactions with peers may provide a more accurate measure of social interaction skills.

A final limitation of the present study is that peer adjustment data were limited to the children who participated.  It is possible that fuller participation among middle school students would have resulted in a different pattern of friend and victim nominations.  Nonetheless, it is reasonable to assume that responses from 60% of students in the participating middle schools reflected the actual peer adjustment of participants.

**References**

Adalbjarnardottir, S. (1995). How schoolchildren propose to negotiate: The role of social withdrawal, social anxiety, and locus of control. *Child Development, 66,* 1739-1751.

Adler, P. A., & Adler, P. (1995). Dynamics of inclusion and exclusion in preadolescent cliques. *Social Psychology Quarterly, 58*, 145-162.

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders: Fourth edition.* American Psychiatric Association: Washington, DC.

Ayduk, O., Mendoza-Denton, R., Mischel, W., Downey, G., Peake, P., & Rodriguez, M. (2000). Regulating the interpersonal self: Strategic self-regulation for coping with rejection sensitivity. *Journal of Personality and Social Psychology, 79,* 776-792.

Barlow, D. H. (1991). Disorders of emotion. *Psychological Inquiry, 2,* 58-71.

Baron, R. M. & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Barrett, P. (2001). Current issues in the treatment of childhood anxiety. In M. W. Vasey & M. R. Dadds (Eds.)*The developmental psychopathology of anxiety* (pp. 304-324). New York: Oxford University Press.

Barrett, P. M., Rapee, R. M., Dadds, M. M., & Ryan, S. M. (1996). Family enhancement of cognitive style in anxious and aggressive children. *Journal of Abnormal Child Psychology, 24,* 187-203.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachment as a fundamental human motivation. *Psychological Bulletin, 117,* 497-529.

Beidel (1991). Social phobia and overanxious disorder in school-age children. *Journal of the American Academy of Child and Adolescent Psychiatry, 30,* 545-552.

Beidel, D. C., & Morris, T. L. (1995). Social phobia. In J. S. March (Ed.) *Anxiety disorders in children and adolescents* (pp. 181-211). New York: Guilford Press.

Beidel, D. C., & Turner, S. M. (1998). *Shy children, phobic adults: Nature and treatment of social phobia.* Washington, DC: American Psychological Association.

Beidel, D. C., Turner, S. M., & Morris, T. L. (2000). Behavioral treatment of childhood social phobia. *Journal of Consulting and Clinical Psychology, 68,* 1072 – 1080.

Beidel, D. C., Turner, S. M., & Morris, T. L. (1999). Psychopathology of childhood social phobia. *Journal of the American Academy of Child and Adolescent Psychiatry, 38,* 643-650.

Bellmore, A. D., Witkow, M. R., Graham, S., & Juvonen, J. (2004). Beyond the individual: The impact of ethnic context and classroom behavioral norms on victims' adjustment. *Developmental Psychology, 40,* 1159-1172.

Benenson, J. F. (1993). Greater preference among females than males for dyadic interaction in early childhood. *Child Development, 64,* 544-555.

Bergman, L. R., Magnusson, D., & El-Khouri, B. M. (2003). *Studying individual development in an interindividual context: A person-oriented approach.* Mahwah, New Jersey: Lawrence Erlbaum.

Bierman, K. L. (2004). *Peer rejection: Developmental processes and intervention strategies.* New York: Guilford.

Bierman, K. L., & the Conduct Problems Prevention Research Group. (1997). Implementing a comprehensive program for the prevention of conduct problems in rural communities: The Fast Track experience. *American Journal of Community Psychology, 25*, 493-514.

Bierman, K. L., & Furman W. (1984). The effects of social skills training and peer involvement on the social adjustment of preadolescents. *Child Development, 55,* 151-162.

Bierman, K. L., Miller, C. M., & Stabb, S. (1987). Improving the social behavior and peer acceptance of rejected boys: Effects of social skills training with instructions and prohibitions. *Journal of Consulting and Clinical Psychology, 55,* 194-200.

Bierman, K. L., Smoot, D. L., & Aumiller, K. (1993). Characteristics of aggressive-rejected, aggressive (nonrejected), and rejected (nonaggressive) boys. *Child Development, 64,* 139-151.

Bogels, S. M., & Zigterman, D. (2000). Dysfunctional cognitions in children with social phobia, separation anxiety disorder, and generalized anxiety disorder. *Journal of Abnormal Child Psychology, 28,* 205-211.

Boivin, M. Hymel, S., & Bukowski, W. M. (1995). The roles of social withdrawal, peer rejection, and victimization by peers in predicting loneliness and depressed mood in childhood. *Development and Psychopathology, 7,* 765-785.

Boulton, M. J. (1992). Rough physical play in adolescents: Does it serve a dominance function? *Early Education and Development, 3,* 312-333.

Boulton, M. J. (1999). Concurrent and longitudinal relations between children's playground behavior and social preference, victimization, and bullying. *Child Development, 70,* 944-954.

Bowker, A., Bukowski, W. M., Hymel, S., & Sippola, L. (2000). Coping with daily hassles in the peer group during early adolescence: Variations as a function of peer experience. *Journal of Research on Adolescence, 10,* 211-243.

Brown, B. B. (1990). Peer groups and peer culture. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 171-196). Cambridge, MA: Harvard University Press.

Bukowski, W. M., & Sippola, L. K. (2001). Groups, individuals, and victimization: A view of the peer system. In J. Juvonen & S. Graham (Eds.) *Peer harassment in school: The plight of the vulnerable and victimized* (pp. 355-377). New York: Guilford Press.

Cartwright-Hatton, S., Hodges, L., & Porter, J. (2004). Social anxiety in childhood: The relationship with self and observer rated social skills. *Journal of Child Psychology and Psychiatry, 44,* 737-744.

Caspi, A., Elder, G. H., & Bem, D. J. (1989). Moving away from the world: Life-course patterns of shy children. *Developmental Psychology, 24,* 824-831.

Chang, L. (2004). The role of classroom norms in contextualizing the relations of children's social behaviors to peer acceptance. *Developmental Psychology, 40,* 691-702.

Chansky, T. E., & Kendall, P. C. (1997). Social expectations and self-perceptions in anxiety-disordered children. *Journal of Anxiety Disorders, 11,* 347-363.

Chorpita, B. F. (2002). The tripartite model and dimensions of anxiety and depression: An examination of structure in a large school sample. *Journal of Abnormal Child Psychology, 30,* 177-190.

Cohen, J. & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences. Second Edition.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Coie, J. D. (1990). Toward a theory of peer rejection. In S. R. Asher & J. D. Coie (Eds.), *Peer rejection in childhood.* New York: Cambridge University Press.

Coie, J. D., Dodge, K., & Kupersmidt, J. B. (1990). Peer group behavior and social status. In S. R. Asher & J. D. Coie (Eds.), *Peer rejection in childhood.* New York: Cambridge University Press.

Compas, B. E., & Boyer, M. C. (2001). Coping and attention: Implications for child health and pediatric conditions. *Journal of Behavioral Pediatrics, 22,* 323-333.

Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: Problems, progress, and potential in theory and research. *Psychological Bulletin, 127,* 87-127.

Compas, B. E., Malcarne, V. L., & Fondacaro, K. M. (1988). Coping with stressful events in older children and young adolescents. *Journal of Consulting and Clinical Psychology, 56,* 405-411.

Conduct Problems Prevention Research Group (1992). A developmental and clinical model for the prevention of conduct disorder: The Fast Track program. *Development and Psychopathology, 4,* 509-527.

Conduct Problems Prevention Research Group (1997). *Social Health Profile and TOCA-R: Technical Report.* Unpublished manuscript.

Connor-Smith, J. K., Compas, B. E., Wadsworth, M. E., Thomsen, A. H., & Saltzman, H. (2000). Responses to stress in adolescence: Measurement of coping and involuntary stress responses. *Journal of Consulting and Clinical Psychology, 68,* 976-992.

Costanzo, P., Miller-Johnson, S., & Wencel, H. (1995). Social development. In J. S. March (Ed.), *Anxiety disorders in children and adolescents* (pp. 82-108). New York, New York: Guilford Press.

Crick, N. R., & Dodge, K. A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin, 115,* 74-101.

Crick, N. R. & Ladd, G. W. (1993). Children's perceptions of their peer experiences: Attributions, loneliness, social anxiety, and social avoidance. *Developmental Psychology, 29,* 244-254.

Crozier, W. R., & Burnham, M. (1990). Age-related differences in children's understanding of shyness. *British Journal of Developmental Psychology, 8,* 179-185.

Derryberry, D., & Tucker, D. M. (1994). Motivating the focus of attention. In P. Niedenthal & S. Kitayama (Eds.), *The heart's eye: Emotional influences in perception and attention.* (pp. 167-196). New York: Academic Press.

DeWit, D. J., MacDonald, K., & Offord, D. R. (1999). Childhood stress and symptoms of drug dependence in early adolescence and adulthood: Social phobia as a mediator. *American Journal of Orthopsychiatry, 69,* 61-72.

Dodge, K. A. (1983). Behavioral antecedents of peer social status. *Child Development, 54,* 1386-1399.

Eder, D. (1985). The cycle of popularity: Interpersonal relations among female adolescents. *Sociology of Education, 58,* 154-165.

Egan, S. K. & Perry, D. G. (1998). Does low self-regard invite victimization? *Developmental Psychology, 34,* 299-309.

Eisenberg, N., & Fabes, R. A. (1992). Emotion, regulation, and the development of social

competence. In M. S. Clark (Ed.), *Review of personality and social psychology: Vol. 14.*

*Emotion and social behavior* (pp.119-150). Newbury Park, CA: Sage.

Eisenberg, N., & Fabes, R. A. (1998). Prosocial development. In W. Damon & N. Eisenberg

(Eds.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality*

*development* (pp. 701-778). New York: Wiley.

Eisenberg, N., Fabes, R. A., Shepard, S. A., Murphy, B. C., Guthrie, I. K., Jones, S., Friedman,

J., Poulin, R., & Maszk, P. (1997). Contemporaneous and longitudinal prediction of

children's social functioning from regulation and emotionality. *Child Development, 68,*

642-664.

Englund, M. M., Levy, A. K., Hyson, D. M., & Sroufe, L. A. (2000). Adolescent social

competence: Effectiveness in a group setting. *Child Development, 71,* 1049-1060.

Fields, L., & Prinz, R. J. (1997). Coping and adjustment during childhood and adolescence.

*Clinical Psychology Review, 17,* 937-976.

Flanagan, K. S. (2005). *Understanding social anxiety in early adolescence: The role of peer*

*relations*. Unpublished Doctoral Dissertation, The Pennsylvania State University.

Francis, G., Last, C. G., & Strauss, C. C. (1992). Avoidant disorder and social phobia in children

and adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry,*

*31,* 1086-1089.

Grills, A. E., & Ollendick, T. H. (2002). Peer victimization, global self-worth, and anxiety in

middle school children, *Journal of Clinical Child and Adolescent Psychology, 31,* 59-68.

Guevremont, D. (1990). Social skills and peer relationship training. In R. A. Barkley (Ed.), *Attention-deficit hyperactivity disorder: A handbook for diagnosis and treatment* (pp. 540-572). New York: Guilford Press.

Halberstadt, A. G., Denham, S. A., & Dunsmore, J. C. (2001). Affective social competence. *Social Development, 10,* 79-119.

Hawley, P. H. (1999). The ontogenesis of social dominance: A strategy-based evolutionary perspective. *Developmental Review, 19*, 97-132.

Hayward, C., Vardy, S., Albano, A. M., Thienemann, M., Henderson, L., Schatzberg, A., F. (2000). Cognitive-behavioral group therapy for social phobia in female adolescents: Results of a pilot study. *Journal of the American Academy of Child and Adolescent Psychiatry, 39,* 721-726.

Hodges, E.V.E., Finnegan, R.A., & Perry, D.G. (1999).  Skewed autonomy-relatedness in preadolescents' conceptions of their relationships with mother, father, and best friend. *Developmental Psychology*, 35, 3, 737-748.

Hodges, E. V. E., Malone, M. J., & Perry, D. G. (1997). Individual risk and social risk as interacting determinants of victimization in the peer group. Developmental Psychology, 33, 1032-1039.

Hodges, E. V. E., & Perry, D. G. (1999). Personal and interpersonal antecedents and consequences of victimization by peers. *Journal of Personality and Social Psychology, 76,* 677-685.

Holmbeck, G. N. (2002). Post-hoc probing of significant moderational and mediational effects in studies of pediatric populations. *Journal of Pediatric Psychology, 27,* 87-96.

Hope, D. A., Heimberg, R. G., & Klein, J. F. (1990). Social anxiety and the recall of interpersonal information. *Journal of Cognitive Psychotherapy: An International Quarterly, 4,* 185-195.

Hope, D. A., Rapee, R. M., Heimberg, R. G., & Dombeck, M. J. (1990). Representations of the self in social phobia: Vulnerability to social threat. *Cognitive Therapy and Research, 14,* 177-189.

Hops, H., Alpert, A., & Davis, B. (1997). The development of same- and opposite-sex social relations among adolescents: An analogue study. *Social Development, 6,* 165-183.

Hubbard, J. A. (2001). Emotion expression processes in children's peer interaction: The role of peer rejection, aggression, and gender. Child Development, 72, 1426-1438.

Inderbitzen, H. M., Walters, K. S., & Bukowski, A. L. (1997). The role of social anxiety in adolescent peer relations: Differences among sociometric status groups and rejected subgroups, *Journal of Clinical Child Psychology, 26,* 338-348.

Inderbitzen-Nolan, H. M., & Walters, K. S. (2000). Social Anxiety Scale for Adolescents: Normative data and further evidence of construct validity. *Journal of Clinical Child Psychology, 29,* 360-371.

Johnson, R. L. & Glass, C. R. (1989). Heterosocial anxiety and direction of attention in high school boys. *Cognitive Therapy and Research, 13,* 509-526.

Johnson, H. D., LaVoie, J. C., Spenceri, M. C., & Mahoney-Wernli, M. A. (2001). Peer conflict avoidance: Associations with loneliness, social anxiety, and social avoidance, *Psychological Reports, 88,* 227-235.

Kanner, A. D., Feldman, S. S., Weinberg, D. A., & Ford, M. E. (1987). Uplifts, hassles, and

   adaptational outcomes in early adolescents. *Journal of Early Adolescence, 7,* 371-394.

Kelly, J. A., Furman, W., Phillips, J., Hathorn, S., & Wilson, T. Teaching conversational skills to

   retarded adolescents. *Child Behavior Therapy, 1,* 36-43.

Klem, L. (1995). Path analysis. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and*

   *understanding multivariate statistics* (pp. 65-97). Washington, D.C.: American

   Psychological Association.

Kushner, M. G., Sher, K. J., & Beitman, B. D. (1990). The relation between alcohol problems

   and anxiety disorders. *American Journal of Psychiatry, 147,* 685-695.

La Greca, A. M., & Lopez, N. (1998). Social anxiety among adolescents: Linkages with peer

   relations and friendships, *Journal of Abnormal Child Psychology, 26,*83-94.

La Greca, A. M., & Stone, W. (1993). Social Anxiety Scale for Children-Revised: Factor

   structure and concurrent validity. *Journal of Clinical Child Psychology, 22,* 17-27.

Ladd, G. W., & Profilet, S. M. (1996). The Child Behavior Scale: A teacher-report measure of

   young children's aggressive, withdrawn, and prosocial behaviors. *Developmental*

   *Psychology, 32,* 1008-1024.

Lansford, J. E., & Parker, J. G. (1999). Children's interactions in tryads: Behavioral profiles and

   effects of gender and patterns of friendship among members. *Developmental Psychology,*

   *35,* 80-93.

Last, C. G., Perrin, S., Hersen, M., & Kazdin, A. E. (1992). *DSM-III-R* anxiety disorders in

   children: Sociodemographic and clinical characteristics. *Journal of the American*

   *Academy of Child and Adolescent Psychiatry, 31,* 928-934.

Lazarus, R. S. & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.

Leary, M. (2000). Affect, cognition, and the social emotions. In J. P. Forgas (Ed.), Feeling and

   thinking: The role of affect in social cognition. Studies in emotion and social interaction,

   second series. (pp. 331-356). New York, NY, US: Cambridge University Press.

Leary, M. R., & Kowalski, R. M. (1995). *Social anxiety.* New York: Guilford Press.

LeMare, L., & Rubin, K. H. (1987). Perspective-taking and peer interactions: Structural and

   developmental analyses. *Child Development, 58,* 306-315.

Lemerise, E.A. & Arsenio, W.F. (2000). An integrated model of emotion processes and

   cognition in social information processing. *Child Development*, 71, 107-118.

Lilienfeld, S. O. (1999). Anxiety sensitivity and the structure of personality. In S. Taylor (Ed.),

   Anxiety sensitivity: Theory, research, and treatment of the fear of anxiety (pp. 149-180).

   Mahwah, New Jersey: Lawrence Erlbaum.

Lonigan, C. L., Vasey, M. W., Phillips, B. M., & Hazen, R. A. (2004). Temperament, anxiety,

   and the processing of threat-relevant stimuli. *Journal of Clinical Child and Adolescent*

   *Psychology, 33,* 8-20.

Maccoby, E. E. (1998). *The two sexes: Growing up apart, coming together*. Cambridge, MA:

   Harvard University Press.

Magnusdottir, I., & Smari, J. (1999). Social anxiety in adolescents and appraisal of negative

   events: Specificity or generality of bias. *Behavioural and Cognitive Psychotherapy, 27,*

   223-230.

Markovits, H., Benenson, J., & Dolenszky, E. (2001). Evidence that children and adolescents

   have internal models of peer interactions that are gender differentiated. *Child*

   *Development, 72,* 879-886.

Masia, C. L., Klein, R. G., Storch, E. A., & Corda, B. (2001). School-based behavioral treatment for social anxiety disorder in adolescents: Results of a pilot study. *Journal of the American Academy of Child and Adolescent Psychiatry, 40,* 780-786.

Mattia, J. I., Heimberg, R. G., & Hope, D. A. (1993). The revised Stroop color-naming task in social phobics. *Behaviour Research and Therapy, 31,* 305-313.

Merikangas, K. R., Angst, J., Eaton, W., Canino, G., et al. (1996). Comorbidity and boundaries of affective disorders with anxiety disorders and substance misuse: Results of an international task force. *British Journal of Psychiatry, 168,* 58-67.

Merz, C., & Furman, G. (1997). *Community and schools: Promise and paradox.* New York: Teachers College Press.

McNeil, D. W., Reiss, B. J., Taylor, L. J., Boone, M. L., Carter, L. E., Turk, C. L., & Lewin, M. R. (1995). Comparison of social phobia subtypes using Stroop tests. *Journal of Anxiety Disorders, 9,* 47-57.

Morris, T. L. (2001). Social phobia. In M. W. Vasey & M. R. Dadds (Eds.) *The developmental psychopathology of anxiety* (pp. 435-458). New York: Oxford University Press.

Muris, P., Merckelbach, H., & Damsma, E. (2000). Threat perception bias in nonreferred, socially anxious children. *Journal of Clinical Child Psychology, 29,* 348-359.

Newcomb, A. F., Bukowski, W. M., & Patee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average sociometric status. *Psychological Bulletin, 113,* 99-128.

Newman, B. M., & Newman, P. R. (2001). Group identity and alienation: Giving the we its due. *Journal of Youth and Adolescence, 30,* 515-538.

O'Brien, M., Bahadur, M. A., Gee, C., Balto, K., et al. (1997). Child exposure to marital conflict and child coping responses as predictors of child adjustment. *Cognitive Therapy and Research, 21,* 39-59.

Olah, A., Torestad, B., & Magnusson, D. (1989). Coping behaviors in relation to frequency and intensity of anxiety-provoking situations. *Perceptual and Motor Skills, 69,* 935-943.

Parker, J.G., Rubin, K.H., Price, J.M., & DeRosier, M.E. (1995). Peer relationships, child development, and adjustment: A developmental psychopathology perspective. In D. Cicchetti & D.J. Cohen (Eds.), *Developmental psychopathology: Vol. 2: Risk, disorder, and adaptation* (pp. 96-161). New York: Wiley.

Pellegrini, A. D., & Bartini, M. (2001). Dominance in early adolescent boys: Affiliative and aggressive dimensions and possible functions. *Merrill-Palmer Quarterly, 47,* 142-163.

Pellegrini, A. D., & Long, J. D. (2002). A longitudinal study of bullying, dominance, and victimization during the transition from primary school through secondary school. *British Journal of Developmental Psychology, 20,* 259-280.

Phillips, S. D., & Bruch, M. A. (1988). Shyness and dysfunction in career development. *Journal of Counseling Psychology, 35,* 159-165.

Prins, P. J. M. (1986). Children's self-speech and self-regulation during a fear-provoking behavioral test. *Behavioral Research and Therapy, 24,* 181-191.

Prins, P. J., Groot, M. J., & Hanewald, G. J. (1994). Cognitions in test-anxious children: The role of on-task and coping cognitions reconsidered. *Journal of Consulting and Clinical Psychology, 62,* 404-409.

Rabian, B., Peterson, R. A., Richters, J., & Jensen, P. S. (1993). Anxiety sensitivity among anxious children. *Journal of Clinical Child Psychology, 22,* 441-446.

Rabiner, D., & Coie, J. (1989). Effect of expectancy inductions on rejected children's acceptance by unfamiliar peers. *Developmental Psychology, 25,* 450-457.

Rapee, R. M. & Heimberg, R. G. (1997). A cognitive-behavioral model of anxiety in social phobia. *Behavior Research and Therapy, 35,* 741-756.

Rapee, R. M., & Lim, L. (1992). Discrepancy between self and observer ratings of performance in social phobics. *Journal of Abnormal Psychology, 101,* 727-731.

Rapee, R. M., & Melville (1997). Recall of family factors in social phobia and panic disorder. *Depression and Anxiety, 5,* 7-11.

Reiss, S., Silverman, W. K., & Weems, C. F. (2001). Anxiety sensitivity. In M. W. Vasey & M. R. Dadds (Eds.) *The developmental psychopathology of anxiety* (pp. 92-111). New York: Oxford University Press.

Rheingold, A. A., Herbert, J. D., & Franklin, M. E. (2003). Cognitive bias in adolescents with social anxiety disorder. *Cognitive Therapy and Research, 27,* 639-655.

Rubin, K. H., & Asendorpf, J. B. (1993). *Social withdrawal, inhibition, and shyness in childhood.* Hillsdale, NJ: Erlbaum.

Rubin, K. H., Bukowski, W., & Parker, J. G. (1998). Peer interactions, relationships, and groups. In W. Damon & N. Eisenberg (Eds.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (pp. 619-700). New York: Wiley.

Rubin, K. H., & Burgess, K. B. (2001). Social withdrawal and anxiety. In M. W. Vasey & M. R. Dadds (Eds.) *The developmental psychopathology of anxiety* (pp. 407-434). New York: Oxford University Press.

Rubin, K. H., Burgess, K. B., & Coplan, R. J. (2002). Social withdrawal and shyness. In C. H. Hart & P. K. Smith (Eds.), *Blackwell handbook of childhood social development* (pp. 330-352). Malden, MA: Blackwell Publishers.

Rubin, K.H., Burgess, K.B., & Hastings, P.D. (2002). Stability and social-behavioral consequences of toddlers' inhibited temperament and parenting. *Child Development*, 73, 483-495.

Rubin, K.H., Burgess, K.B., Kennedy, A.E., & Stewart, S. (2003). Social withdrawal in childhood. In E. Mash & R. Barkley (Eds.), *Child psychopathology*, 2nd edition (pp. 372-406). New York, NY: Guilford Press.

Rubin, K. H., Chen, X., & Hymel, S. (1993). The socio-emotional characteristics of extremely aggressive and extremely withdrawn children. *Merrill-Palmer Quarterly, 39,* 518-534.

Rubin, K. H., Daniels-Beirness, T., & Bream, L. (1984). Social isolation and social problem solving: A longitudinal study. *Journal of Consulting and Clinical Psychology, 52,* 17-25.

Rubin, K. H., & Krasnor, L. R. (1986). Social-cognitive and social behavioral perspectives on problem solving. In M. Perlmutter (Ed.), Cognitive perspectives on children's social and behavioral development: The Minnesota Symposia on Child Psychology (Vol. 18, pp. 1-68). Hillsdale, NJ: Erlbaum.

Rubin, K. H., & Stewart, S. L. (1996). Social withdrawal. In E. J. Mash & R. A. Barkley (Eds.), *Child Psychopathology* (pp. 277-310). New York: Guilford.

Rubin, K.H., Wojslawowicz, J.C., Burgess, K.B., Booth-LaForce, C., & Rose-Krasnor, L. (2004). The Best Friendships of Shy/Withdrawn Children. Unpublished manuscript under review, University of Maryland.

Rudolph, K. D., Dennig, M. D., & Weisz, J. R. (1995). Determinants and consequences of children's coping in the medical setting: Conceptualization, review, and critique. *Psychological Bulletin, 118,* 328-357.

Sandler, I. N., Tein, J. Y., & West, S. G. (1994). Coping, stress, and the psychological symptoms of children of divorce: A cross-sectional and longitudinal study. *Child Development, 65,* 1744-1763.

Sarason, I. G. (1975). Anxiety and self-preoccupation. In I. G. Sarason & C. D. Spielberger (Eds.), *Stress and anxiety* (Vol. 2, pp. 27-44). New York: John Wiley & Sons.

Simonian, S. J., Beidel, D. C., Turner, S. M., Berkes, J. L., & Long, J. H. (2001). Recognition of facial affect by children and adolescents diagnosed with social phobia. *Child Psychiatry and Human Development, 32,* 137-145.

Smari, J., Petursdottir, G., & Porsteinsdottir, V. (2001). Social anxiety and depression in adolescents in relation to perceived competence and situational appraisal. *Journal of Adolescence, 24,* 199-207.

Southam-Gerow, M. A., & Kendall, P. C. (2000). A preliminary study of the emotion understanding of youths referred for treatment of anxiety disorders. *Journal of Clinical Child Psychology, 29,* 319-327.

Spence, S. H. (2001). Prevention strategies. In M. W. Vasey & M. R. Dadds (Eds.)*The developmental psychopathology of anxiety* (pp. 325-351). New York: Oxford University Press.

Spence, S. H., Donovan, C., Brechman-Toussaint, M. (2000). The treatment of childhood social phobia: The effectiveness of a social skills training-based, cognitive-behavioural

intervention, with and without parental involvement. *Journal of Child Psychology and Psychiatry, 41,* 713 – 726.

Spence, S. H., Donovan, C., & Brechman-Toussaint, M. (1999). Social skills, social outcomes, and cognitive features of childhood social phobia. *Journal of Abnormal Psychology, 108,* 211-221.

Sroufe, L. A. (1996). *Emotional development: The organization of emotional life in the early years*. Cambridge, England: Cambridge University Press.

Sroufe, L. A., Schork, E., Motti, F., Lawroski, N., LaFreniere, P. (1984). The role of affect in social competence. In C. E. Izard, J. Kagan, & R. Zajonc (Eds.), *Emotions, Cognition, and Behavior* (289-319). Cambridge, England: Cambridge University Press.

Stein, M. B., Fuetsch, M., Muller, N., Hofler, M., Lieb, R., & Wittchen, H. (2001). Social anxiety disorder and the risk of depression: A prospective community study of adolescents and young adults. *Archives of General psychiatry, 58,* 251-256.

Stemberger, R. T., Turner, S. M., Beidel, D. C., & Calhoun, K. S. (1995). Social phobia: An analysis of possible developmental factors. *Journal of Abnormal Psychology, 106,* 280-297.

Stopa, L., & Clark, D. M. (1993). Cognitive processes in social phobia. *Behaviour Research and Therapy, 31,* 255-267.

Stormshak, E. A., Bierman, K. L., Bruschi, C., Dodge, K. A., Coie, J. D., & the Conduct Problems Prevention Research Group. (1999). The relation between behavior problems and peer preference in different classroom contexts.

Strauss, C. C., Frame, C. L., & Forehand, R. (1987). Psychosocial impairment associated with anxiety in children, *Journal of Clinical Child Psychology, 16,* 235-239.

Strauss, C. C., Lahey, B. B., Frick, P., Frame, C. L., & Hynd, G. W. (1988). Peer social status of
children with anxiety disorders, *Journal of Consulting and Clinical Psychology, 56,* 137-141.

Suveg, C., & Zeman, J. (2004). Emotion regulation in children with anxiety disorders. *Journal of
Clinical Child and Adolescent Psychology, 33,* 750-759.

Turner S. M. & Beidel, D. C. (1989). Social phobia: Clinical syndrome, diagnosis, and
comorbidity. *Clinical Psychology Review, 9,* 3 – 18.

Van Lieshout, C. F. M., Cillessen, A. H., and Haslager, G. J. T. (1999).  Interpersonal support
and individual development.  In W. A. Collins & B. Laursen (Editors), Relationships as
developmental contexts: Minnesota symposia on child psychology (Vol. 30, pp 37-60).
Lawrence Erlbaum: Mahwah, NJ.

Vasey, M. W. & Dadds, M. R. (2001). An introduction to the developmental psychopathology of
anxiety. In M. W. Vasey & M. R. Dadds (Eds.)*The developmental psychopathology of
anxiety* (pp. 3-26). New York: Oxford University Press.

Vasey, M. W. & Daleiden, E. L. (1996). Information-processing pathways to cognitive
interference in childhood. In I. G. Sarason, G. Pierce, & B. Sarason (Eds.), *Cognitive
interference: Theory, methods, and findings* (pp. 117-138). Hillsdale, NJ: Lawrence
Erlbaum.

Vernberg, E. M., Abwender, D. A., Ewell, K. K., & Beery, S. H. (1992). Social anxiety and peer
relationships in early adolescence: A prospective analysis. *Journal of Clinical Child
Psychology, 21,* 189-196.

Waas, G. A., & Graczyk, P. A. (1999). Child behaviors leading to peer rejection: A view from
the peer group. *Child Study Journal, 29,* 291-305.

Wallace, S. T., & Alden, L. E. (1991). A comparison of social standards and perceived ability in anxious and nonanxious men. *Cognitive Therapy and Research, 15,* 237-254.

Wallace, S. T., & Alden, L. E. (1995). Social anxiety and standard setting following social success or failure. *Cognitive Therapy and Research, 19,* 613-631.

Waters, E. & Sroufe, L. A. (1983). Social competence as a developmental construct. *Developmental Review, 3,* 79-97.

Weiss, D. D., & Last, C. G. (2001). Developmental variations in the prevalence and manifestation of anxiety disorders. In M. W. Vasey & M. R. Dadds (Eds.), *The developmental psychopathology of anxiety* (pp. 27-42). NY: Oxford University Press.

Wilson, B. J. (2003). The role of attentional processes in children's prosocial behavior with peers: Attention shifting and emotion. *Development and Psychopathology, 15,* 313-329.

Wittchen, H.-U., Stein, M. B., & Kessler, R. C. (1999). Social fears and social phobia in a community sample of adolescents and young adults: Prevalence, risk factors and co-morbidity, *Psychological Medicine, 29,* 309-323.

Younger, A., Gentile, C., & Burgess, K. (1993). Children's perceptions of social withdrawal: Changes across age. In K. H. Rubin & J. B. Asendorpf, J. B. (Eds.), *Social withdrawal, inhibition, and shyness in childhood* (215-235). Hillsdale, NJ: Erlbaum.

Zarbatany, L., Hartmann, D. P., & Rankin, D. B. (1990). The psychological functions of preadolescent peer activities. *Child Development, 61,* 1067-1080.

Zatz, S. & Chassin, L. (1985). Cognitions in test-anxious children under naturalistic test-taking conditions. *Journal of Consulting and Clinical Psychology, 53,* 393-401.

## APPENDIX A

**Read each of the following sentences carefully and circle the number that shows how true you think it is of you, in general.**

| MY WORRIES | Not at all | Hardly ever | Some-times | Most of the time | All the time |
|---|---|---|---|---|---|
| 1. I worry about doing something new in front of others....................………. | 1 | 2 | 3 | 4 | 5 |
| 2. I worry about being teased........................ | 1 | 2 | 3 | 4 | 5 |
| 3. I feel shy around people I don't know……. | 1 | 2 | 3 | 4 | 5 |
| 4. I only talk to people I know really well…… | 1 | 2 | 3 | 4 | 5 |
| 5. I feel that peers talk about me behind my back. | 1 | 2 | 3 | 4 | 5 |
| 6. I worry about what others think of me……. | 1 | 2 | 3 | 4 | 5 |
| 7. I'm afraid that others will not like me…….. | 1 | 2 | 3 | 4 | 5 |
| 8. I get nervous when I talk to peers I don't know very well……………………………. | 1 | 2 | 3 | 4 | 5 |
| 9. I worry about what others say about me….. | 1 | 2 | 3 | 4 | 5 |
| 10. I get nervous when I meet new people…… | 1 | 2 | 3 | 4 | 5 |
| 11. I worry that others don't like me…………. | 1 | 2 | 3 | 4 | 5 |
| 12. I am quiet when I'm with a group of people. | 1 | 2 | 3 | 4 | 5 |
| 13. I feel that others make fun of me....……. | 1 | 2 | 3 | 4 | 5 |
| 14. If I get into an argument, I worry that the other person will not like me……………… | 1 | 2 | 3 | 4 | 5 |
| 15. I'm afraid to invite others to do things with me because they might say no……………. | 1 | 2 | 3 | 4 | 5 |
| 16. I feel nervous when I'm around certain people…………………………………….. | 1 | 2 | 3 | 4 | 5 |
| 17. I feel shy even with peers I know very well. | 1 | 2 | 3 | 4 | 5 |
| 18. It's hard for me to ask others to do things with me…………………………………… | 1 | 2 | 3 | 4 | 5 |

(SAS-A; La Greca & Lopez, 1998)

**APPENDIX B**

WHAT DO YOU THINK

| **Read each situation carefully. For each question about the situation, circle the answer that you most agree with.** |
|---|

You have decided to join an after-school club. The first day you go to the club meeting, you walk into the room and see a group of about eight children. You don't know any of them yet. They look up when you walk toward them.

1. How likely do you think it is that the following things will happen?

| | | | | |
|---|---|---|---|---|
| ▪ They will talk about you. | *Not at all* | *A little* | *Somewhat* | *Very Likely* |
| ▪ They will notice you and smile. | *Not at all* | *A little* | *Somewhat* | *Very Likely* |
| ▪ One of the kids will tell you to go away. | *Not at all* | *A little* | *Somewhat* | *Very Likely* |

2. How would you feel if you were in this situation?

| | | | | |
|---|---|---|---|---|
| ▪ You would know what to do. | *Not at all* | *A little* | *Somewhat* | *Very much* |
| ▪ You'd be able to get along with them. | *Not at all* | *A little* | *Somewhat* | *Very much* |

3. If one of the kids told you to go away, how bad would that be?

    *Not at all bad*        *A little bad*        *Somewhat bad*        *Very bad*

---

You see a group of students from another class playing a great game. You walk over and want to join in. As you get closer, you hear them laughing.

1. How likely do you think it is that the following things will happen?

| | | | | |
|---|---|---|---|---|
| ▪ They'll laugh at you. | *Not at all* | *A little* | *Somewhat* | *Very Likely* |
| ▪ They'll be friendly and let you join in. | *Not at all* | *A little* | *Somewhat* | *Very Likely* |
| ▪ They'll get up and move away from you. | *Not at all* | *A little* | *Somewhat* | *Very Likely* |

2. How would you feel if you were in this situation?

| | | | | |
|---|---|---|---|---|
| ▪ You would know what to do. | *Not at all* | *A little* | *Somewhat* | *Very much* |
| ▪ You'd be able to get along with them. | *Not at all* | *A little* | *Somewhat* | *Very much* |

3. If they got up and moved away from you, how bad would that be?

    *Not at all bad*        *A little bad*        *Somewhat bad*        *Very bad*

---

Next week is your birthday and you want to throw a birthday party. You made a list of everybody you want to invite. You planned to ask them during lunch. Lunch starts and you walk toward some kids from your class that you want to invite.

1. How likely do you think it is that the following things will happen?

| | | | | |
|---|---|---|---|---|
| ▪ They'll say they won't come to your party. | *Not at all* | *A little* | *Somewhat* | *Very Likely* |
| ▪ They'll be excited about going to the party. | *Not at all* | *A little* | *Somewhat* | *Very Likely* |
| ▪ They'll make fun of you for asking them. | *Not at all* | *A little* | *Somewhat* | *Very Likely* |

2. How would you feel if you were in this situation?

| | | | | |
|---|---|---|---|---|
| ▪ You would know what to do. | *Not at all* | *A little* | *Somewhat* | *Very much* |
| ▪ You'd be able to get along with them. | *Not at all* | *A little* | *Somewhat* | *Very much* |

3. If they make fun of you for asking them, how bad would that be?

**APPENDIX C**

**Behavioral Observation Questions**

**\***Items for the present study are in bold.

*Pre-Test Questions (Talk Show Activity)*

12. How nervous are you?
    Not at all    A little    Somewhat    A lot    Very

13. How difficult do you think this interview will be?
    Not at all    A little    Somewhat    A lot    Very

**14. How well do you think you'll do?**
    **Very Poor    Poor    Okay    Well    Very Well**

**15. How certain are you that you can do as good a job as other kids?**
    **Not at all    A little    Somewhat    A lot    Very**

16. If you feel nervous, what strategies will you use to get through the interview? (i.e., what will you do to make yourself feel less nervous?) *Follow-up with "What else will you do?"*

*Post-Test Questions (Talk Show Activity)*

17.  How difficult do you think the talk show activity was?
    Not at all    A little    Somewhat    A lot        Very

18.  How well do you think the talk show went?
    Very Poor    Poor    Okay    Well    Very Well

**19.  How nervous were you during the talk show?**
    **Not at all    A little    Somewhat    A lot    Very**

20. How much were you able to pay attention to our conversation instead of how you were feeling or how you were doing?
    Not at all    A little    Somewhat    A lot    Very

**21. What strategies did you use when you felt nervous? (i.e., what did you do to make yourself feel less nervous?) *Follow-up with "What else did you do?"***

22. What are other strategies could you use? *Follow-up with "What else could you do?"*

**APPENDIX D**

**Dichotomous Codes for Coping Responses**

**Problem-Directed (P)**

Coping responses that (1) direct immediate action or attention <u>toward the interaction</u> (e.g., attempts to influence the conversation), or (2) involve appraisals/pretending <u>about the interaction</u> (e.g., non-threatening appraisals of the interaction; going along with the specified instructions (see below)—talk show/role play with another kid, etc.).

**Self-Directed (S)**

Coping responses that (1) direct immediate action or attention <u>toward the self or away from the interaction</u> (e.g., self-directed motor responses; positive statements about the self) and <u>toward emotion regulation</u> (e.g., relaxation), or (2) involve appraisals/pretending <u>about the self or something other than the specified situation</u> (e.g., thoughts about extraneous matters, presumably to distract attention from the interaction).

\*\*Code "NA**"** for any responses involving the camera, indicating no nervousness (e.g., "I wasn't nervous"), indicating no strategy (e.g., "nothing"), and indicating that the child forgot to use a strategy.

<u>Notes:</u>
<u>1.</u> When it is difficult to discern a code for a single statement, use the child's other statements as context through which to interpret the ambiguous statement. This should be used sparingly.

<u>2.</u> It is sometimes difficult to distinguish between a "P" and "S." For example, if the child reports a vague strategy such as "thought of something else" or "thought about things I like," give the benefit of the doubt by assuming "something else" is meant to facilitate the conversation (i.e., something else to talk about), and code "P," unless other responses from the same child indicate that it is probably another distracting "S" technique (e.g., also reports thinking about his/her animals, plans for the future, great grandmother, etc.).

<u>3.</u> It is sometimes difficult to distinguish between positive appraisals about the situation (P) and positive appraisals about the self (S). "Told myself <u>it</u> will go well" is a positive appraisal about the situation (P). "Told myself <u>I'll</u> do well" is a positive statement/appraisal of the self (S).

<u>Instructions for Talk Show Task</u>
Let's call our show The (*child's name*) Show. You will be the talk show host and I will be the guest on your show. So imagine I am another kid you do not know very well. (*Show the Job sheet and point to the tasks*) Your job is to ask me questions to get to know me, to tell me about yourself, and to keep the conversation going for a couple minutes. Remember, you are the host of the show, so it is your job to help us get to know each other.

**APPENDIX E**

**GLOBAL CODES: TALK SHOW HOST ACTIVITY**

Coders should watch the talk show host activity at least twice before finalizing their global ratings. Make ratings after watching the activity for the first time, then watch it again with particular attention to the ratings that seemed more questionable. Be sure to stop coding at exactly 3 minutes into the activity.

*1. Positive Facial Expression.* The specific behavioral indicators of facial expression include <u>smiles</u> and <u>laughs</u>. Consider the <u>frequency</u>, <u>intensity</u>, and <u>duration</u> of smiles and laughs throughout the interaction when making this rating.

How positive was this child's facial expression?
1: not at all
2: a little
3: somewhat
4: pretty
5. very

*2. Confidence.* This rating should be based on your overall sense of the child's confidence during the interaction. Body control, voice animation, facial expression, and statement content are some indicators of confidence and comfort, but your subjective sense of confidence may be influenced by other indicators and differential priority to these indicators. Children with low levels of confidence will appear reluctant, up-tight, and uncomfortable during the interaction, and children with high levels of confidence will appear self-assured, relaxed, and comfortable during the interaction.

How confident did this child appear during the interaction?
1: very little
2: a little
3: somewhat
4: a lot
5. very

*3. Sensitive Responding.* This rating should be based on your overall sense of the child's sensitive responding during the interaction, particularly (but not exclusively) when focused on the other. Indicators of sensitive responding include (1) demonstration of <u>attention</u> (e.g., eye contact when listening), (2) demonstration of <u>interest</u> (e.g., multiple follow-up questions and follow-up questions that increase the level of specificity), (3) <u>flexible responding</u> based on the apparent desire of the other (e.g., allowing the other to complete statements, allowing the other to stick with or change a topic; note: not sticking with a topic may indicate inflexibility), and (4) <u>validation</u> of the other (providing validating non-verbal and verbal feedback, affect matching).

How sensitive were this child's responses during the interaction?
1: very little
2: a little
3: somewhat
4: a lot
5. very

**4. Global Rating of Skillfulness.** This rating should be based on your overall sense of the child's skillfulness as a conversational partner in the context of the observed interaction. The above ratings should drive your determination of overall skillfulness, but other indicators may also be considered. In addition to the level of the above indicators, you may also consider the appropriateness of levels of the indicators. Your sense of the extent to which the child appeared enjoyable to talk with may be a useful guide for this rating.

How skillful was this child as a conversational partner during the interaction?
1: very little
2: a little
3: somewhat
4: a lot
5. very `

**APPENDIX F**

**For each statement, please indicate how well it describes this child.**

| | *Almost Never* | Rarely | Some-times | Most of the time | All the time |
|---|---|---|---|---|---|
| 1. This child is friendly……………………… | 1 | 2 | 3 | 4 | 5 |
| 2. This child is helpful to others....................... | 1 | 2 | 3 | 4 | 5 |
| 3. This child can give suggestions and opinions without being bossy………………………. | 1 | 2 | 3 | 4 | 5 |
| 4. This child is good at understanding other people's feelings.......................................…… | 1 | 2 | 3 | 4 | 5 |
| 5. This child is kind and cooperative with peers. | 1 | 2 | 3 | 4 | 5 |
| 6. This child controls his/her temper in a disagreement………………………………… | 1 | 2 | 3 | 4 | 5 |
| 7. This child resolves problems with peers on his/her own……………………………….. | 1 | 2 | 3 | 4 | 5 |
| 8. This child is withdrawn…………………... | 1 | 2 | 3 | 4 | 5 |
| 9. This child is a loner or a solitary child…… | 1 | 2 | 3 | 4 | 5 |
| 10. This child avoids peers or keeps peers at a distance………………………………………… | 1 | 2 | 3 | 4 | 5 |

(selected items from the SHP and Child Behavior Scale; CPPRG, 1992, Ladd & Profilet, 1996)

**APPENDIX G**

In this section, please write the full first and last names of your friends (do not use nicknames). If you are not sure about a friend's last name, write the last initial or put a star by the friend's name.
1) In the center circle put the names (first and last) of your very best friend or friends.
2) In the second circle put the names of people whom you consider to be good friends but not quite as special as those in the first circle.
3) In the third circle put the names of all your remaining friends.
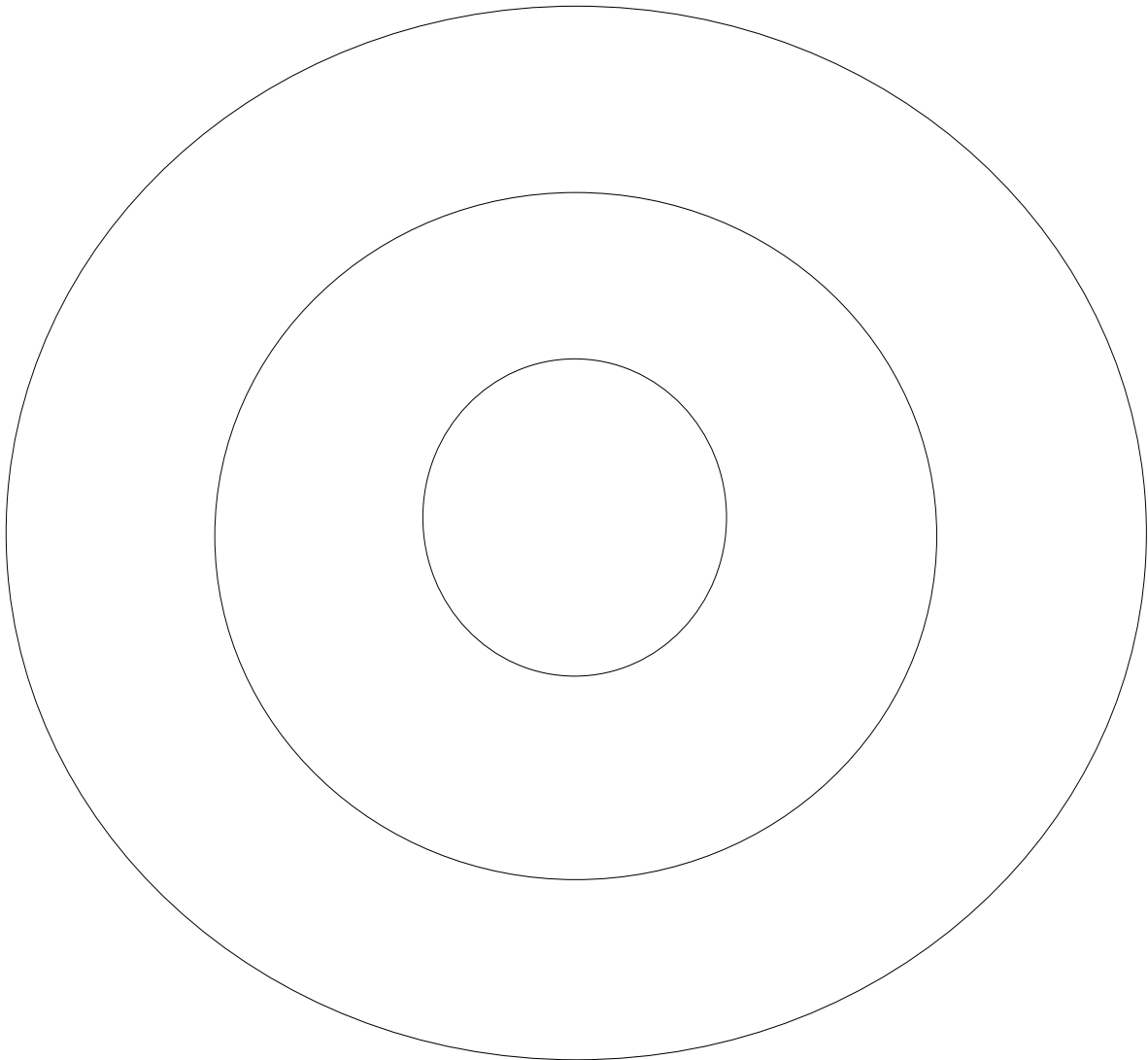
(Lansford & Parker, 1999)

Table 1

*Rates of Coping Strategies*

| Coping Strategies | Number Reported | Number of Children |
|---|---|---|
| Problem-Directed Coping Strategies (total) | 130 | 67 |
|     Conversation Focus – General | 29 | 23 |
|     Conversation Focus – Other | 49 | 38 |
|     Conversation Focus – Self | 21 | 19 |
|     Non-threatening Attribution – Friend | 10 | 9 |
|     Non-threatening Attribution - General | 12 | 9 |
|     Instruction Compliance | 9 | 8 |
| Self-Directed Coping Strategies (total) | 56 | 37 |
|     Relaxation | 25 | 22 |
|     Distraction | 11 | 6 |
|     Motor | 20 | 13 |
| Not Applicable | 13 | 12 |

Table 2

*Correlations Linking Social Behaviors with Social Anxiety and Peer Adjustment (N = 84)*

| | Social Behaviors | |
| --- | --- | --- |
| | Adaptive Social Behaviors | Social Interaction Skills |
| Gender | -.01 | -.12 |
| Social Anxiety | -.22* | -.16 |
| Peer Adjustment | | |
| Peer Acceptance | .40** | .27* |
| Peer Victimization | -.27* | -.24* |

*Note*: For gender, 0 = female; 1 = male. $^{+}p$ = .10. *$p$ < .05. **$p$ < .01.

Table 3

*Correlations Linking Social-Cognitive Factors with Social Anxiety, Social Behaviors, and Peer Adjustment (N = 84)*

| | Social-Cognitive Factors | | |
|---|---|---|---|
| | Social Performance Expectations | Problem-Directed Coping | Self-Directed Coping |
| Gender | .00 | .04 | .11 |
| Social Anxiety | -.27* | -.04 | .08 |
| Social Behaviors | | | |
| Adaptive Social Behaviors | .12 | .24* | -.09 |
| Social Interaction Skills | .25* | .23* | -.18[+] |
| Peer Adjustment | | | |
| Peer Acceptance | .28* | .18[+] | -.18 |
| Peer Victimization | -.01 | -.17 | .37** |

*Note*: For gender, 0 = female; 1 = male. [+]$p$ = .10. *$p$ < .05. **$p$ < .01.

Table 4

*Descriptive Statistics on Key Variables for Elevated and Normative Social Anxiety Subgroups*

| Variables | Normative Social Anxiety | | Elevated Social Anxiety | |
| --- | --- | --- | --- | --- |
| | *M* | *SD* | *M* | *SD* |
| Social Anxiety | 1.83 | .45 | 3.06 | .57 |
| Social-Cognitive Factors | | | | |
| Social Performance Expectations* | .21 | .79 | -.21 | .77 |
| Problem-Directed Coping Strategies | 1.57 | .99 | 1.52 | 1.25 |
| Self-Directed Coping Strategies | .62 | .85 | .71 | 1.04 |
| Social-Behavioral Factors | | | | |
| Adaptive Social Behaviors | 3.90 | .65 | 3.78 | .76 |
| Social Interaction Skills | 3.14 | .93 | 2.86 | .88 |
| Peer and Friendship Adjustment | | | | |
| Peer Acceptance (nominations) | 11.70 | 7.57 | 10.05 | 8.43 |
| Peer Victimization (nominations) | .67 | 1.36 | 2.43 | 6.49 |

*Note*: *Values are standardized scores. *n* = 42 for each subgroup.

Table 5

*Logistic Regressions Predicting Peer Acceptance and Peer Victimization Statuses (n = 42)*

| | Peer Acceptance Status | | | | Peer Victimization Status | | | |
|---|---|---|---|---|---|---|---|---|
| | *B* | *SE* | *O.R.* | $\chi^2$ | *B* | *SE* | *O.R.* | $\chi^2$ |
| Step 1 | | | | 9.16* | | | | 2.80 |
| Gender | 1.21 | .74 | 3.35 | | -.59 | .67 | .55 | |
| Self-Directed Coping | | | | | .41 | .34 | 1.50 | |
| Adaptive Social Behaviors | .53 | .51 | 1.70 | | | | | |
| Social Interaction Skill | .94 | .46 | 2.55* | | .11 | .39 | 1.11 | |
| Step 2 | | | | 7.26* | | | | 2.74 |
| Self-Directed x Gender | | | | | 1.33 | .92 | 3.79 | |
| Adapt. Behavior x Gender | 2.74 | 1.42 | 15.42[+] | | | | | |
| Social Int. Skill x Gender | -1.35 | 1.17 | .26 | | .76 | .90 | .72 | |

*Note*: O.R. = odds ratio. Blank cells indicate that independent variable was not entered in equation predicting the dependent variable. [+]$p < .10$. *$p < .05$.

Figure 1. *Links between Social Anxiety and Peer Victimization for Boys and Girls*
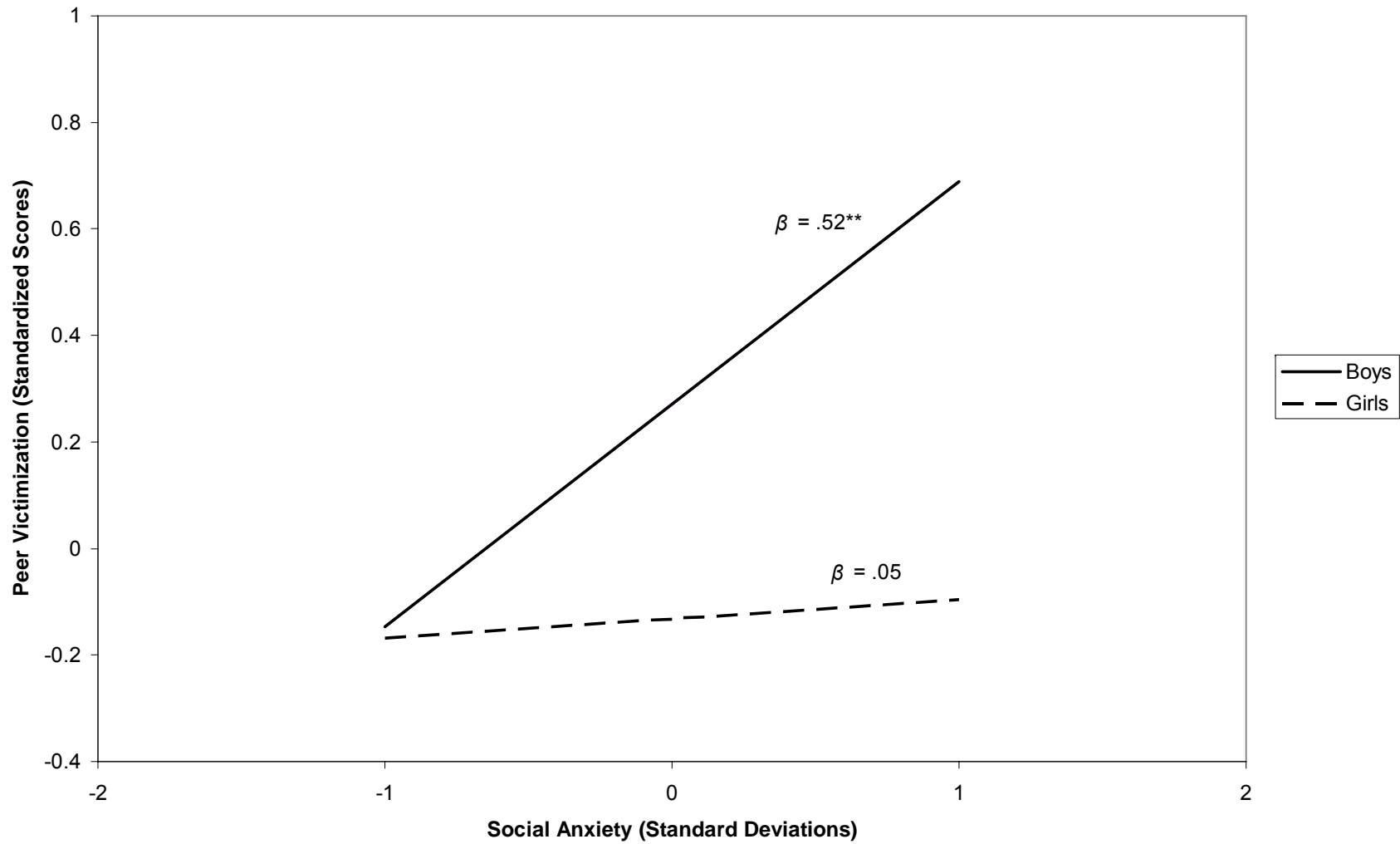
Figure 2. *Links between Adaptive Social Behaviors and Peer Victimization for Boys and Girls*
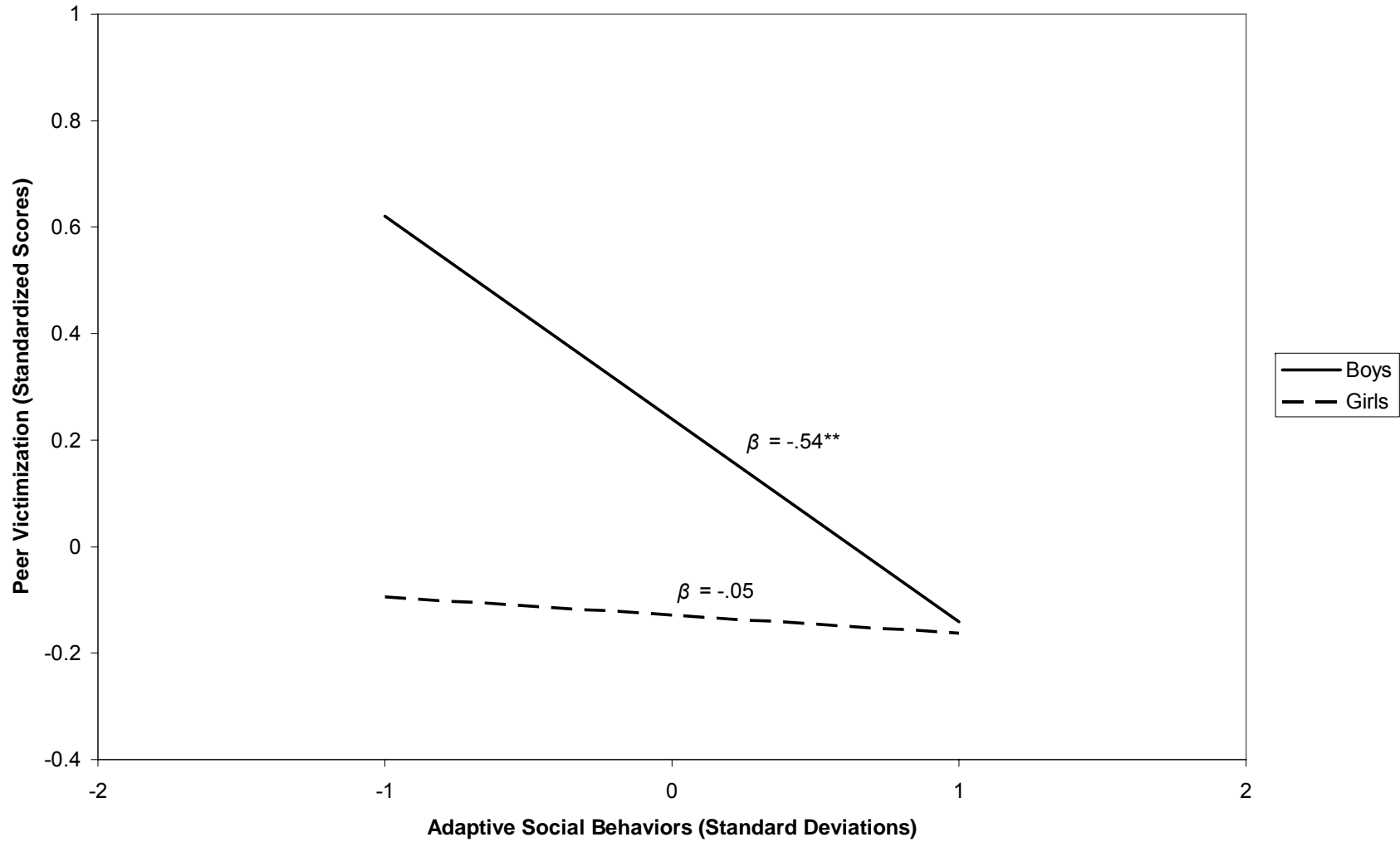
Figure 3. *Links between Social Interaction Skills and Peer Victimization for Boys and Girls*
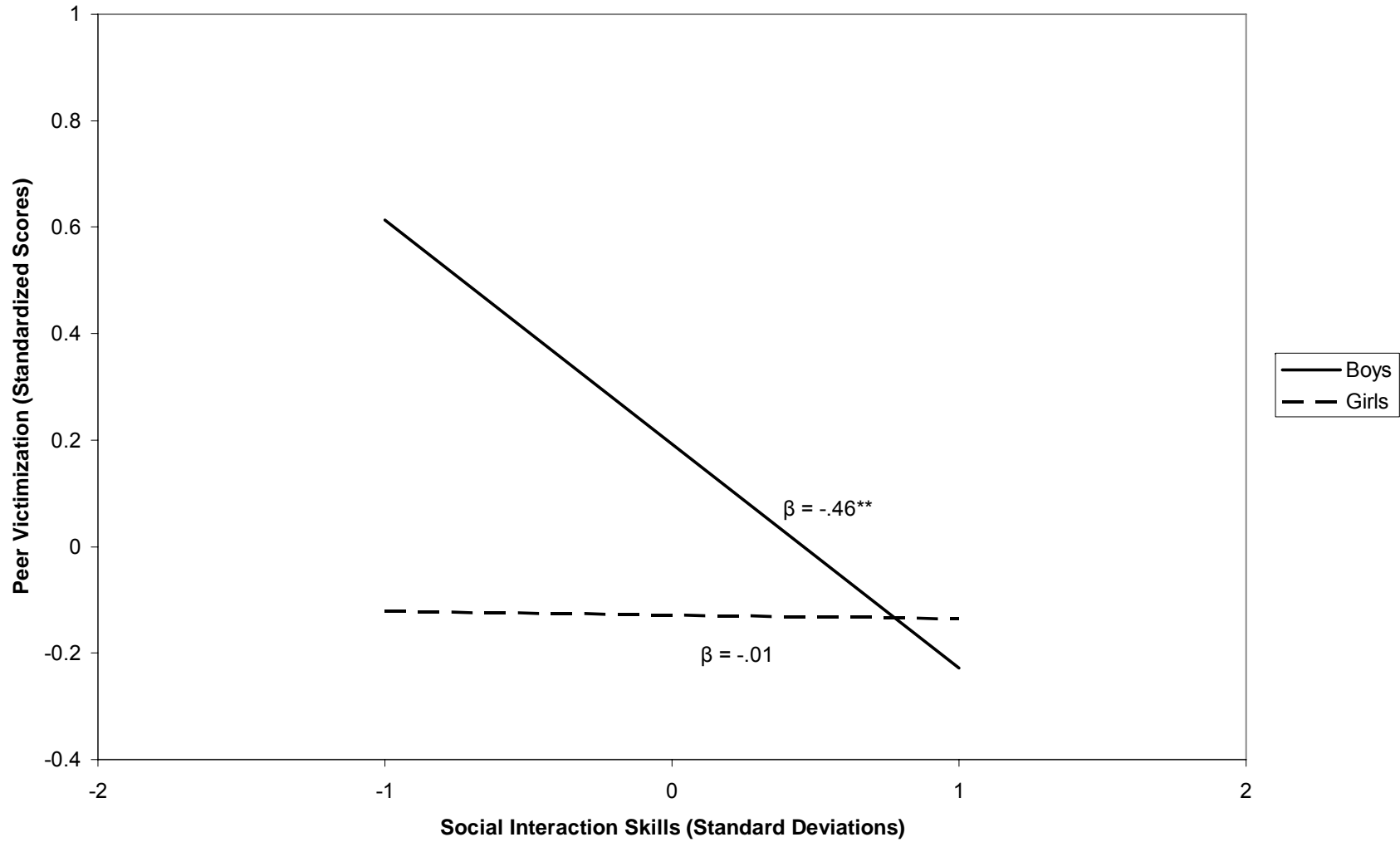
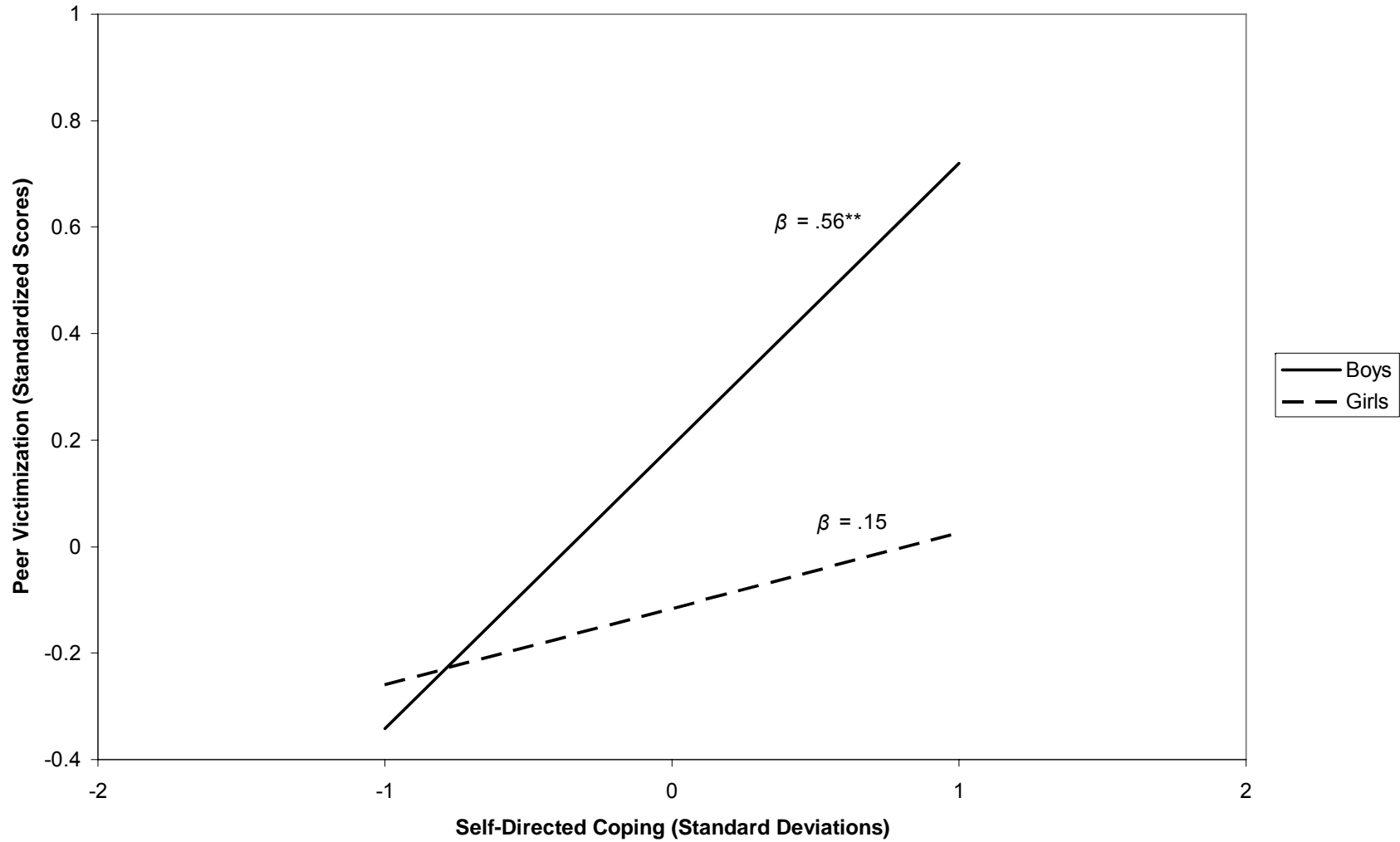Figure 4. *Links between Self-Directed Coping and Peer Victimization for Boys and Girls*

Figure 5. *Hypothesized Model Linking Child Social Anxiety with Peer Maladjustment*
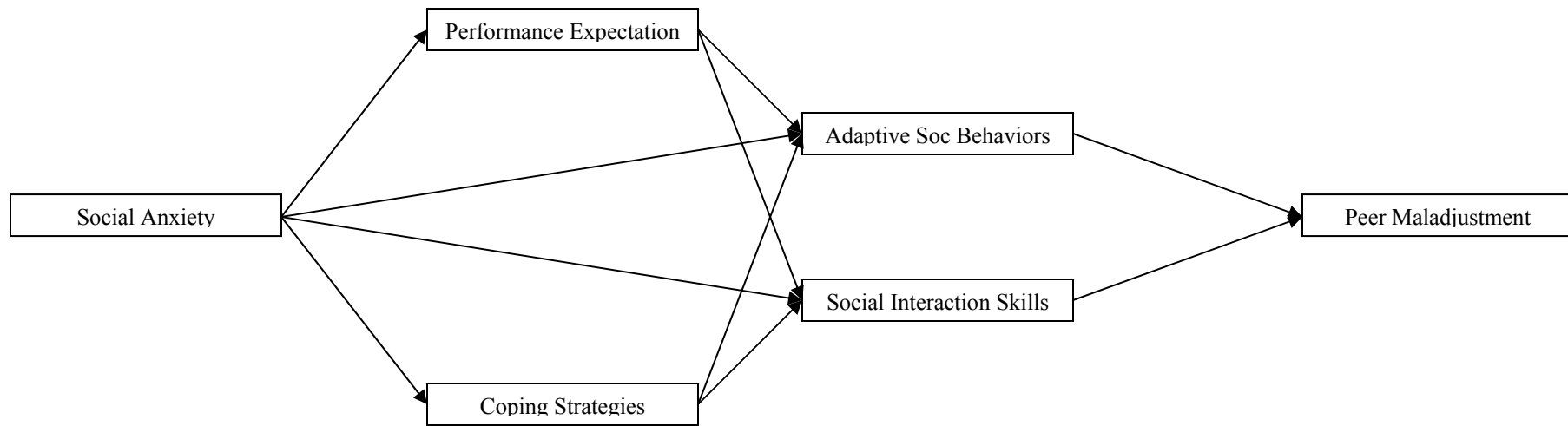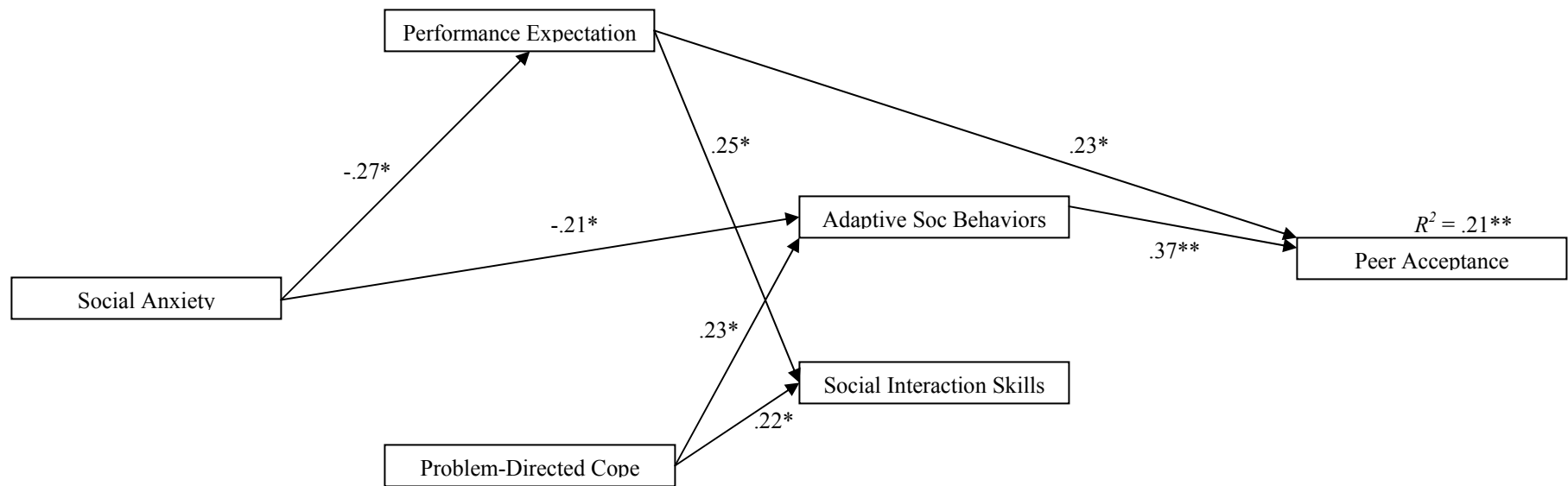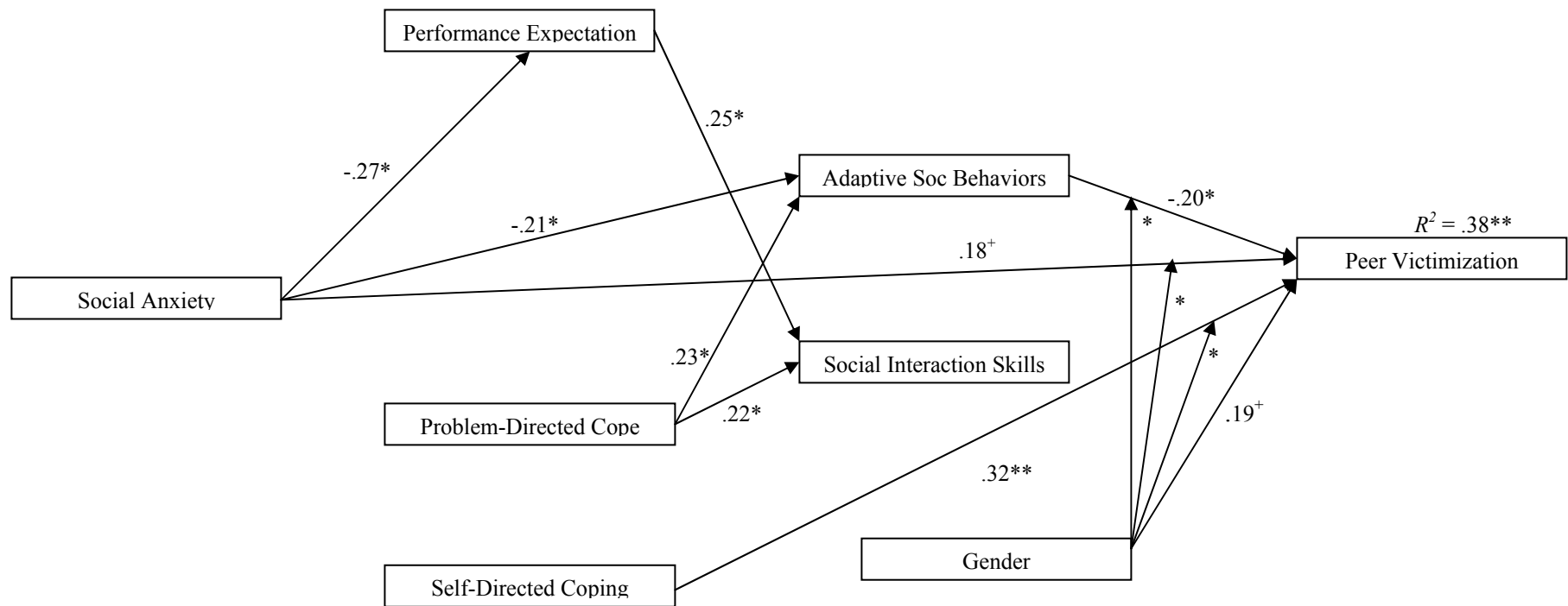
Figure 6. *Final Regression Model Linking Child Social Anxiety with Peer Acceptance (N = 84)*



*Note*: Values are standardized regression coefficients. *p* < .05. **p* < .01.

Figure 7. *Final Regression Model Linking Child Social Anxiety with Peer Victimization*



*Note*: Values are standardized regression coefficients. *Post-hoc analyses describing gender interactions are described in the Results section (p. 51). [+]*p* < .10. **p* < .05. ***p* < .01.

**Vita**

Stephen A. Erath

| | |
|---|---|
| 2002 – 2006 (expected) | Ph.D., The Pennsylvania State University, University Park, PA<br>Major: Clinical Psychology   Minor: Developmental Psychology |
| 2005 – 2006 | Clinical Internship, The University of Mississippi Medical Center Jackson, MS |
| 2000 – 2002 | M.S., The Pennsylvania State University, University Park, PA<br>Major: Clinical Psychology |
| 1995 – 1999 | B.S., Texas A&M University, College Station, TX<br>Major: Psychology |