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The present study sought to examine the role of friendship in the link between early individual risk and subsequent internalizing behavior. A model indicating friendship characteristics as mediating mechanisms between early individual risk and subsequent internalizing behavioral outcomes was tested using a longitudinal sample of children between the ages of 5 and 10.5 years. Two social behaviors were examined as early (5 year) individual risk factors for subsequent internalizing problems: early withdrawal and aggression. Characteristics for withdrawn and socially skilled behaviors in 2nd grade friends were targeted as mediators in the relation between early risk and subsequent internalizing problems. Finally, gender was examined as a potential moderator for specific mediation pathways**.** Support for the overall meditational model was not obtained; however, results supported gender as a moderator for boys' withdrawn behaviors and internalizing outcomes, highlighting the importance of gender roles in development. Additionally, findings highlighted several future research goals. The presented work provides a preliminary step in understanding the impact of children's friends on risk for internalizing behaviors. Ultimately, these results may shed light on unanswered questions that may help inform social intervention for children at risk for anxiety and depression.

FRIENDSHIP AND RISK FOR INTERNALIZING BEHAVIOR: UNDERSTANDING THE SELECTION AND SOCIALIZATION OF MALADAPTIVE BEHAVIOR

by

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Approved by

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To my wonderful husband, parents, siblings, friends and family. Thank you for your endless support throughout my graduate career.

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

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CHAPTER I

INTRODUCTION

Internalizing behaviors, such as anxiety and depression, can manifest across the lifespan and are often disruptive to interpersonal relationships. Developmental research investigating anxiety and depression in youth and adolescence typically examines patterns of broad internalizing problems, including subclinical and clinical ranges of anxious and depressive symptoms. Although symptom presentation may change across development, longitudinal work from toddlerhood to late adolescence indicates underactivity, lethargy, unhappiness, sadness, social withdrawal, nervousness, tenseness, fearfulness, timidity, and self-consciousness as core symptoms of internalizing disorders during this developmental period (Sterba, Prinstein, & Cox, 2007). Researchers estimate that roughly 10 % of the school-aged population world-wide experience internalizing symptoms, and that anxiety, in particular, is among the most common diagnoses experienced by children and adolescence (Costello, Egger, & Angold, 2005; Costello, Mustillo, Erkanli, Keeler, & Angold, 2003).

Some research has argued that, on average, broad internalizing symptoms in school-age children are relatively stable (Kraatz Keiley, Bates, Dodge, & Pettit, 2000). However, it is important to note that this pattern differs between maternal and teacher report, with teachers reporting an increase in internalizing symptoms over time (Kraatz

Keiley et al., 2000). Furthermore, research taking a person-oriented, as opposed to variable-oriented, approach shows significant variability in trajectories of internalizing behavior. Although some differences appear regarding the number of classes and specific patterns of growth observed across studies, evidence for three classes of children consistently emerge between toddlerhood and preadolescence: a high stable class, an increasing class, and a low stable class (Feng, Shaw, & Silk, 2008; Sterba et al., 2007; McLeod & Fettes, 2007). While most children display symptoms within the normative and stable range, there are subgroups of children who show distinct patterns of elevated internalizing symptoms across development.

Although some sadness and anxiety in youth is considered developmentally normative (Muris, Merckelbach, Gadet, & Moulaert, 2000), excessive internalizing behavior in childhood can be associated with a host of negative outcomes, including impairments in peer relationships, lowered self esteem, poor academic performance, somatoform symptoms, behavioral problems, suicide, and substance use (Essau, Conradt, & Petermannn, 2002; Kendall, Brady, & Verduin, 2001; Strauss, Frame, & Forehand, 1987). Furthermore, early internalizing behaviors are associated with greater incidence of life stress and psychological impairment in late adolescence and adulthood (Costello & Angold, 1995; Costello et al., 2005; Keller, Lavori, Wunder, & Beardslee, 1992), indicating a pervasive pattern of difficulty across the lifespan. Thus, the impact of internalizing behavior in youth is not contained to a discrete time period during which symptoms are measured. These behaviors often increase risk for a lifetime of poor outcomes.

Given this pattern, research has examined risk and protective factors that might mitigate these negative outcomes. Childhood friendship is one area that has received some attention (Berndt, 1999, 2004; Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006). Work examining friendship and adjustment consistently demonstrates that nuances within the characteristics of a friend qualify the association between friendship and adjustment (Berndt, 1999, 2004; Parker et al., 2006). Friends who show pro-social and normative behavioral characteristics aid in adaptive social and emotional development, while friends who show less favorable characteristics contribute to the development of maladaptive behaviors. However, to date, our knowledge is largely correlational and much of what is known about friendship and maladaptive behavior is based on work in externalizing adolescent populations (Roisman, Aguilar, & Egeland, 2004; Dishion & Piehler, 2007). No work has specifically examined how the characteristics of a friend might impact the association between early individual risk factors and subsequent internalizing symptoms in preadolescence.

Given this gap within the literature, the primary aim of the present project was to examine the role of friendship in the link between early individual risk and subsequent internalizing behavior. Within this goal, a developmental psychopathology approach was employed to identify patterns of equifinality and multifinality that explain how friendship may influence internalizing behavior over time (Cicchetti, 2006). Ultimately, the goal was to identify moderators and mechanisms in the link between a child's individual behavioral risk factors and subsequent internalizing behaviors emerging in preadolescence.

Based on the existing literature, two social behaviors were examined as early individual risk factors for subsequent internalizing problems: early social withdrawal and aggression. Friendship characteristics that are empirically and theoretically associated with internalizing outcomes were specifically targeted as mediators in the relation between early risk and subsequent internalizing problems; these included a friend's withdrawn and socially skilled behavior. Finally, as there is data to suggest gender difference according to prevalence of internalizing outcomes, as well as across friendship constructs, gender was examined as a potential moderator for this meditational model (Aveneovoli, Knight, Kessler, & Merikangas, 2008; Carter, Joyce, Mulder, Luty, & McKenzie, 2000; Else-Quest, Hyde, Goldsmith, & Van Hulle, 2006; Rose & Rudolph, 2006).

Early Individual Risk

A developmental psychopathology perspective asserts a complicated interplay between early risk, developmental tasks, and pathology, whereby deficits in one area often interfere with successful completion of developmental tasks and result in a cascade of maladaptation across time (Cicchetti & Rogosch, 2002; Cicchetti, 2006; Murray Close et al., 2010). Researchers have observed that early social behaviors, including social withdrawal and aggression, are examples of salient risk factors that are consistently linked to subsequent interpersonal, academic, and emotional adjustment outcomes throughout the lifespan (Bohlin, Hagekull, & Andersson, 2005; Coplan & Armer, 2007; Coplan, Findlay, & Nelson, 2004).

Socially withdrawn children are described as showing reticent behavior, shyness, negative affect, and solitude (Rubin & Coplan 2004). Children with these behavioral traits are considered temperamentally inhibited, wary, and reactive to novel stimuli (Kagan, 1997). Socially withdrawn children are consistently less likely to approach a peer group across both familiar and non-familiar social environments, are less engaged with their peers, and often experience increased physiological arousal to novel social environments (Fox, Henderson, Rubin, Calkins, & Schmidt, 2001; Rubin & Asendorpf, 1993; Rubin & Coplan 2004; Schmidt & Tasker, 2000). Typically, these are children who observe their peers from a distance and engage in anxious on-looking behavior and solitude (Coplan, Rubin, Fox, Calkins, & Stewart, 1994; Henderson, Marshall, Fox, & Rubin, 2004). Research indicates that social withdrawal is among the most robust predictors of anxiety and depression in middle childhood and adolescence (Coplan & Armer, 2007; Oh et al., 2008).

Research has also indicated early aggression as a potential risk factor for subsequent internalizing problems, particularly depression (Angold & Costello, 1993; Messer & Gross, 1994; Panak & Garber, 1992). Temperamentally, aggressive children are often described as undercontrolled and high on negative emotionality (e.g., anger and frustration; Janson & Mathiesen, 2008; Rothbart & Bates, 2006). Although traditionally linked to externalizing outcomes, early aggression has broad implications for social and emotional outcomes. Children with these behavioral traits show few early signs of internalizing problems in childhood; however, they often experience disruptions in their parent-child, student-teacher, and peer relationships as a consequence of their underlying

behavioral problems. From a developmental psychopathology prospective, deficits in one area of functioning often cascade negative effects in other areas of functioning (Murray Close et al., 2010). Researchers argue that this consistent negative interpersonal feedback from the social environment creates risk for subsequent comorbid depression and/or anxiety in childhood and adolescence (Morrow, Hubbard, Rubin, & McAuliffe, 2008; Patterson & Capaldi, 1990).

These early social behaviors are especially important when considering developmental tasks in middle childhood and early adolescence. As children enter elementary school, they must 1) successfully navigate a new peer environment and 2) work to form meaningful friendships (Berndt, 1996). Children with withdrawn and aggressive behavioral profiles tend to display significant deficits in social competence and skill, and typically exist on the periphery of their larger peer group. For example, with regard to their broader peer environment, socially withdrawn children are more likely to be rejected, neglected, excluded and victimized by their peer group relative to non-anxious children (Dodge, Coie, & Brakke, 1982; Gazelle & Ladd, 2003; Verduin & Kendall, 2008). Similarly, early aggressive behavior is linked to problems within the social environment, including lowered social competency ratings (particularly with regard to cooperation) and higher rates of peer rejection (Dodge, Coie, Pettit, & Price, 1990; Dubow, 1988; Hughes, White, Sharpen, & Dunn, 2000; Malti, 2006; Stormshak & Webster-Stratton, 1999).

Within dyadic exchanges there is also evidence for the negative impact of withdrawn and aggressive behaviors on children's friendships. Although socially

withdrawn and aggressive children typically have at least one mutually acknowledged friend (Brendgen, Vitaro, Turgeon, & Poulin, 2002; Hektner, August, & Realmuto, 2000; Newcomb, Bukowski, & Bagwell, 1999; Parker & Asher, 1993; Rubin, Wojslawowicz, Rose-Krasnor, Booth-LaForce, & Burgess, 2006), their friendships are often of poorer quality and many times, these friends also exhibit problem behaviors themselves (Berndt, Hawkins, & Jiao, 1999; Cleveland & Wiebe, 2003; Cohen & Prinstein, 2006; Dishion, 2000; Mariano & Harton, 2005; Oh et al., 2008; Prinstein, 2007; Stevens & Prinstein, 2005).

Importantly, the social difficulties that are associated with early withdrawn and aggressive behaviors pose additional risk for internalizing outcomes. Longitudinal work by Mesman and colleagues (Mesman, Bongers, & Koot, 2001) provides compelling evidence for broad social problems (e.g., difficulty getting along with peers, acting young for one's age, preferences to play with younger children, clumsiness) mediating both homotypic and heterotypic effects of early withdrawal and aggression mediation on subsequent internalizing outcomes. They followed a sample of children across early and middle childhood (2-10 years old) and collected parent and teacher reports of early withdrawn/depressive, aggressive, overactive, and oppositional behaviors, as well as parent and teacher reports of social problems and internalizing and externalizing behaviors at 3 time points (roughly, preschool, kindergarten, and 5th grade). Results showed that social problems mediated pathways between early aggression and early withdrawal to internalizing outcomes. Similar work (Palmen, Vermande, Deković, & van Aken, 2011) has validated this meditational pathway and shown evidence for early

aggression predicting social failures (e.g., low peer status ratings) which subsequently predict internalizing outcomes (e.g., loneliness). However, despite evidence showing that aggressive and withdrawn children typically have at least one friend, thus far the presence vs. absence of a friend has been the predominate friendship construct examined within a developmental cascades approach (Bukowski, Laursen, & Hoza, 2010). Therefore, more work is needed to examine the impact of maladaptive friend characteristics and quality in the pathways between early withdrawl and aggression, and subsequent pathology.

A smaller body of work examining the co-occurrence of aggressive and socially withdrawn behavior in youth has documented subgroups of children who show elevations on aggression only (aggressive children), social withdrawal only (withdrawn children), and both aggressive and socially withdrawn behaviors (aggressive-withdrawn children; Farmer & Bierman, 2002; Hymel, Bowker, & Woody, 1993; Oldehinkel, Hartman, DeWinter, Veenstra, & Ormel, 2004; Ladd & Burgess, 1999; Rydell, Thorell, & Bohlin, 2009). Unfortunately, despite evidence that these behaviors co-occur, less is known with regard to the implication for children demonstrating higher levels of both risk behaviors. Some research in this area has moved towards examining differential outcomes for peer acceptance, friendship, and student-teacher relationships that can be attributed to co-occurring aggression and withdrawal. This work indicates a moderate stability of behavioral profiles across elementary school (Ladd & Burgess, 1999) and that when compared to withdrawn or aggressive children, aggressive-withdrawn children are at the highest risk for subsequent interpersonal and adjustment outcomes (Farmer & Bierman, 2002; Hymel et al., 1993; Ladd & Burgess, 1999).

For example, Ladd and Burgess (1999) compared groups of aggressive, withdrawn, aggressive-withdrawn, and control children (within normative ranges on ratings for aggressive and withdrawn behaviors) on measures of teacher, peer, friendship, and social adjustment (loneliness and social satisfaction) outcomes at 4 time points between kindergarten and 2nd grade. Results showed that children in the co-occurring aggression-withdrawn behavior group were consistently more rejected, victimized, friendless and dissatisfied with their social environment as compared to the control group. Furthermore, this group was also consistently more rejected, victimized, dissatisfied, and had fewer friends relative to aggressive and withdrawn children across all four assessment points. Similar patterns have been demonstrated highlighting the increased risk associated with co-occurring withdrawal and aggression with regard to academic performance, peer acceptance, teen pregnancy, and preschool peer play and social competence outcomes (measuring early co-morbid internalizing and externalizing behaviors; Cohen & Mendez, 2009; Farmer & Bierman, 2002; Hymel et al, 1993; Ladd & Burgess, 1999; Ledingham, 1981; Ledingham & Schwartzman, 1984; Serbin, Peters, McAffer, & Schwartzman, 1991). However, to date, no work has examined the impact of early aggressive-withdrawn behavior on internalizing outcomes specifically. Given the evidence outlined above for the increased risk associated with the co-occurrence of aggression and withdrawal, as well as the previously established links between each individual risk factor and subsequent internalizing behavior, it seems likely that children high on both constructs may be at increased risk for subsequent internalizing behaviors. Furthermore, because aggressive-withdrawn children show the poorest outcomes within

social and interpersonal atmospheres (e.g., Ladd & Burgess, 1999; Farmer & Bierman, 2002), it follows that the severity of risk for internalizing outcomes relative to more homogenous groups of withdrawn and aggressive behavior may also be elevated.

Although a significant amount of work has documented the impact of early withdrawn and aggressive behavior on subsequent peer and friendship constructs, as well as outcomes of pathological behaviors, an important next step within this literature is to examine more specific domains of difficulty related to the successful formation of friendships (e.g., characteristics of friends) as mediators between early risk and subsequent maladaptive outcomes. With a more narrow focus, the field can better understand the impact that friendships have in this interplay between early risk and subsequent pathology and identify what specific failures in normative friendship development lead children to internalizing outcomes from these early risk behaviors. This knowledge will best inform intervention and prevention programs.

Friendship

Developmentalists conceptualize friendship as a voluntary relationship characterized by mutual liking between two parties (Bukowski, Newcomb, & Hartup, 1998). Researchers who refer to friendship often operationalize this construct in terms of reciprocity. Researchers estimate that between 70-85% of school-aged children have at least 1 friend, with younger children (e.g., elementary school) reporting more friends, on average, than adolescents (Berndt, 2004; Parker & Asher, 1993; Vaquera & Kao, 2008).

Methodologically, friendship is assessed in a variety of ways, including target child nomination of friendship (unilateral friends), as well as sociometric nominations for

reciprocated liking (mutual friends; Parker & Asher, 1993; Cairns, Leung, Buchanan, & Cairns, 1995). Research also varies in the number of friendships considered, ranging from dichotomous categorization (having a friend or not) to continuous variables indicating a range in number of friends (Berndt, 1999; Cairns et al., 1995; Furman, 1998; Simpkins, Eccles, & Becnel, 2008). Currently, there is no consensus in the field regarding the measurement of a friend and researchers commonly use both unilateral and mutual friendship nominations.

The significance of children's friendships was first emphasized by early theorists such as Piaget, Vygotsky, and Sullivan, who believed that peer relations make important contributions to development that are unique to the egalitarian quality of their relationship (Parker et al., 2006). In fact, several prominent theories of development recognize the importance of friendship for its role in social cognitive development, behavioral modeling and feedback, need fulfillment, and coping.

Social skills. Stemming largely from the work of Piaget (1932), researchers assert that friendship functions as an opportunity for children to interact in a way that promotes social-cognitive development. More specifically, it has been argued that symmetrical, peer-peer exchanges allow for important perspective-taking and problem-solving opportunities that cannot otherwise be obtained within adult-child interactions. Children learn to question discrepancies between their own perceptions and those of their peers and work together to solve mutual problems. According to Hartup (1998), these opportunities manifest through cooperative and collaborative play exchanges that occur frequently between friends and may likely be influenced by the quality of the friendship.

Thus, a child who is friendless or who has a lower quality friendship (e.g., more conflict than cooperation) is at risk for missing these unique opportunities for enhancing social-cognitive skills.

Several empirical studies support this theory (see Gauvain, 2001). In general, this work shows that children who work together on a problem are capable of solving more difficult problems than either could solve independently and that cognitive gains made within this dyadic interaction can be generalized to other problem-solving circumstances. However, this advancement is not as strong when the problem solving-pair shares a similar perspective or understanding of the problem. Furthermore, when children are paired with a partner with a less sophisticated understanding of a problem, there is some risk that the more advanced partner may regress in skill, especially if they are not confident in their thinking, and collaborations between friends, in particular, promote greater development as opposed to collaborations between children who are not identified as friends. Specific to social-cognitive development, research has demonstrated that children make more hostile attributions for non-friend's vs. friend's behaviors (Peets, Hodges, Kikas, & Salmivalli, 2007), and the prosocial vs. aggressive characteristics of one's friend promote prosocial vs. aggressive social problem-solving approaches, respectively (Brendgen, Bowen, Rondaue, & Vitar, 1999), Thus, there is strong evidence to suggest that children's peer interactions, and friendships in particular, function as a context for the development of social-cognitive skill.

In addition to social cognitive development, the social learning theory perspective suggests that children learn important social skills by observing and experiencing the

consequences of social behaviors (Bandura, 1977). Friends provide an arena for vicarious learning and behavioral modeling where children learn new behaviors by observing the consequences experienced by their friends. Friends also provide important opportunity for social practice and interpersonal feedback, such as acceptance, praise, rejection, and criticism, which shape a child's social interaction and behavior. Furthermore, friendships lay a foundation for self-efficacy, as children compare themselves to like peers as a means of estimating their own competencies (Nangle, Erdley, Adrian, & Fales, 2010; Bandura, 1977). Research supporting this perspective highlights the importance of peer feedback in the development of several socially relevant behaviors, including prosocial behavior, aggression, and gender-stereotyped behaviors (Ollendick & Schmidt, 1987; Moller, Hymel, & Rubin, 1992; Vitaro, Brendgen, & Tremblay, 2000). Additionally, support for the influence of behavioral modeling and feedback may also be implied from research finding patterns of behavioral similarity between friends over time (Cleveland & Wiebe, 2003; Cohen & Prinstein, 2006; Dishion, 2000; Mariano & Harton, 2005; Prinstein, 2007; Stevens & Prinstein, 2005).

Support. Friendship also functions as an important source of need fulfillment in childhood and adolescence. Sullivan (1953) argued that friendships provide a unique opportunity for interpersonal companionship and validation. Friendships become increasingly important across middle childhood and adolescence as they fulfill an emerging need for a close, intimate, same-sex relationship. Sullivan asserted that friendship is extremely important during this developmental period and has the potential

to provide compensatory correction to previous adverse experiences (e.g., poor parent-child relationships), while also influencing a child's feeling of loneliness and social skills. Much of the work on friendship quality stems from Sullivan's theory. Although there is support for the importance of intimacy during adolescence (Buhrmester, 1996; Hartup & Stevens, 1997), researchers have recognized that young children's friendships can also be characterized by intimacy and closeness, and that even in early elementary school, the quality of a child's friendship is associated with loneliness (Ladd, 2005).

Finally, psychologists have also recognized that, across the lifespan, friendships provide an important source of social support that is critical during times of increased stress (Ladd & Kochenderfer, 1998). For example, opportunities for self-disclosure, validation, and caring within a friendship may provide an appropriate outlet for verbal venting and emotion regulation. Similarly, a child whose friend offers aid and protection might seek this friend as a resource for coping with an aversive peer exchange. These exchanges allow for intimacy, trust, security, satisfaction, closeness, increased self-esteem and self-worth, and serve as a supportive context in which a child might endure other stressors in their environment. Several studies provide evidence for friendship as an important source of social support and buffer for adjustment and stress, especially with regard to school transitions and school adjustment (Berndt, Hawkins, & Jiao, 1999; Erath et al., 2008; Ladd & Kochenderfer, 1998; Ladd, Kochenderfer, & Coleman, 1997; Wentzel, Barry, & Caldwell, 2004).

Taken together, there is compelling evidence for the benefits of friendship in normative social and emotional development. However, the advantages outlined above

are largely based on a normative friendship profile. It is important to consider that a friendship with a peer with maladaptive characteristics may be less protective and beneficial for development.

Risky Friendship Characteristics

A substantial amount of work has examined the construct of homophily, or the tendency for people to display characteristics similar to those displayed by their friends. Over the past several decades, research has highlighted the similarity between friendship dyads, including demographic variables such as gender, race, and socioeconomic status. More recently, this work has shifted toward examining friend's behavioral characteristics, including prosocial behavior and externalizing and internalizing symptoms. School-aged children not only tend to befriend children who are similar to themselves in terms of sex and race (Graham, Cohen, Zbikowski, & Secrist, 1998), but youth and their friends also share similar behavioral profiles, such that friends are typically more similar than non-friends in terms of prosocial behavior, social skills, shyness, aggression, depression, and substance abuse (Berndt et al., 1999; Cleveland & Wiebe, 2003; Cohen & Prinstein, 2006; Conway, Rancourt, Adelman, Burk, & Prinstein, 2011; Dishion, 2000; Mariano & Harton, 2005; Oh et al., 2008; Prinstein, 2007; Stevens & Prinstein, 2005).

Consistent with research on homophily, children and adolescents with behavioral profiles for social withdrawal tend to have friends who share these same behavioral traits (Berndt et al., 1999; Berndt & Keefe, 1995; Cohen, & Prinstein, 2006; Oh et al., 2008; Rubin et al., 2006; Simpkins et al., 2008, Stevens & Prinstein, 2005). Homophily for risk for internalizing behavior is evident within cross-sectional and longitudinal work,

implying that children (as young as 5th grade) have concurrent friends who demonstrate similar risk for internalizing behavioral profiles *and* that adolescents with friends with risk for internalizing characteristics show increases in internalizing behavior over time. However, to date, the majority of this work is descriptive and identifies patterns of association rather than predictive processes. Although many authors speculate about the "contagion" of internalizing behavior within their discussions, only a handful of papers have specifically examined this phenomenon for internalizing traits. For the purpose of this project, two specific friendship characteristics are identified as posing a risk for internalizing outcomes: social withdrawal and social skills.

Social withdrawal. Correlational research has demonstrated a consistent pattern of association between friends' levels of socially withdrawn behavior (Berndt, & Keefe, 1995; Cohen, & Prinstein, 2006; Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998; Kupersmidt, DeRosier, & Patterson, 1995; Rubin et al., 2006; Simpkins et al., 2008, Stevens & Prinstein, 2005). Based on the theoretical work outlined above, increased exposure and exchange with a peer who displays socially withdrawn behaviors may increase subsequent internalizing behavior within a target child. A friend with this characteristic profile provides feedback and modeling that reinforces socially withdrawn behavior within the target child. Additionally, the social-cognitive advantages typically gained through cooperative play and peer interaction may become less advantageous as children with socially withdrawn behavioral profiles tend to engage less with their peers and show poorer communication ability (Kingery, Erdley, Marhsall, Whitaker, & Reuter, 2010). Furthermore, children in friendships with socially withdrawn children tend to

rate their friendships as less satisfying and less intimate (Rubin et al., 2006; Fordham & Stevenson-Hinde, 1999). Accordingly, the social support and coping skill resources that are provided within normative friendships may also be disrupted when a friend shows heightened levels of withdrawn behavior. This, in turn, poses further risk for subsequent internalizing behavior in the target child (Burk & Laursen, 2005; Jenkins, Goodness, & Buhrmester, 2002). Over time, instead of benefiting from normative processes of friendship, children within these dyads may become more deviant from the larger peer group with regard to social skills and internalizing behavior as their friendship endures.

To date, the available longitudinal research demonstrating the "contagion" of socially withdrawn traits between friends focuses on late childhood and adolescents. In their examination of trajectories of social withdrawal between 5th and 8th grade, Oh and colleagues (2008) found that the presence of a friend with socially withdrawn behavioral characteristics was associated with higher levels of social withdrawal in a target child in 5th grade, as well as a general increase in socially withdrawn behavior across middle school. Similarly, Berndt and colleagues (1999) showed that having a friend characterized as isolated and sensitive exacerbates one's risk for internalizing behavior between 6th and 7th grade. This research provides compelling evidence for the risk associated with a friend with high levels of withdrawn behavior. Furthermore, it appears that children showing early levels of withdrawn behaviors may be most likely to have friends with this risk characteristic. However, an important next step will be to examine these trends in younger elementary school children.

Socially skilled behavior. An additional characteristic that has received considerably less attention within the literature—but may still pose an indirect risk for internalizing behavior—is the level of social skills that characterizes a friend (Glick & Rose, 2011). Given the unique opportunities that a friendship provides for social-cognitive development, friendships with children who socialize and model poor social skill (e.g., poor conversation, problem solving and conflict management skills) may indirectly increase risk for subsequent internalizing difficulties through a lost opportunity for appropriate social skill development. Research demonstrating the mediating effect of social skill deficits in the link between early aggressive behavior and subsequent internalizing outcomes supports this notion (Morrow et al., 2008; Patterson & Capaldi, 1990). Furthermore, cross-sectional work examining levels of social skills within friendship dyads provides preliminary evidence for the positive association between friend and target child with regard to social skill and peer status (Haselager et al., 1998; Kupersmid et al., 1995).

Taken as a whole, this research suggests that a friend's level of withdrawn and socially skilled behavior may have important implications on subsequent social and emotional development, including later internalizing behavior. However, to date, work specific to internalizing outcomes is limited to late childhood and adolescence and is largely correlational. Given that a vast amount of social and behavioral maturity is acquired throughout elementary school (Burgess & Rubin, 2000), these patterns may be especially important to observe as children enter elementary school and progress through middle childhood. Furthermore, it is equally important to understand the longitudinal

impact of these friendship characteristics, especially with regard to children's pre-existing individual risk for internalizing behavior.

Early Individual Risk and Friend's Characteristics

As outlined earlier, children who enter elementary school with withdrawn and aggressive presentations are at risk to engage in social exchange in unsuccessful ways that often increase their likelihood of maladaptive peer experience, both within their broad peer environment and dyadic relationships. Research shows that these broad peer-related difficulties (e.g., rejection and victimization) may mediate the association between early problem behaviors and subsequent internalizing symptoms that start to peak in late elementary school (Nangle, Erdley, Newman, Mason, & Carpenter, 2003; Kim & Cicchetti, 2004; Morrow et al., 2008; Shonk & Cicchetti, 2001); however, to date, no one has specifically examined children's friendships as a mediating factor between these early risk factors and subsequent internalizing outcomes.

Two patterns are evident in the work reviewed above that are informative to understanding the impact of risky friend's characteristics for children showing early behavioral risk for internalizing behavior. Foremost, work on homophily asserts that children are more likely to befriend others who are similar to themselves (Kandal, 1978; Kiuru, Nurmi, Aunola, & Salmela-Aro, 2009; McPherson, Smith-Lovin, & Cook, 2001). It follows that children who show early withdrawn behaviors are likely to befriend children who show higher levels of withdrawn behavior. Furthermore, given the social deficits associated with both heightened levels of aggressive or withdrawn behaviors (Dodge et al., 1990; Dubow, 1988; Hughes, White, Sharpen, & Dunn, 2000; Malti, 2006;

Stormshak & Webster-Stratton, 1999), children with these early behavioral risks likely will have friends who demonstrate low social skill.

To date, no work on friendship characteristics has been conducted for children showing co-occurring aggressive and withdrawn behaviors. However, considering that aggressive-withdrawn children tend to show the least favorable outcomes within their larger peer group (Hymel et al., 1993; Ladd & Burgess, 1999), it is likely that they will have friends with the lowest social skill relative to children who are rated as only withdrawn or only aggressive. Furthermore, as aggressive behavior is overt and interpersonally disruptive, this dimension of co-occurring aggressive and withdrawn behaviors will likely be most noticeable and salient within a peer context. Based on similarity of this more noticeable behavior, children showing co-occurring aggressive and withdrawn behavior will likely have friends most similar in characteristics to children showing aggressive behaviors only. Whereas children demonstrating homogeneous withdrawn behavior will likely have friends with the highest levels of withdrawn behavior when compared with children who show aggressive or aggressive-withdrawn behavior.

The second pattern that can be gathered from research regarding homophily and risky friendship characteristics is that children and their friends tend to become more behaviorally similar over time (Kandal, 1978; Kiuru et al., 2009; McPherson et al., 2001). Thus, children who befriend others with risky friend characteristics (e.g., friend's withdrawal or lowered social skill) may be at increased risk for internalizing outcomes due to this "contagion" of maladaptive behaviors. This pattern suggests a possible

mediational effect of a friend's risk characteristics in the link between early individual risk and subsequent internalizing outcomes. More specifically, children showing early risk behaviors of social withdrawal and aggression may be at risk for internalizing outcomes because they befriend others with risky characteristics. This peer experience may encourage and reinforce socially deviant and internalizing behavior, and also provide less social support relative to children with friends without these risk characteristics. In turn, these risky friend characteristics become one mechanism through which early withdrawal and aggression may manifest into broader internalizing behaviors.

Gender

Importantly, gender differences in friendship, internalizing outcomes, and aggressive and withdrawn behaviors must be considered. Gender differences in the prevalence and acceptance of aggressive and withdrawn behaviors have been noted as early as kindergarten. Boys more than girls show aggressive behaviors and are often over represented within the aggressive and aggressive-withdrawn subgroups (Hymel et al., 1993; Ladd & Burgess, 1999; Rubin Chen, & Hymel, 1993). Furthermore, Rubin and colleagues (1993) showed an interaction between behavioral profiles and gender on 5th grade peer acceptance, such that boys showing heightened levels of withdrawn behaviors were most rejected by their peers. These gender patterns are consistent with culturally imposed gender-normative expectations for passive and dominant behaviors (Allgood-Merten, Lewinsohn, & Hops, 1990, Aube, Fichman, Saltaris, & Koestner, 2000). Likely, boys who engage in withdrawn behaviors are more poorly perceived than girls, as this

passive social approach is more socially accepted for girls than for boys. Although girls who engage in aggressive behaviors may still contrast social-cultural expectations for gender, these behaviors are more culturally valued and thus may be less rejected by the larger peer group. Given these gender differences, it may be that boys who show withdrawn behaviors are at especially high risk for internalizing outcomes. However, to date, no one has specifically examined gender as a moderator for risk for internalizing outcomes associated with early withdrawn behavior. Moreover, although Rubin and colleagues examined both aggressive and withdrawn children, they did not examine gender patterns in the association between co-occurring aggressive-withdrawn behaviors and peer acceptance. Thus, little is known regarding gender differences in acceptance or internalizing outcomes for children who show heightened levels of withdrawal and aggression.

In addition to associations with early withdrawn and aggressive behavior, more direct gender differences have also been noted with regard to risk for internalizing behavior. By adolescence, girls, more than boys, are likely to show internalizing symptoms, especially depressive sypmtomology (Aveneovoli et al., 2008; Zahn-Waxler, Shirtcliff, & Marceau, 2008). Prior to adolescence, research generally demonstrates few gender differences in internalizing behaviors; however, when differences occur, girls demonstrate higher levels of withdrawal, shyness, and fearfulness as early as preschool and some studies (although not all) have found that boys show higher levels of depressive symptoms than girls prior to puberty (Carter et al. 2000; Else-Quest et al. 2006; Hankin, Wetter, & Cheely, 2008; Kistner, 2009; Zahn-Waxler et al., 2008).

Several explanations for gender differences in internalizing behavior have been explored. Research has demonstrated gender differences in anatomical brain development and structure (specifically size differences in the frontal cortex, hippocampus, and amygdala, as well as right hemispheric lateralization) that place girls at risk for an overprocessing of emotional cues relative to boys (Giedd, 1997; McClure, 2000). Other work has highlighted hormonal changes specific to girls during puberty that may disrupt recovery from environmental stress and increase risk for depression (Hayward 2003; Zahn-Waxler et al., 2006). Furthermore, social theorists have also argued that culturally imposed gender roles provide a series of environmental consequences that shape girls towards dependent, relationship-driven, emotional, helpless, passive, and self-sacrificing behaviors that increase risk for internalizing outcomes (Allgood-Merten et al. 1990, Aube et al. 2000). Marrying these theories, researchers have shifted towards a diathesis-stress model, arguing that sex-linked biological vulnerabilities create a diathesis of vulnerability for girls that exacerbate risk associated with gender-role socialization for internalizing outcomes (Cyranowski, Frank, Young, & Shear, 2000; Moffitt, Caspi, & Rutter, 2005).

Taken as a whole, several individual factors, including early social behaviors of aggression and withdrawal, as well as gender, are associated with risk for subsequent internalizing behaviors. Many of these factors have social implications within children's peer environments and researchers have suggested that peer-related problems may mediate the association between early risk and subsequent internalizing outcomes (Kim & Cicchetti, 2004; Morrow et al., 2008; Nangle et al., 2003; Shonk & Cicchetti, 2001).

Additionally, the above reviewed work indicates gender differences in the social acceptance of withdrawn and aggressive behaviors between girls and boys as a moderator for subsequent peer acceptance outcomes (Rubin et al., 1993). However, currently, there are gaps within this literature with regard to the impact of co-occurring aggressive and withdrawn behaviors on subsequent internalizing outcomes, as well as specific friendship factors that may mediate this association. As such, an important next step is to examine these patterns within a model that considers the characteristics of children's friends.

Finally, gender differences in friendship patterns may also have an important impact on risk associated with friend's withdrawn and social skill behavior for internalizing problems. At a descriptive level, boys tend to interact within larger friendship groups, as opposed to individual dyadic exchanges, especially as they enter middle childhood. Although boys and girls interact at the dyadic level at the same frequency, girls show longer durations of dyadic exchanges (Rose & Rudolph, 2006). By late childhood, girls' friendships are often characterized by (and observed as having) more self-disclosure and support (Aikins, Bierman, & Parker, 2005; Erath, Flanagan, & Bierman, 2008; Parker & Asher, 1993; Rose, 2002), whereas boys are characterized as showing more competitiveness, companionship and dominance (Jenkins et al., 2002; Maccoby, 1990). Finally, girls, more than boys, desire companionship and report goals for relationship intimacy, friendliness, and relationship maintenance, whereas boys more often show goals of agency, dominance, self preservation, and control (Buhrmester, 1996; Rose & Rudolph, 2006).

Put into the context of risky friendship characteristics, these gender differences in friendship patterns may indicate that girls, more than boys, are at risk for this "contagion" of maladaptive behavioral characteristics, as they spend more time and tend to rely more on their dyadic friendships than do boys. Increased exposure to friends' maladaptive characteristics likely will increase risk associated with behavioral modeling and feedback. Similarly, as friends with withdrawn and socially skilled behavior may be less equipped to provide social support and intimacy, this deficit may be particularly detrimental for girls over boys. Given these patterns, it is likely that girls with friends showing higher levels of withdrawn and/or socially unskilled behaviors may be at higher risk for internalizing outcomes relative to boys. However, no work has specifically examined gender as a moderator for the association between these friendship risk characteristics and subsequent internalizing outcomes.

Proposed Model

The available research regarding friendship and internalizing behaviors suggests that a friend's level of withdrawn and socially skilled behaviors may be an important link between early individual behavior and subsequent internalizing outcomes (Berndt et al., 1999; Cleveland & Wiebe, 2003; Cohen & Prinstein, 2006; Dishion, 2000; Mariano & Harton, 2005; Oh et al., 2008; Prinstein, 2007; Stevens & Prinstein, 2005). However, the majority of this work focuses on late childhood and adolescence, is cross-sectional in nature, and does not take into account the co-occurrence of early withdrawal and aggression. Given the importance of social development across elementary school and middle childhood, and the unique role of children's friends in behavioral development,

the primary aim of the present study was to examine the impact of friend characteristics in the link between early patterns of behavioral risk and subsequent internalizing outcomes across elementary school. Based on the literature reviewed above, a mediational model was presented, with gender differences in early risk behaviors and friendship patterns as moderators for specific links within the mediational path model.

Figure 1 depicts the overall model tested. Friendship characteristics for social withdrawal and socially skilled behavior were proposed as partial mediators for the association between heightened levels of early withdrawal and aggression and subsequent internalizing behaviors in late childhood. Furthermore, the gender of the target child was proposed to moderate the link between early problem behaviors and subsequent internalizing outcomes, as well as the link between friends' characteristics for social withdrawal and social skills and subsequent internalizing outcomes. Using a longitudinal sample of children between the ages of 5 years (kindergarten) and 10.5 years of age, the following hypotheses were proposed. Due to the complexity of the model, unilateral friendship nominations were used to maximize sample size and power.

1. There will be main effects for withdrawn and aggressive social behavior in kindergarten, such that children demonstrating highly withdrawn or highly aggressive behaviors in kindergarten will report higher levels of subsequent internalizing outcomes at 10.5 years.
2. There will be an interaction between socially withdrawn and aggressive behaviors, such that children demonstrating highly withdrawn *and* aggressive behavior in kindergarten will report the highest levels of internalizing

behaviors at 10.5 years. Children demonstrating high withdrawal and low aggression or high aggression and low withdrawal will report higher levels of internalizing symptoms relative to children with normative withdrawn and aggressive behaviors in kindergarten, but not relative to children with higher co-occurring risk behaviors.

3. The characteristics of a child's friend (e.g., withdrawn and socially skilled behaviors) in 2nd grade will partially mediate the association between early risk behaviors (in kindergarten) and subsequent internalizing behaviors (at 10.5 years), such that:
    a. There will be a main effect for early withdrawn behavior on friend characteristics, such that children demonstrating high social withdrawal will have friends with the highest levels of withdrawn behavior.
    b. There will be an interaction between early withdrawn and aggressive behaviors on friend characteristics, such that highly aggressive and withdrawn children will have friends with the highest levels of withdrawn behavior and the lowest levels of socially skilled behavior relative to other less behaviorally aggressive and withdrawn children.
    c. Friend's withdrawn behavior will partially mediate the association between early withdrawn behavior and subsequent internalizing behaviors only. This mediation will not hold for the main effect for aggressive behaviors.

    d. Friends' socially skilled behavior will partially mediate the association between early withdrawn, aggressive, and co-occurring aggressive-withdrawn behavior and subsequent internalizing behaviors.

4. Gender will moderate the assocation between early behaviors and subsequent internalizing outcomes, as well as the association between friend's characteristics and subsquent interanlizing outcomes.
    a. The association between friend characteristics (both withdrawn and socially skilled behavior) and subsequent internalizing behaviors will be stronger for girls than for boys.
    b. The association between withdrawal (only) and subsequent internalizing behavior at 10.5 years will be stronger for boys than for girls.

CHAPTER II

METHOD

Recruitment and Attrition

The current sample used data from three cohorts of children who are part of an ongoing longitudinal study. The goal for recruitment was to obtain a sample of children who were at risk for developing future externalizing behavior problems and who were representative of the surrounding community in terms of race and socioeconomic status (SES). All cohorts were recruited through child day care centers, the County Health Department, and the local Women, Infants, and Children (WIC) program. Potential participants for cohorts 1 and 2 were recruited at 2 years of age (cohort 1: 1994-1996 and cohort 2: 2000-2001) and screened using the Child Behavior Checklist (CBCL 2-3; Achenbach, 1992) completed by the mother in order to over-sample for externalizing behavior problems. Children were identified as being at risk for future externalizing behaviors if they received an externalizing *t*-score of 60 or above**.** Efforts were made to obtain approximately equal numbers of males and females. A total of 307 children were selected. Cohort 3 was initially recruited when infants were 6 months of age (in 1998) for their level of frustration based on laboratory observation and parent report and followed through the toddler period (See Calkins, Dedmon, Gill, Lomax, & Johnson, 2002, for more information). Children whose mothers' completed the CBCL at 2 years of age were included in the current study (n = 140). Of the entire sample (N = 447), 37%

of the children were identified as being at risk for future externalizing problems. There were no significant demographic differences between cohorts with regard to gender, χ^2 (2, N = 447) = .63, p = .73, race, χ^2 (2, N = 447) = 1.13, p = .57, or 2-year SES, F(2, 444) = .53, p = .59. Cohort 3 had a significantly lower average 2-year externalizing t-score (M = 50.36) compared to cohorts 1 and 2 (M = 54.49), t (445) = -4.32, p < .001.

Of the 447 original screened participants, 6 were dropped because they did not participate in any 2-year data collection. Additionally, one child was dropped from the study after receiving a diagnosis of Autism. At 4 years of age, 399 families participated. Families lost to attrition included those who could not be located, who moved out of the area, who declined participation, and who did not respond to phone and letter requests to participate. There were no significant differences between families who did and did not participate in terms of gender, χ^2 (1, N = 447) = 3.27, p = .07, race, χ^2 (1, N = 447) = .70, p = .40, 2-year SES, t (424) = .81, p = .42, or 2-year externalizing t-score, t (445) = -.36, p = .72. At 5-years of age, 365 families participated, including four that did not participate in the 4-year assessment. Again, there were no significant differences between families who did and did not participate in terms of gender, χ^2 (1, N = 447) = .76, p = .38, race, χ^2 (1, N = 447) = .17, p = .68, 2-year SES, t (424) = 1.93, p = .06, and 2-year externalizing t-score, t (445) = -1.73, p = .09. At 7 years of age, 350 families participated, including 19 that did not participate in the 5-year assessment. Again, there were no significant differences between families who did and did not participate in terms of gender, χ^2 (1, N = 447) = 2.12, p = .15, race, χ^2 (3, N = 447) = .60, p = .90 and 2-year externalizing t-score (t (445) = -1.30, p = .19). Families with lower 2-

year SES were less likely to continue participation at the 7-year assessment, t (432) = 2.61, $p > .01$. At 10.5 years, 328 families participated. No significant differences were noted between families who did and did not participated in terms of race, χ^2 (3, N = 427) = 2.77, p = .43, 2-year SES, t (413) = -.48, p = .64, or 2-year externalizing t-score, t (425) = -.98, p = .33. A significant difference was found for gender, χ^2 (1, N = 427) = 4.12, $p <$ .05, with more females than males participating in the 10-year visit.

Participants

The current study focused on the kindergarten and 2nd grade school visits, and the 10.5-year laboratory assessments. Participants included children who completed at least one data collection time point, and who were present to nominate a friend during the 2nd grade school visit. Across time points, the largest sample size was 295 participants. However, 343 participants provided data during at least one of the three time point collections, yielding an imputed sample of N = 343. Of this sample, ~77% and ~ 44% of children had data from at least two and all three time points, respectively.

In kindergarten, teachers completed questionnaires on 221 children who participated in school data collection. There were no significant differences between families who did and did not participate in terms of gender, χ^2 (1, N = 446) = 1.31, p = .25, race, χ^2 (3, N = 446) = 6.80, p = .08, 2-year SES, t (444) = -.81, p = .42, or 2-year externalizing or internalizing t-scores, t (444) = -.11, p = .91, and t (444) = -.28, p = .78, respectively. In 2nd grade, 241children nominated a unilateral friend during the 2nd grade school assessment (explained further below). There were no significant differences between families who did and did not participate in terms of gender, χ^2 (1, N = 446) =

1.59, p = .47, race, χ^2 (3, N = 446) = .20, p = .98, 2-year SES, t (424) = -1.36, p = .17, or 2-year externalizing or internalizing t-scores, t (444) = -.023, p = .98, and t (444) = -.18, p = .89, respectively. Missing data from the school assessments were due to parents or principals not giving consent for the school assessment, schools being too far away, child absences, or teachers not completing questionnaires. Two hundred ninety five participants completed data from the 10.5-year laboratory visits. There were no significant differences between families who did and did not participate in terms of race, χ^2 (3, N = 446) = 4.55, p = .21, 2-year SES, t (424) = .30, p = .77, or 2-year CBCL externalizing or internalizing t-scores, t (444) = -0.14, p = .89 and t (444) = -0.005, p = .10, respectively. However, more girls than boys completed the 10.5 year visits, χ^2 (3, N = 446) = 4.46, p = .035. Analyses for model testing are based on available data at each time point and missing data are accounted for using Full Information Maximum Likelihood procedures (Allison, 2003; Schafer & Graham, 2002).

Procedures

After the original assessment, families were contacted by mail and phone and asked to participate in a follow-up study at kindergarten, 2nd grade, and 10.5 years. In kindergarten and 2nd grade, parent consent was obtained in order to collect sociometric nominations and behavioral teacher ratings. School and classmate consents were then obtained so that peer ratings could be conducted. Kindergarten teachers reported on early play behaviors. In 2nd grade, peers reported on behaviors of each target child's (e.g., participant) nominated 2nd grade friends. Using a modified version of the Coie, Dodge, and Coppotelli (1982) sociometric interviews, trained graduate research assistants

interviewed each classmate using unlimited nominations of peers, as recommended by Terry (2000). To increase and ensure understanding, each child was required to correctly use the response scale (three subsequent correct responses to sample questions) before obtaining peer nominations. Research assistants also used photos of each child as visual prompts in interviews to promote the accuracy and integrity of the measure. Children's unilateral friends were identified by target child nomination for "the three kids you like the most". Sociometric nominations for behavioral characteristics of each nominated friend were collected during the same school assessment. Of the sample of children who participated in sociometric data collection, 241 nominated at least one unilateral friend (again, some children were absent during data collection and were unable to nominate a friend, but were able to be nominated by other children). At 10.5 years, families were again contacted for follow-up data collection. Those who agreed to participate completed two laboratory visits where each child completed self-report questionnaires about their internalizing symptoms with the help of a trained research assistant.

Measures

Early withdrawn and aggressive behavior. To assess each target child's early social behavior, teacher nominations were obtained using the Preschool Play Behavior Scale (PPBS; Coplan & Rubin, 1998). The PPBS is a 26-item Likert scale that assesses five domains of children's early social play: reticent behavior, solitary-passive behavior, solitary-active behavior, social play, and rough play. Teachers rated each child's play behaviors according to frequency (1 = never to 5 = very often). Items in each domain are summed, with higher values indicating more frequent play behavior in that domain.

For the purpose of this study, the reticent behavior, solitary-passive behavior, and solitary-active behavior domains were summed (scores ranging from 12-60) to measure early socially withdrawn behavior ($\alpha = .891$). Sample items from each subscale, respectively, are: "takes the role of onlooker or spectator," "plays by himself/herself, examining a toy or object" and "engages in pretend play by himself/herself." The rough play domain was used as a measure for early socially aggressive behavior (scores ranging from 2-10); Cronbach's alpha was $\alpha = .863$. A sample item from the aggressive behavior subscale is, "engages in playful/mock fighting with other children."

Friend characteristics. To assess the social skills and withdrawn behavior of each target child's friend, standardized peer nominations were obtained using the sociometric procedures outlined above. *Z*-scores were averaged across friends for target children with multiple friend nominations. To assess friends' socially skilled behaviors, a socially skilled behavior *z*-scores using the item "Some kids are good to have in your class because they cooperate, help, and share. Who are the kids who cooperate, help, and share in your class?" was obtained. Higher scores indicated higher levels of peer-rated socially skilled behaviors.

In addition, standardized peer nominations for the item "Some kids act really shy around other kids. They play alone and work alone most of the time. They seem to be afraid to be around kids. Who are the kids in your class (grade) who are shy and act afraid to be around others?" were also obtained to represent each target child's friend's withdrawn behavior score. Again, *z*-scores were averaged across friends for target

children with multiple friend nominations. Higher scores on this measure indicate higher levels of peer-rated withdrawn behavior.

Internalizing behavior. To measure internalizing behaviors, three self-reports of internalizing behaviors were obtained using the Behavioral Assessment Scale for Children- Self Report of Personality (BASC-SRP; Reynolds & Kamphaus, 2002), the Multidimensional Anxiety Scale for Children (MASC; March, Parker, Sullivan, & Stallings, 1997) and the Child Depression Inventory (CDI; Kovacs, 1992) during the two 10.5-year laboratory data collection visits at the 10.5-year time point. These measures were combined to create a latent variable to represent broad internalizing behaviors.

The BASC-SRP is a widely-used, 186-item measure (for children ages 6-11) that assesses a wide range of problem behaviors. Children were asked to rate their experience of social stress, anxiety, depression, sense of inadequacy, self-esteem, and self-reliance using true or false response and a Likert-type rating ranging from 1 (never) to 4 (almost always). The raw sums of these subscales were summed (with self-esteem and self reliance inverted) to create a composite Emotional Symptom Index to represent broad internalizing behaviors. The BASC exhibits well-established internal consistency, reliability, and validity (Reynolds & Kamphaus, 2002). Cronbach's alpha for the current sample was $\alpha = .860$.

The MASC is a 39-item measure of physical symptoms of anxiety, social anxiety, harm avoidance, and separation anxiety for children between the ages of 8 and 19 years. Each item is rated on a Likert scale ranging from 0 (never true about me) to 3 (often true about me). A total summed anxiety raw score ranging from 0 to 117 is produced, with

higher scores reflecting greater anxiety symptoms. Research examining the psychometric properties of the MASC has demonstrated strong support for its internal consistency, reliability, and validity (Baldwin & Dadds, 2007; March & Parker, 2004). Cronbach's alpha for the current sample was $\alpha = .828$.

The CDI is a 27-item global measure of depressive symptoms for children between the ages of 7 and 17 (Kovacs, 1992). Items are presented as statements representing degrees of specific symptoms. Children rate each item by choosing the symptom statement that best describes them over the previous two weeks. A representative item is "I have fun in many things," "I have fun in some things," "Nothing is fun at all." Statements are scored according to symptom severity, where the absence of symptoms is scored as 0, mild symptoms are scored as 1, and definite or more severe symptoms are scored as 2. A total sum raw score ranging from 0-54 score is produced, with higher scores reflecting greater depressive symptoms. Cronbach's alpha for the current sample was $\alpha = .894$.

CHAPTER III

RESULTS

Preliminary Analyses

Descriptive analyses were conducted on the entire sample and separately by gender for all study variables to assess assumptions of normality. Tables 1-3 list descriptive statistics for each variable. All scores fell within expected ranges. Boys and girls showed comparable means and variances on the PPBS. For structural equation modeling (SEM) analyses, the PPBS withdrawn composite score was transformed by multiplying by a constant of .5 to improve its relative variance with the PPBS aggression subscale and aid in model convergence (Kline, 2005).

Z-scores for friends' withdrawn and socially skilled behaviors indicated restricted variances for both boys and girls relative to the sociometric population. The mean for withdrawn behaviors for boys' friends was below the sociometric population average, whereas the mean socially skilled behavior ratings for girls' friends fell above the sociometric population average. Therefore, relative to the larger sociometric population, the unilateral friends nominated by target children specific to this sample showed less variation in behavior and demonstrated more normative levels of behaviors. Implications for these sample characteristics will be discussed below.

On average, the mean raw scores on all dependent measures indicated normative levels of internalizing symptoms, with girls showing a greater range in symptoms than

boys. The CDI total raw score was positively skewed for both boys and girls. As such, scores were transformed and the square root of the CDI raw total scores was used in subsequent analyses.

To assess for gender differences on independent and dependent measures, a series of independent samples *t*-tests was conducted. Mean gender differences were evident across several measures. Girls had significantly higher mean MASC, friend socially skilled, and friend withdrawn ratings relative to boys. Boys were rated as higher in aggressive play by their teachers on the PPBS relative to girls. Additionally, there were significant differences in variability across MASC, PPBS (aggressive behavior), and friendship characteristic ratings that mirrored the mean gender pattern findings. Table 4 lists *t*-statistics for these analyses.

Finally, Pearson correlations for all independent and dependent variables were calculated on the entire sample and separately by gender. Tables 5-7 list correlations for each variable and table 8 provides *z*-scores for significant differences between correlations by gender. Correlations between outcome variables were stronger for girls than boys. Additionally, correlations between early problem behaviors and outcome measures were stronger for boys than girls. Contrary to expectations, correlations between friendship characteristics and outcome variables were also stronger for boys than for girls. Additionally, for the entire sample, associations between independent variables were weak relative to correlations between the dependent measures. Overall, associations between variables were smaller than expected, especially for girls.

Test for Overall Model Fit

To test the overall mediational model, a Structural Regression was employed using Mplus 6 software. This analytic approach is capable of combining both structural features for mediational path models, as well as measurement features for confirmatory factor analyses using Maximum Likelihood Estimation (Hopwood, 2007; Kline, 2005). This provides the opportunity for the incorporation of both manifest and latent variables, and specific to this study, a strong method for reducing multi-measure data for internalizing symptoms. Manifest variables including early withdrawn and aggressive behavior, the interaction term between early withdrawn and aggressive behaviors, as well as friend withdrawn and socially skilled behavior. A latent variable for internalizing symptoms was used as a dependent measure of internalizing symptoms. Finally, all analyses were also run separately by gender to test for potential differences by gender.

Full Information Maximum Likelihood was used as a method for accounting for missing data in each analysis. Model fit was assessed using multiple model fit indexes including Chi Square, the Root Mean Square Error of Approximation (RMSEA), and the Comparative Fit Index (CFI). A Chi Square test is a "badness of fit" index where, higher values (non-significance) indicate model fit. The RMSEA is an additional "badness of fit" index, with lower scores indicating better fit. This index favors parsimonious models and adjusts according to the parameters estimated. A cut-off score of .10 was used to indicate adequate model fit (Browne & Cudeck, 1993; Kline, 2005). Finally, the CFI is an indicator of fit relative to an independence model (assuming no population covariance among the observed variables). Scores range from 0.0 -1.0, with higher scores indicating

better fit. Cut-off scores of .90 and .95 were used to evaluate adequate and excellent model fit, respectively (Hu & Bentler, 1999; Kline, 2005). Importantly, final model evaluation and selection were also guided by theory.

Two stages of model evaluation were conducted. At the first stage, a Confirmatory Factor Analysis was fit to create a latent variable for internalizing symptoms at 10.5 years. Two necessary conditions were met: 1) the number of freely estimated parameters were equal to or less than the number of observations (e.g., a product dependent on the number of observed indictors of the latent variable), 2) each latent variable (including measurement error) had a scale (e.g., using a unit loading identification constraint). Factor loadings for each observed variable were assessed in addition to model fit. Upon reaching adequate model fit, a path analysis was conducted using all manifest and latent variables (stage 2). Hierarchical model comparisons were guided using fit indexes and theory. Indirect paths were calculated for each mediating pathway.

Stage 1. A Confirmatory Factor Analysis was conducted to determine a best-fitting latent dependent variable for internalizing behavior at 10.5 years using the BASC, MASC, and CDI (Figures 2-4). All factors loadings were freed and the factor variance and mean were fixed to 1 and 0, respectively. First, this analysis was run on the entire sample. Table 9 provides factor loadings for the measurement model (for this stage of analyses, factor loadings were examined for overall model fit due to purposeful model saturation). Factor loadings were strong and in the expected direction, with the BASC Emotional Symptom Index loading most strongly. The latent factor accounted for ~63

%, 34 %, and 77% of the variance for the CDI, MASC, and BASC self-report scores, respectively. Therefore, the latent variable appeared to represent a broad internalizing construct.

Slightly different patterns of results were found when analyses were separated by gender. For boys, the MASC and BASC factors loaded less strongly relative to the larger sample and the CDI loaded most strongly. The latent factor accounted for ~84 %, 17 %, and 51% of the variance for the CDI, MASC, and BASC self-report scores, respectively. Thus, for boys, the latent factor appeared to more strongly represent depressive symptomology.

For girls, the BASC factor loaded most strongly. The latent factor accounted for ~60 %, 44 %, and 88% of the variance for the CDI, MASC, and BASC self-report scores, respectively. Similar to the results from the entire sample, the latent variable appeared to represent a broad internalizing construct.

Stage 2. To test the overall fit of the path model, a structural regression was run with the latent variable for internalizing behavior as the dependent variable on the entire sample, and then separately by gender. The model was fit twice, first with main effects only (reduced model), and then with the interaction term between early withdrawal and aggression added (full model).

Reduced model. Table 10 provides fit statistics, R^2, and indirect effect estimates for the reduced model. Fit statistics indicated adequate model fit (χ^2 (20) = 340.31, $p <$ .01; RMSEA = 0.080; CFI = 0.95). Figure 5 provides path coefficients for the hypothesized model. Contrary to hypotheses, early withdrawn behavior did not predict

friends' characteristics of withdrawn or socially skilled behaviors. Furthermore, early aggression negatively predicted both friends' characteristics of withdrawal and socially skilled behavior, such that children who were rated by their teachers as more aggressive nominated friends who were less withdrawn and less socially skilled.

Consistent with hypotheses there were nearly significant ($.05 < p < .06$), trends for early withdrawn behavior, as well as a target child's friend's withdrawn behavior, positively predicted subsequent internalizing symptoms at 10.5 years. Children with higher ratings of withdrawn play behavior in kindergarten, and children who nominated friends with higher levels of peer-rated withdrawal showed higher levels of subsequent internalizing symptoms. Contrary to expectations, no evidence for a main effect for early aggression on internalizing behavior or target friend's socially skilled behavior on internalizing behaviors was found.

In general, path coefficients were smaller than expected and there was no evidence for mediation in this model. Furthermore, R^2 estimates for endogenous variables indicated that the model only explained a small portion of the variance for each construct.

To test for potential moderation by gender, the reduced model was run separately for boys and girls. Figures 6 and 7 provide path coefficients for each analysis. Fit statistics indicated adequate model fit for boys and good model fit for girls (boys: χ^2 (20) = 132.070, $p < .01$, RMSEA = 0.094, CFI = 0.90; girls: χ^2 (20) = 214.45 $p < .01$, RMSEA = 0.039, CFI = 0.99). Again, differences in loading for the outcome variable were

indicated for boys and girls, such that for boys, the internalizing outcome was weighted most heavily by CDI scores.

For boys, kindergarten withdrawn play behavior and 2nd grade friend withdrawal positively predicted subsequent internalizing outcomes. No other path coefficients were significant and no support for mediation was indicated. Contrary to expectations, for girls, there was a negative trend for early target child withdrawn behaviors on friends' withdrawn behaviors, such that girls with higher levels of teacher-rated kindergarten withdrawn play nominated unilateral friends with lower peer ratings of withdrawal in 2nd grade. Consistent with expectations, there was an additional trend for girls friends' socially skilled behavior on subsequent internalizing symptoms, such that girls who nominated friends with higher social skills peer ratings in 2nd grade showed fewer internalizing symptoms at 10.5 years. Again, no other path coefficients were significant for girls and there was no evidence for mediation.

Full model. Table 11 provides fit statistics, R^2, and indirect effect estimates for the full model. Contrary to hypotheses, the addition of the interaction term did not improve model fit (χ^2 difference (5) = 3.57, $p < .61$; RMSEA = 0.071; CFI = 0.95), and path coefficients for the interaction term did not add to the model. Similar null findings were apparent when analyses were separated by gender. Based on these results, the addition of the interaction term to the model was not supported. Figures 8-10 provide path coefficients for the hypothesized full model run on the entire sample and separately by gender.

Post hoc Analyses

Post hoc analyses were conducted to test potential explanations for the above pattern of results. Foremost, an examination of descriptive differences between the sample of children with unilateral friend nominations and a subsample of children with mutual friend nominations was conducted. Children were identified as having a mutual friend if a nomination for "the three kids you like the most" was reciprocated. Participants with at least one mutual nomination were coded as having a friend. In cases where multiple nominations were reciprocated, friends' characteristics were averaged. Of the original sample, 176 children had a mutual friend in 2nd grade. Tables 12-14 provide descriptive statistics for all variables on the subsample of children with mutual friends.

Mean scores for children with mutual friends (N = 176) were compared to the remaining sample of children who nominated non-reciprocated friends (N = 65). Children with mutual friendships showed significantly lower means across CDI, BASC-ESI, and PPBS withdrawn subscales, t (281) = 2.80, $p < .01$; t (250.120) = 2.071, $p < .05$; t (219) = 3.25, $p < .01$, respectively. A similar mean difference pattern was evident for girls, but fewer differences between samples were found for boys (see Tables 15-17). Thus, as would be expected based on the literature, children with mutual friends demonstrated fewer problem behaviors than did children without mutual friends. Interestingly, although there were no significant differences across means on friendship variables, children with mutual friends evidenced more variability in friend characteristics (specifically girls with mutual friends).

For exploratory purposes, all analyses were re-run on the subsample of children with identified mutual friends. Tables 18 and 19 provide fit statistics for these analyses. Overall, fit was poor for both the full and reduced models, except for girls. Model convergence was not attained when the model was run on the subsample of boys with mutual friends. Path coefficients for models with acceptable fit were non-significant. Likely, the sample size was too small to adequately test this model with children with mutual friends.

Additional exploratory post-hoc analyses were run to determine if broader constructs for aggression and withdrawal would yield stronger results. Analyses were re-run using raw scores from the aggression and withdrawal subscales on the Child Behavior Checklist (CBCL; Achenbach, 1992), kindergarten peer reported *z*-scores for nominations of "shy" and "fights" and finally, the anger and shyness subscales from the Child Behavior Questionnaire, long form (CBQ; Goldsmith & Rothbart, 1991). Tables 20-22 display correlations between the CBCL, CBQ and PPBS subscales for the entire sample and separately by gender. Correlations between the PPBS and broader post-hoc measures of aggression and withdrawal were weak relative to correlations between post-hoc measures. Across measures, there were non-significant associations between early behaviors and friend characteristics. Consistent with hypotheses, early aggression positively predicted internalizing outcomes when CBCL aggression and CBQ anger subscales were used. However, no consistent support for a main effect for early withdrawn behavior, or interaction between early aggression and withdrawal was found. Furthermore, a chi square analysis for groups of children high and low on aggression and

withdrawal based on standard deviation cut-offs indicated very little overlap for children showing high levels of aggression and withdrawal across measures.

CHAPTER IV

DISCUSSION

The present study aimed to examine the role of friendship as one environmental factor in the link between early individual risk and subsequent internalizing behavior. A model indicating friendship characteristics as mediating mechanisms between early individual risk and subsequent internalizing behavioral outcomes (Figure 1) was tested. Two social behaviors were examined as early individual risk factors for subsequent internalizing problems: early withdrawal and aggression. Friendship characteristics for withdrawn and socially skilled behaviors were targeted as mediators in the relation between early risk and subsequent internalizing problems. Finally, gender was examined as a potential moderator for specific mediation pathways**.** Support for the overall mediational model was not obtained; however, some interesting patterns regarding gender, early individual risk, friend characteristics, and internalizing outcome measurement emerged.

Individual Risk and Friendship

Contrary to expectations for homophily (hypothesis 3), there was a negative trend for girls linking early social withdrawal with friends' withdrawn behaviors. Early withdrawal was not associated with friends' characteristics for withdrawal, nor was it associated with social skill in the larger sample (girls and boys) or in the subsample of boys only. Furthermore, early social aggression negatively predicted friend social

withdrawal for the entire sample only. At face value, these results indicate a pattern for dis-similarity of problem behaviors between friends and contrast expectations based on empirical work completed in older populations of children (Berndt et al., 1999; Oh et al., 2008). It is possible that friendship formulation at this age may be less heavily influenced by children's behaviors, and rely more on environmental influences, including classroom assignment, or parent/teacher intervention for play partners. Work in preschool populations, for example, indicates that teachers are a "critical factor" in facilitating play and manipulating play partner opportunities (Hestenes & Carroll, 2000; Kontos, 1999). Similar work has also indicated parents as social navigators for play pairs (Ladd & Hart, 1998). Parents and teachers may also play a similar role as children enter elementary school, especially for children at risk for poor social relationships. For example, recent work examining parent play interventions for children with Attention Deficit/Hyperactivity Disorder and Autism Spectrum Disorders demonstrates the continued impact of parents as navigators for social success through middle childhood (Mikami, Lerner, Griggs, McGrath, & Calhoun, 2010; Koegel, Werner, Vismara, & Koegel, 2005).

It is also important to note that these patterns are based on nominated unilateral friends specific to grade-level peers and do not necessarily include mutually-acknowledged friendships inside and outside of school. Although sociometric data collection may capture a large pool of potential friends, close and meaningful friendships can form outside of the peers captured in this project, for example within neighborhood and community organizations. Furthermore, recent work has shown important differences

between unilateral (preferred friendships) and mutual (realized friendships) friendships for highly aggressive pre-adolescents (Sijtsema, Lindenberg, &Veenstra, 2010). Sijtsema and colleagues (2010) examined differences in unilateral vs. mutual friends across groups of boys in order determine if homophily of aggression is actively sought or simply a default selection phenomenon. Results indicated that highly aggressive boys preferred more supportive friends (relative to the non-aggressive group) who were both high and low on aggression. However, their "actual" or mutually-acknowledged friends were less supportive and more aggressive relative to the non-aggressive comparison group. These researchers concluded that shared aggression between friends was a function of social rejection and default selection as opposed to their friendship preference. Applying these findings to the present study, the unilateral nominations obtained from this sample reflect a child's ideal or preferred friend, rather than the friendships they are typically experiencing. Therefore, it may be most accurate to interpret these findings as indicative of a preference for normative friendship characteristics in unilaterally-nominated friends. Unfortunately, power in the subsample of children with mutual friends was not adequate to assess this model with "realized" mutual friendships.

Consistent with expectations, early social aggression was negatively associated with friends' socially skilled behaviors for the entire sample only. This indicated that highly aggressive children had a preference for friends who were less likely to share, cooperate, and help others. Importantly, this effect must be considered within the context of the sample characteristics. Mean friendship ratings for socially skilled behaviors were higher than the population mean for this sample. Thus, on average, children nominated

as friends were more socially skilled relative to children who were not nominated as friends. Thus, although this finding supports the notion of homophily for socially unskilled behaviors (children lower on aggression nominated friends with higher socially skilled behaviors), it does not necessarily contrast the Sijtesma and colleagues (2010) findings described above, as children higher on aggression in this sample nominated children with more normative levels of social skill, as opposed to lower social skill.

Gender, Individual Risk, and Internalizing Outcomes

As expected (hypotheses 1 and 4), there was a main effect for kindergarten social withdrawal on subsequent internalizing self-report that was moderated by gender, such that boys with higher levels of early social withdrawal showed higher levels of later internalizing behavior (weighted most heavily by depressive symptoms). Although there was a trend for this pattern within the entire sample, this effect was not evident for girls. This pattern is consistent with past work indicating a gender effect for risk associated with withdrawn behavior, where boys with early withdrawn behaviors were least favorably rated by their peers (Rubin et al., 1993); however adds to this work by extending to internalizing (rather than peer) outcomes. This finding also lends support for the notion that passive behaviors in boys are less socially accepted and thereby pose more risk for boys than girls (Allgood-Merten et al. 1990, Aube et al. 2000). Interestingly, gender differences in friendship nominations from the present sample also support this theory. Boys nominated friends who were rated as less withdrawn and less socially skilled (e.g., cooperating, sharing, helping others) by their peers, relative to girls. Considering that unilateral friendship nominations most likely capture a child's ideal

friend (vs. a mutually-acknowledged liking), this pattern indicates that on average, boys prefer friends who are less passive, relative to girls' friend preferences. Again, this gender pattern supports the overall notion that passive behavior is not as valued for boys, and provides insight into how this norm may impact peer relationships at the dyadic level.

Based on previous research, we expected that children with higher levels of aggression would be exposed to more interpersonal difficulty (including risk associated with friendship) and over time, demonstrate higher levels of internalizing behaviors (hypotheses 1 and 2; Angold & Costello, 1993; Mesman et al., 2001; Messer & Gross, 1994; Morrow et al., 2008; Panak & Garber, 1992; Patterson & Capaldi, 1990). Contrary to expectations, there was no support for a main effect for aggression on subsequent internalizing outcomes. Although there is precedent in the literature for the independent effect of aggression on subsequent internalizing outcomes (Mesman et al., 2001), some work in this area has only found this effect when a broader range of early externalizing risk factors are included, such as oppositionality and (in later adolescence) conduct disordered behaviors (Rowe, Rijsdijk, Maughan, Hosang, & Eley, 2004). The measurement for aggression in this project (e.g., the PPBS) was specific to aggressive play in kindergarten and weak in that it only contained two items. It is possible that the PPBS may not have been broad enough to capture risk associated with general aggression and instead captured aggressive play within normative limits. Consistent with this hypothesis, post-hoc analyses using broader measures of aggression with the same

sample of children indicated a positive association between early aggression and subsequent internalizing outcomes.

A post-hoc analysis was also conducted to examine if our measurement of aggression may have similarly impacted our ability to substantiate a support for the interaction between early aggression and withdrawn behaviors. It was expected that children showing higher levels of both behaviors (e.g., co-occurring aggression and withdrawal) would demonstrate the most severe friendship and internalizing outcomes. Our original results did not support the interaction between co-occurring aggression and withdrawal on either friendship characteristics or internalizing outcomes. A similar pattern of null results were found when broader measures of both aggression and withdrawal were used. Although the scores on withdrawal and aggression subscales spanned the appropriate range, when the data was separated by groups of children based on standard deviation cutoffs, there were very few children in the high aggression and high withdrawal groups. Thus, it appears that co-occurring aggression and withdrawal was not characteristic of the present sample.

Importantly, this was the first project to directly test the impact of co-occurring aggression and withdrawal on subsequent internalizing behavior and friendship characteristics. Past related work in this area has linked early withdrawn and aggressive behavior to subsequent internalizing and comorbid outcomes (Coplan & Armer, 2007; Oh et al., 2008; Coplan et al., 1994), but has not yet linked subcategories of co-occurring early risk to subsequent clinical outcomes. Similarly, the available work examining the co-occurrence of withdrawn and aggressive behaviors in peer relationships lends support

to the current model (Ladd & Burgess, 1999); however, the friendship variable of interest was the presence or absence of friends, rather than the characteristic of nominated friends. It may be that the children with co-occurring aggression and withdrawal did not have mutual friends and thus, the impact of the characteristics of their nominated friends was not a salient mediator for subsequent risk.

Gender, Friend Characteristics, and Internalizing Outcomes

Results indicated an unexpected gender pattern with regard to friends' characteristics of social withdrawal on subsequent internalizing outcomes. Boys with 2nd grade friends with higher levels of withdrawn behaviors reported higher levels of subsequent internalizing symptoms. Contrary to expectations (hypotheses 3 and 4), this effect was not evident for girls. Furthermore, although the expected gender pattern emerged with regard to friends' socially skilled behaviors and internalizing outcomes, path coefficients were weak and only indicated a trend for girls, such that friends' socially skilled behavior predicted fewer subsequent internalizing symptoms. Overall, effect sizes for these paths were weaker than expected and, as stated above, there was no support for mediation. These results are interesting given the established gender differences in friendship. Previous work indicates that girls spend more time interacting with their friends and rely more on their dyadic friendships than do boys (Aikins et al., 2005; Buhrmester, 1996; Erath et al., 2008; Parker & Asher, 1993; Rose & Rudolph, 2006). Given this work, it was expected that friendship characteristics would have a stronger impact or "contagion" on girls than boys.

Foremost, results should be interpreted within the context of the sample utilized. Overall, the mean level of withdrawn friend behaviors for boys was significantly lower than for girls, and lower than the sociometric population average. Therefore, in this sample, higher levels of boys' friends' withdrawn behavior still fell within normative ranges relative to the sociometric population. Thus, the above pattern likely reflects a protective effect for lower friend withdrawn characteristics for boys rather than risk associated with a "contagion" of higher levels of withdrawn behavior. Additionally, the overall variance for friendship characteristics was restricted for both boys and girls relative to the sociometric population (likely because children's preferences for friendship indicated more normative levels of behaviors, as discussed above). Overall weak and null findings with regard to girls' friends' withdrawal and socially skilled behavior may be attributable to this sample characteristic.

Secondly, it is possible that the impact of friends in this sample is not as strong as would be anticipated if all friendships were reciprocated, or if nominations outside of school, such as neighborhood peers, or non-same age peers were included. Again, the sample size for the subsample of children with mutual friends was too small to adequately test this model. However, post hoc examination of descriptive differences between samples of unilateral and mutual friends by gender provides some insight into this pattern. Girls with mutual friends demonstrated less variability in early withdrawn behavior relative to the larger unilateral sample of girls indicating that the most severely withdrawn girls did not have reciprocated friendships. Following patterns noted above, this most severely withdrawn group may have nominated more socially normative

unilateral friends, ultimately weakening the expected mediational path between early target child withdrawal to friend characteristics to subsequent internalizing outcomes.

Finally, it is possible that these patterns are simply weaker at this developmental age. Much of the work linking risky friendship characteristics to subsequent internalizing outcomes has been completed on populations of children in late childhood and adolescence (Berndt et al., 1999; Cleveland & Wiebe, 2003; Cohen & Prinstein, 2006; Dishion, 2000; Mariano & Harton, 2005; Oh et al., 2008; Prinstein, 2007; Stevens & Prinstein, 2005), a time when many assert the salience of friendship begins to peak (Buhrmester, 1996; Hartup & Stevens, 1997; Sullivan, 1953). It may be that in middle childhood, the impact of risky friendship characteristics is only emerging.

Internalizing Measurement

Although not a primary objective of this study, the gender differences in our internalizing outcome latent factor are interesting to note. Within the measurement model, patterns of factor loadings for our self-reported depression, anxiety, and broad internalizing measures differed by gender, such that for boys, the internalizing factor was most heavily weighted by depressive symptoms, and for girls, the internalizing factor was most representative of a broad range of internalizing symptoms (both anxiety and depression). Whereas most epidemiological research indicates few differences in internalizing symptoms according to gender at this age, consistent with these results, when gender differences occur, boys show higher levels of depression than girls prior to puberty (Hankin et al., 2008; Kistner, 2009; Zahn-Waxler et al., 2008).

This pattern was particularly interesting given the challenges of measuring internalizing behaviors in younger children. Importantly, it is difficult to compare our latent factors to the current literature, as the majority of work in school-aged children uses parent or teacher report as a measurement of internalizing outcomes (Feng et al., 2008; Kraatz Keiley et al., 2000; Sterba et al., 2007) or measures self report of internalizing outcomes as a manifest variable (e.g., Nangle et al., 2003; Starr & Davila, 2008). Inter-rater agreement between reporters for internalizing behavior in youth is often discrepant (De Los Reyes & Kazdin, 2005) and many argue that as children enter late childhood and adolescence, self report for internalizing sypmtomology is best (Achenbach, McConaughy, & Howell, 1987) and that the combination of multiple measures of any construct is a best practice (Kagan, Snidman, McManis, Woodward, & Hardway, 2002). For these reasons, a latent factor for multiple measures of self-reported internalizing behavior was used in the current sample. Future work may aim to replicate this measurement model and test for a similar pattern of gender differences across other samples.

Limitations, Implications, and Future Directions

This study proposed an innovative and theoretically-based model testing the role of friendship characteristics as mediators between early individual risk and subsequent internalizing outcomes. Although, as a whole, results were weak and did not support the overall model, this project provides important insight for future work that may seek to assess the impact of friendship on development. Foremost, the patterns of results above pose interesting questions regarding the measurement of friendship in empirical research.

Due to the complexity of the model proposed, there was insufficient power to run analyses on the subsample of children identified as having a mutual friend. Therefore, unilateral friendship nominations were used, given that all participating children present at data collection nominated at least one friend. However, this measurement change significantly impacted the interpretation of our results.

Currently, there is no consensus in the field regarding the measurement of a friend. Some investigators prefer to use unlimited friendship nominations, whereas others vary the number of best friend nominations allowed. Similarly, there is variation in the classification of friendedness, ranging from a dichotomous categorization (having a friend or not) to continuous variables reflecting the number of friendships established. Finally, some research includes only mutually-reciprocated friendships, whereas others include all unilaterally-nominated friends (Berndt, 1999; Cairns et al., 1995; Furman, 1998; Simpkins et al., 2008). These inconsistencies are rarely acknowledged in result interpretation, yet they clearly impact conclusions regarding the impact of friendship characteristics. Furthermore, very little work has directly examined the implications of unilateral vs. mutual friendships (e.g., Cairns et al., 1995; Sijtsema et al., 2010) on our current understanding of friendship and development. Future work is needed in this area to determine a best practice for friendship measurement. Likely, there is utility for assessment of both unilateral and mutually-acknowledged friendships. However, work must be done to best understand under what conditions (e.g., developmental age, theoretical questions, type of friendship construct) unilateral or mutual friendship is best used.

Secondly, although our subsample of children with mutual friends was small, the imputed sample (using unilateral friends) was significantly larger and in theory, should have addressed power issues related to sample size. However, in general, effect sizes were smaller than expected and, thus, indicate a need to increase the sample size or select alternative measurements that are more relevant within a community sample context and may better assess aggressive behaviors specifically. This issue is noteworthy for future work intending to test models of friendship characteristics in younger samples. One aim of the present research was to examine the impact of friendship characteristics in a sample of younger children. As aforementioned, it is possible that these patterns are simply weaker at this developmental age. Future work may enhance our understanding of these processes in younger children by examining changes in effect size for friendships longitudinally. Although there is support for the importance of friendship as young as early childhood (Ladd, 2005), different aspects of friendship (e.g., presence or absence, quality, stability, quantity, friends' characteristics) may have a stronger impact at different developmental stages. To date, these questions remain unanswered in the literature. However, investigations of this type may significantly enhance our understanding of friendship and children's adjustment.

The results of this study provided consistent support for the impact of gender norms on both internalizing outcomes, as well as friendship characteristic preferences. Moreover, although weak, results suggested that lower levels of friends' withdrawal was protective for boys only. This was in contrast to expectations based on gender patterns in children's dyadic interactions. Taken as a whole, these findings highlight the importance

of considering gender roles, as well as the gender of the dyad, on the impact of social relationships, especially friendships, on children's development.

Finally, it is possible that a different analytic approach may be considered in future work examining the role of friendship characteristics in the development of pathology. Recent work examining developmental cascades has emerged utilizing sophisticated analytical approaches that account for reciprocated relationships between risk factors (e.g., see special issues for developmental cascade analyses in Masten & Cicchetti, 2010). Applying a model for friendship characteristics as a moderator within a latent growth curve analysis (Bukowski et al., 2010) or as one factor within an autoregressive cross-legged path model approach (Murray-Close et al., 2010; Van Lier & Koot, 2010) may reveal more promising results.

Conclusions

Although friends are only one of several environmental factors that may predict maladaptive outcomes, research in adolescence consistently demonstrates the impact of friends' behaviors in the development of internalizing outcomes (Prinstein, 2007; Stevens & Prinstein, 2005). This project tested the salience of a friend's behavior in middle childhood. Weak results indicate a need to determine if the current pattern of results can be attributed to type two error or if it indicates that at this point in development, the characteristics of children's friends are not yet salient. Before this question can be appropriately answered, more work is necessary regarding methods for assessing friendship and internalizing outcomes. This project highlighted a need to target a larger sample with stronger measures for aggression and measurement of characteristics specific

to mutually-acknowledged friends. Moreover, our findings highlighted several additional research goals for future projects to pursue that include: gaining a better understanding of empirical implications of different measurement of friendship, examining developmental differences in the salience of various aspects of friendship at different ages, and conducting a replication of the current finding with regard to gender and internalizing outcomes.

Despite some limitations, the presented work provides a preliminary step in understanding the impact of children's friends on risk for internalizing behaviors. Results supported gender as a moderator for boys' withdrawn behaviors and internalizing outcomes and highlighted the importance of gender roles in friendship development. Importantly, more work is necessary to determine when and how friendship in childhood may impact development. Future work such as this may greatly enhance our understanding of friendship and its impact on risk for internalizing behavior. Ultimately, these results may shed light on unanswered questions that may help inform social intervention for children at risk for anxiety and depression.

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APPENDIX A

TABLES AND FIGURES

Table 1

Descriptives for the Entire Sample

Measure	*Minimum*	*Maximum*	*M*	*SD*	*Skewness*	*Kurtosis*
PPBS withdrawn behavior composite	12.00	57.00	26.7315	6.87054	.407	1.329
PPBS aggressive behavior scale	2.00	10.00	4.5000	2.19368	.677	-.379
Mean friend withdrawn behavior *z*-score	-1.14	1.31	-.0599	.52801	.448	-.517
Mean friend socially skilled behavior *z*-score	-1.13	1.73	.3439	.61547	-.180	-.709
Total CDI- raw sum	.00	47.00	5.8922	6.59502	2.372	8.240
Total MASC-raw sum	7.00	97.00	42.5197	15.22449	.473	.468
BASC Emotional Symptom Index	-41.00	81.00	-11.6034	21.29911	1.433	2.572

Table 2

Descriptives for Boys Only

Measure	*Minimum*	*Maximum*	*M*	*SD*	*Skewness*	*Kurtosis*
PPBS withdrawn behavior composite	12.00	44.00	26.5567	6.50271	.319	.476
PPBS aggressive behavior scale	2.00	10.00	5.8317	2.12636	.046	-.562
Mean friend withdrawn behavior *z*-score	-1.14	1.06	-.2296	.46386	.645	-.117
Mean friend socially skilled behavior *z*-score	-1.13	1.44	.0914	.59459	.356	-.433
Total CDI- raw sum	.00	38.00	5.4679	5.87383	2.298	7.933
Total MASC-raw sum	17.00	76.00	39.6987	12.69600	.268	-.475
BASC Emotional Symptom Index	-41.00	52.00	-12.2636	18.60675	1.110	1.406

Table 3

Descriptives for Girls Only

Measure	*Minimum*	*Maximum*	*M*	*SD*	*Skewness*	*Kurtosis*
PPBS withdrawn behavior composite	12.00	57.00	26.8760	7.18398	.452	1.801
PPBS aggressive behavior scale	2.00	10.00	3.3884	1.53499	1.374	2.218
Mean friend withdrawn behavior *z*-score	-1.09	1.31	.0802	.53817	.244	-.680
Mean friend socially skilled behavior *z*-score	-1.07	1.73	.5523	.55292	-.619	.170
Total CDI- raw sum	.00	47.00	6.2184	7.10080	2.350	7.932
Total MASC-raw sum	7.00	97.00	44.6220	16.59365	.395	.377
BASC Emotional Symptom Index	-41.00	81.00	-11.0745	23.27675	1.518	2.615

Table 4

Independent Sample t-Tests

Measure	Levene's Test for Equality of Variances		*t*-test for Equality of Means (accounting for unequal variance)		
	F	*p*	*t*	*df*	*p*
PPBS withdrawn behavior composite	.540	.463	-.343	219	.732
PPBS aggressive behavior scale	11.072	.001	9.640	177.872	.000
Mean friend withdrawn behavior *z*-score	3.748	.054	-4.732	239	.000
Mean friend socially skilled behavior *z*-score	.892	.346	-6.181	223.397	.000
Total CDI- raw sum (square root)	.943	.332	-.709	281	.479
Total MASC-raw sum	5.275	.022	-2.782	271.798	.006
BASC Emotional Symptom Index	4.211	.041	-.483	287.999	.629

Note. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

Table 5

Correlations for the Entire Sample

Measure	1	2	3	4	5	6
1. PPBS withdrawn behavior composite	1					
2. PPBS aggressive behavior scale	.129	1				
3. Mean friend withdrawn behavior *z*-score	-.109	-.168*	1			
4. Mean friend socially skilled behavior *z*-score	-.012	-.252**	.203**	1		
5. Total CDI- raw sum (square root)	.136	.019	.116	-.124	1	
6. Total MASC-raw sum	.056	-.144	.095	.097	.466**	1
7. BASC Emotional Symptom Index	.109	.123	.062	-.047	.699**	.519**

Note. $^{**}p < .01$ $^{*}p < .05$ $^{\dagger}p < .1$

Table 6

Correlations for Boys Only

Measure	1	2	3	4	5	6
1. PPBS withdrawn behavior composite	1					
2. PPBS aggressive behavior scale	.362**	1				
3. Mean friend withdrawn behavior *z*-score	-.049	.030	1			
4. Mean friend socially skilled behavior *z*-score	-.099	-.031	.288**	1		
5. Total CDI- raw sum (square root)	.227	.228*	.242*	-.081	1	
6. Total MASC-raw sum	.124	-.133	.224*	.188	.384**	1
7. BASC Emotional Symptom Index	.303**	.298**	.217*	.019	.651**	.295**

Note. $^{**}p < .01$ $^{*}p < .05$ $p < .1$

Table 7

Correlations for Girls Only

Measure	1	2	3	4	5	6
1. PPBS withdrawn behavior composite	1					
2. PPBS aggressive behavior scale	-.014	1				
3. Mean friend withdrawn behavior *z*-score	-.166	.004	1			
4. Mean friend socially skilled behavior *z*-score	.038	-.073	-.034	1		
5. Total CDI- raw sum (square root)	.083	-.065	.028	-.226*	1	
6. Total MASC-raw sum	.030	.001	-.017	-.055	.514**	1
7. BASC Emotional Symptom Index	-.001	.053	-.032	-.122	.729**	.623**

Note. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

Table 8

Significant Gender Differences in Variable Correlations

Measure	1	2	3	4	5	6
1. PPBS withdrawn behavior composite						
2. PPBS aggressive behavior scale	z = 2.87*					
3. Mean friend withdrawn behavior *z*-score	ns	ns				
4. Mean friend socially skilled behavior *z*-score	ns	ns	z = 2.87*			
5. Total CDI- raw sum (square root)	ns	z = 1.9*	z = 1.51	ns		
6. Total MASC-raw sum	ns	ns	z = 1.67*	z = 1.67*	z = -1.32	
7. BASC Emotional Symptom Index	z = 2.07*	z = 1.68*	z = 1.76*	ns	ns	z = -3.42**

Note. One-tailed significance tests used. Positive *z*-scores indicate a stronger correlation for boys relative to girls, negative *z*-scores indicate a stronger correlation for girls relative to boys. $^{**}p < .01$ $^{*}p < .05$ $p < .1$

Table 9

Measurement Model

Measure	Standardized Factor Loadings		
	Full Sample *N* = 343	Boys *n* = 161	Girls *n* = 182
Total CDI- raw sum (square root)	0.791**	0.916**	0.775**
Total MASC-raw sum	0.583**	0.413**	0.660**
BASC Emotional Symptom Index	0.880**	0.711**	0.937**
		R^2	
Total CDI- raw sum (square root)	0.626**	0.839**	0.600**
Total MASC-raw sum	0.340**	0.171*	0.435**
BASC Emotional Symptom Index	0.774**	0.505**	0.877**

Note. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

Table 10

Reduced Model

Model Fit Statistics	Full Sample *N* = 343	Boys *n* = 161	Girls *n* = 182
χ^2 (*df*)	χ^2 (20) = 340.313 *p* < .01	χ^2 (20) = 132.070 *p* < .01	χ^2 (20) = 214.445 *p* < .01
RMSEA	RMSEA = 0.080	RMSEA = 0.094	RMSEA = 0.039
CFI	CFI = 0.945	CFI = 0.898	CFI = 0.989
R^2			
Mean friend withdrawn behavior *z*-score	0.044	0.010	0.036
Mean friend socially skilled behavior *z*-score	0.068	0.018	0.005
Latent Outcome	0.053	0.257*	0.033
Indirect Effects on Latent Outcome (Standardized Coefficients)			
PPBS withdrawn →Friend Withdrawn→ Internalizing Outcome	-0.014	-0.033	0.004
PPBS withdrawn →Friend Socially skilled→ Internalizing Outcome	0.000	0.009	-0.003
PPBS aggression →Friend Withdrawn→ Internalizing Outcome	-0.026	0.029	0.000
PPBS aggression →Friend Socially skilled→ Internalizing Outcome	0.025	0.000	0.012

Note. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

Table 11

Full Model

Model Fit Statistics	Full Sample *N* = 343	Boys *n* = 161	Girls *n* = 182
χ^2 (*df*)	χ^2 (25) = 343.879 *p* < .01	χ^2 (25) = 141.547 *p* < .01	χ^2 (25) = 217.460 *p* < .01
Difference in χ^2 relative to reduced model	χ^2 (5) = 3.566 *p* = .613	χ^2 (5) = 9.477 *p* = 0.092	χ^2 (5) = 3.005 *p* = .613
RMSEA	RMSEA = 0.071	RMSEA = 0.086	RMSEA = 0.019
CFI	CFI = 0.946	CFI = 0.898	CFI = 0.996
R^2			
Mean friend withdrawn behavior *z*-score	0.045	0.072	0.036
Mean friend socially skilled behavior *z*-score	0.077*	0.022	0.006
Latent Outcome	0.058	0.306**	0.068
Indirect Effects on Latent Outcome (Standardized Coefficients)			
PPBS withdrawn →Friend Withdrawn→ Internalizing	-0.025	-0.233	0.004
PPBS withdrawn →Friend Socially skilled→ Internalizing	-0.016	-0.001	0.007
PPBS aggression →Friend Withdrawn→ Internalizing	-0.047	-0.248	0.000
PPBS aggression →Friend Socially skilled→ Internalizing	-0.003	-0.010	0.027
PPBS withdrawal x aggression →Friend Withdrawn→ Internalizing	0.026	0.408	0.000
PPBS withdrawal x aggression →Friend Socially skilled→ Internalizing	0.036	0.015	-0.021

Note. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

Table 12

Descriptives for Children with Mutual Friends (boys and girls)

Measure	*Minimum*	*Maximum*	*M*	*SD*	*Skewness*	*Kurtosis*
PPBS withdrawn behavior composite	12.00	44.00	25.4872	6.48129	.034	-.052
PPBS aggressive behavior scale	2.00	10.00	4.5649	2.24670	.633	-.455
Mean friend withdrawn behavior *z*-score	-1.14	2.78	-.0273	.73890	1.092	1.095
Mean friend socially skilled behavior *z*-score	-1.85	2.32	.2947	.79980	.163	-.329
Total CDI- raw sum	.00	28.00	4.9721	5.37311	1.694	3.398
Total MASC-raw sum	7.00	97.00	41.1808	14.52852	.422	-.425
BASC Emotional Symptom Index	-41.00	54.00	-14.1074	17.98090	1.216	1.674

Table 13

Descriptives for Boys with Mutual Friends

Measure	*Minimum*	*Maximum*	*M*	*SD*	*Skewness*	*Kurtosis*
PPBS withdrawn behavior composite	12.00	44.00	25.9006	6.59755	.324	.129
PPBS aggressive behavior scale	2.00	10.00	6.0000	2.05196	.050	-.341
Mean friend withdrawn behavior *z*-score	-1.14	2.78	-.2264	.70913	1.934	4.930
Mean friend socially skilled behavior *z*-score	-1.85	1.69	.0032	.69320	.258	-.037
Total CDI- raw sum	.00	21.00	4.5758	4.96489	1.494	2.051
Total MASC-raw sum	18.00	67.00	38.1301	12.72493	.370	-.670
BASC Emotional Symptom Index	-41.00	52.00	-14.2857	17.72317	1.262	1.892

Table 14

Descriptives for Girls with Mutual Friends

Measure	*Minimum*	*Maximum*	*M*	*SD*	*Skewness*	*Kurtosis*
PPBS withdrawn behavior composite	12.00	40.00	25.1644	6.41616	-.217	-.244
PPBS aggressive behavior scale	2.00	10.00	3.4247	1.67430	1.486	2.413
Mean friend withdrawn behavior *z*-score	-.97	2.12	.1349	.72628	.633	-.246
Mean friend socially skilled behavior *z*-score	-1.49	2.32	.5321	.80547	-.062	-.291
Total CDI- raw sum	.00	28.00	5.2485	5.65254	1.776	3.878
Total MASC-raw sum	7.00	97.00	43.2738	15.36910	.337	.813
BASC Emotional Symptom Index	-41.00	54.00	-13.9767	18.26986	1.204	1.688

Table 15

Sample Differences for Children with Mutual Friend Only vs. Unilateral Friends Only

Measure	Levene's Test for Equality of Variances		*t*-test for Equality of Means (accounting for unequal variance)		
	F	*p*	*t*	*df*	*p*
PPBS withdrawn behavior composite	.201	.654	3.247	219	.001
PPBS aggressive behavior scale	.812	.369	-.560	220	.576
Mean friend withdrawn behavior *z*-score	1.863	.174	-.682	238	.496
Mean friend socially skilled behavior *z*-score	1.240	.267	.389	238	.697
Total CDI- raw sum (square root)	.003	.954	2.802	281	.005
Total MASC-raw sum	.357	.550	1.506	272	.133
BASC Emotional Symptom Index	5.725	.017	2.071	250.120	.039

Note. Sample differences for the subsample of children with mutual friends compared to the subsample of children without mutual friends (who nominated a friend that was not reciprocated). There is no overlap in samples. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

Table 16

Sample Differences for Boys with Mutual Friend Only vs. Unilateral Friends Only

Measure	Levene's Test for Equality of Variances		*t*-test for Equality of Means (accounting for unequal variance)		
	F	*p*	*t*	*df*	*p*
PPBS withdrawn behavior composite	.835	.363	1.164	98	.247
PPBS aggressive behavior scale	1.310	.255	-.923	99	.358
Mean friend withdrawn behavior *z*-score	.093	.762	.201	107	.841
Mean friend socially skilled behavior *z*-score	.173	.678	.384	107	.701
Total CDI- raw sum (square root)	.634	.428	2.132	121	.035
Total MASC-raw sum	.106	.746	1.171	115	.244
BASC Emotional Symptom Index	.072	.789	1.244	127	.216

Note. Sample differences for the subsample of boys with mutual friends compared to the subsample of boys without mutual friends (who nominated a friend that was not reciprocated). There is no overlap in samples. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

Table 17

Sample Differences for Girls with Mutual Friend Only vs. Unilateral Friends Only

Measure	Levene's Test for Equality of Variances		*t*-test for Equality of Means (accounting for unequal variance)		
	F	*p*	*t*	*df*	*p*
PPBS withdrawn behavior composite	1.809	.181	3.319	119	.001
PPBS aggressive behavior scale	2.287	.133	-.516	119	.607
Mean friend withdrawn behavior *z*-score	.771	.382	-1.061	129	.291
Mean friend socially skilled behavior *z*-score	4.301	.040	.329	84.031	.743
Total CDI- raw sum (square root)	.712	.400	1.930	158	.055
Total MASC-raw sum	1.042	.309	1.205	155	.230
BASC Emotional Symptom Index	9.150	.003	1.656	119.335	.100

Note. Sample differences for the subsample of girls with mutual friends compared to the subsample of girls without mutual friends (who nominated a friend that was not reciprocated). There is no overlap in samples. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

Table 18

Measurement Model for Mutual Friends Only

Measure	Standardized Factor Loadings		
	Full Sample *N* = 343	Boys *n* = 161	Girls *n* = 182
Total CDI- raw sum (square root)	0.731**	0.730**	0.721**
Total MASC-raw sum	0.622**	0.460**	0.703**
BASC Emotional Symptom Index	0.821**	0.796**	0.852**
		R^2	
Total CDI- raw sum (square root)	0.535**	0.211	0.519**
Total MASC-raw sum	0.387**	0.533*	0.494**
BASC Emotional Symptom Index	0.674**	0.634**	0.726**

Note. $^{**}p < .01$ $^{*}p < .05$ $p < .1$

Table 19

Model Fit for the Mutual Friend Only Sample

Model Fit Statistics	Full Sample *N* = 343	Boys *n* = 161	Girls *n* = 182
Full Model			
χ^2 (*df*)	χ^2 (25) = 35.447 *p* < .01	___	χ^2 (25) = 109.401 *p* < .01
RMSEA	RMSEA = 0.119	___	RMSEA = 0.065
CFI	CFI = 0.825	___	CFI = 0.950
Reduced Model			
χ^2 (*df*)	χ^2 (20) = 161.565 *p* < .01	___	χ^2 (20) = 104.920 *p* < .01
RMSEA	RMSEA = 0.115	___	RMSEA = 0.063
CFI	CFI = 0.867	___	CFI = 0.963

Note. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

Table 20

Correlations between the PPBS, CBCL, and CBQ for the entire sample.

Measure	1	2	3	4	5
1. PPBS withdrawn behavior composite	1				
2. PPBS aggressive behavior scale	.129	1			
3. CBCL withdrawn behavior scale	.120	-.015	1		
4. CBCL aggressive behavior scale	.220**	.259**	.472**	1	
5. CBQ shyness scale	.069	.166*	.406**	.066	1
6. CBQ anger scale	.209**	.170*	.279**	.597**	.141**

Note. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$. *The CBCL and CBQ were obtained when participants were 5 years of age.*

Table 21

Correlations between the PPBS, CBCL, and CBQ for the boys.

Measure	1	2	3	4	5
3. PPBS withdrawn behavior composite	1				
4. PPBS aggressive behavior scale	.362**	1			
3. CBCL withdrawn behavior scale	.130	.023	1		
4. CBCL aggressive behavior scale	.299**	.285**	.341**	1	
5. CBQ shyness scale	.026	-.151	.462**	.042	1
6. CBQ anger scale	.312**	.153	.220**	.548**	.158*

Note. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$. *The CBCL and CBQ were obtained when participants were 5 years of age.*

Table 22

Correlations between the PPBS, CBCL, and CBQ for the girls.

Measure	1	2	3	4	5
5. PPBS withdrawn behavior composite	1				
6. PPBS aggressive behavior scale	-.014	1			
3. CBCL withdrawn behavior scale	.112	-.029	1		
4. CBCL aggressive behavior scale	.116	.254**	.593**	1	
5. CBQ shyness scale	.103	-.167	.352**	.093	1
6. CBQ anger scale	.137	.202*	.335**	.643**	.127

Note. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$. *The CBCL and CBQ were obtained when participants were 5 years of age.*

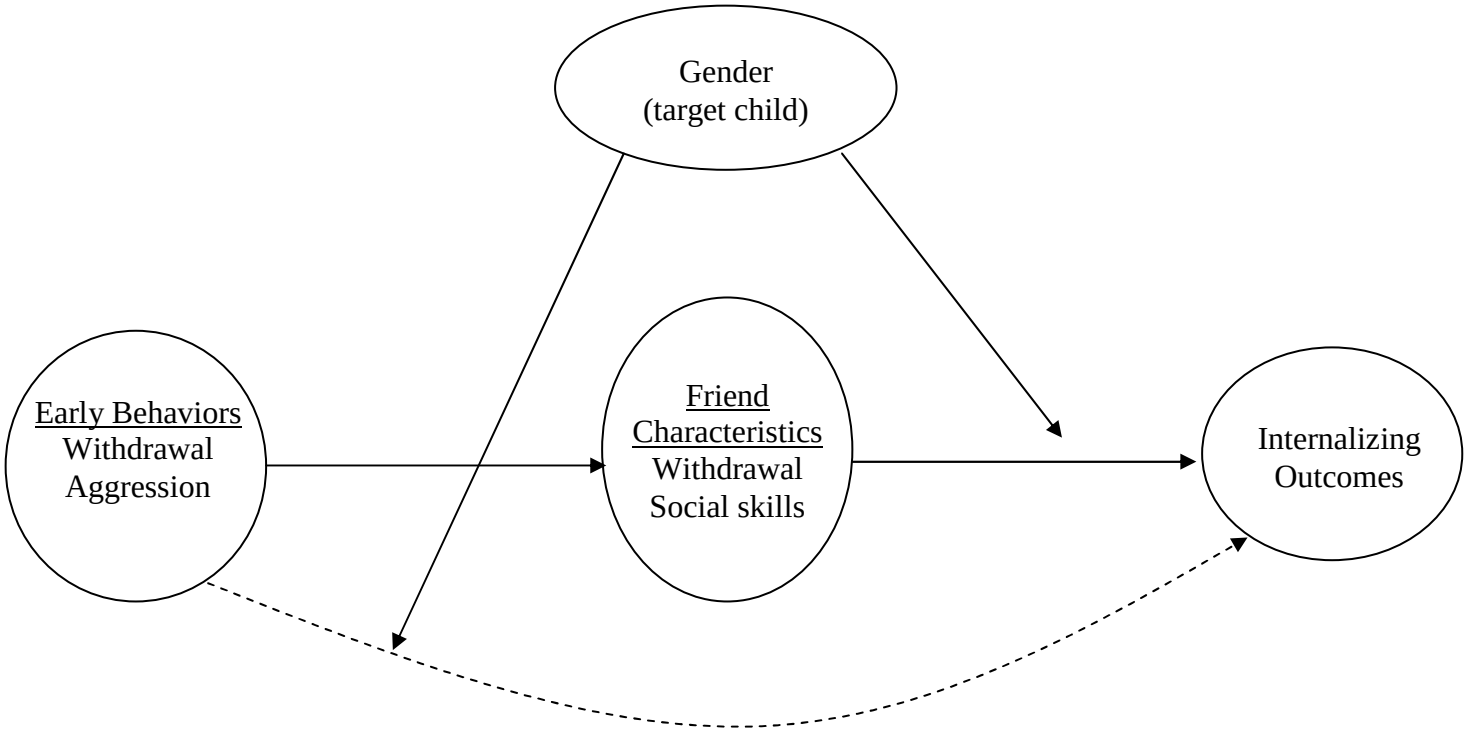

Figure 1. Proposed theoretical model.

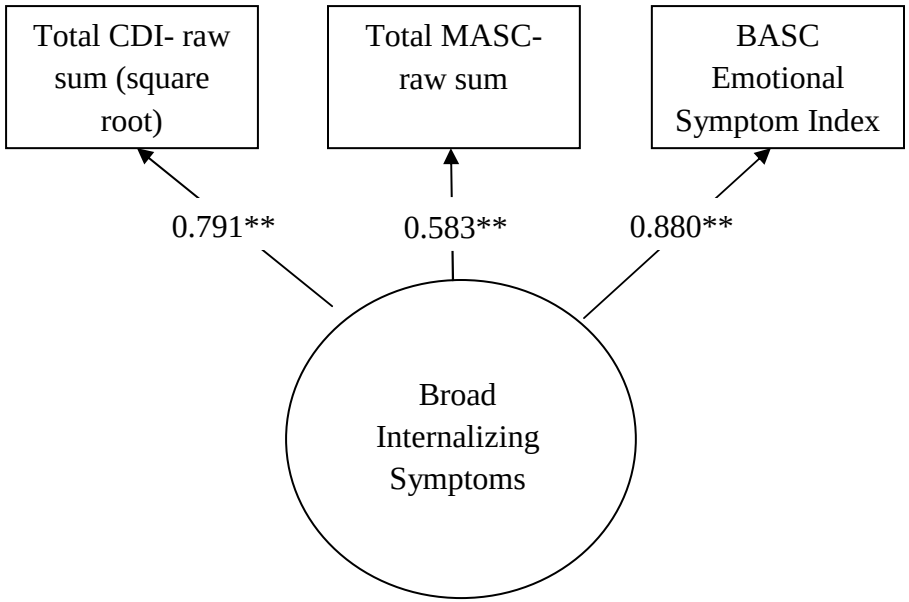

Figure 2. Factor loadings for the measurement model for the entire sample of unilateral friends. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

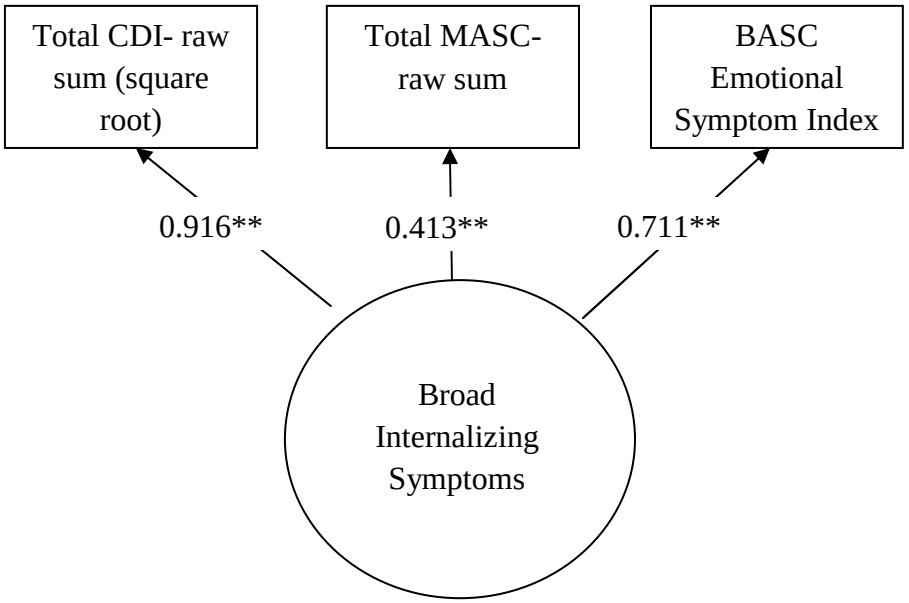

Figure 3. Factor loadings for the measurement model for the sample of boys only. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

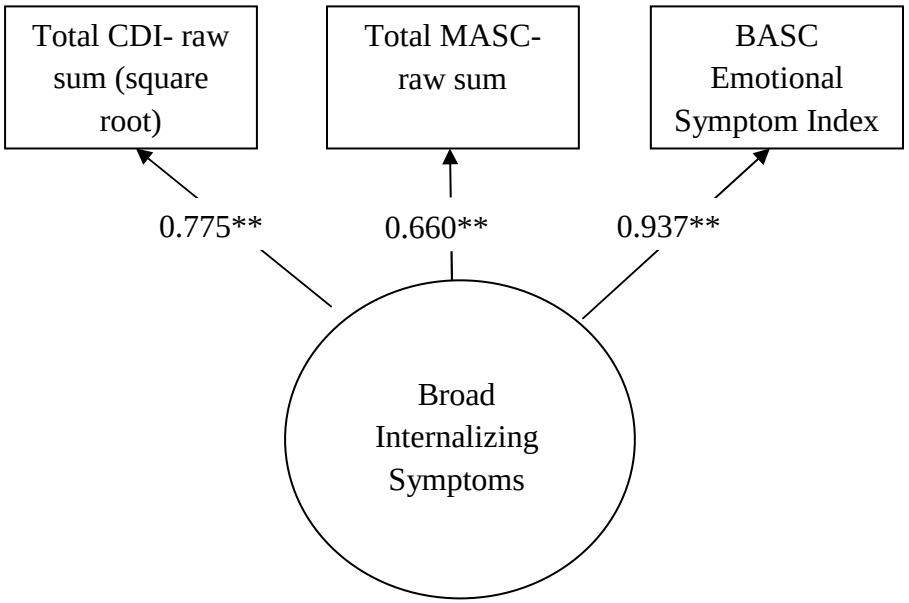

Figure 4. Factor loadings for the measurement model for the sample of girls only. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

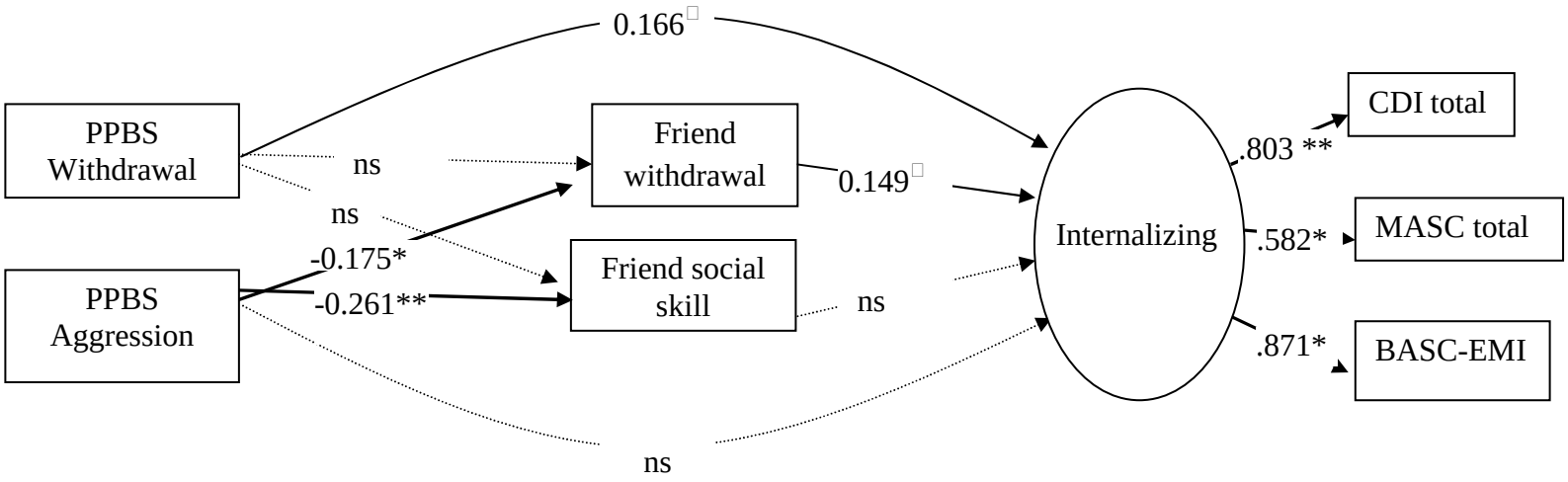

Figure 5. Path coefficients for the reduced model on the entire sample of unilateral friends. $^{**}p < .01$ $^{*}p < .05$ □ $p < .1$

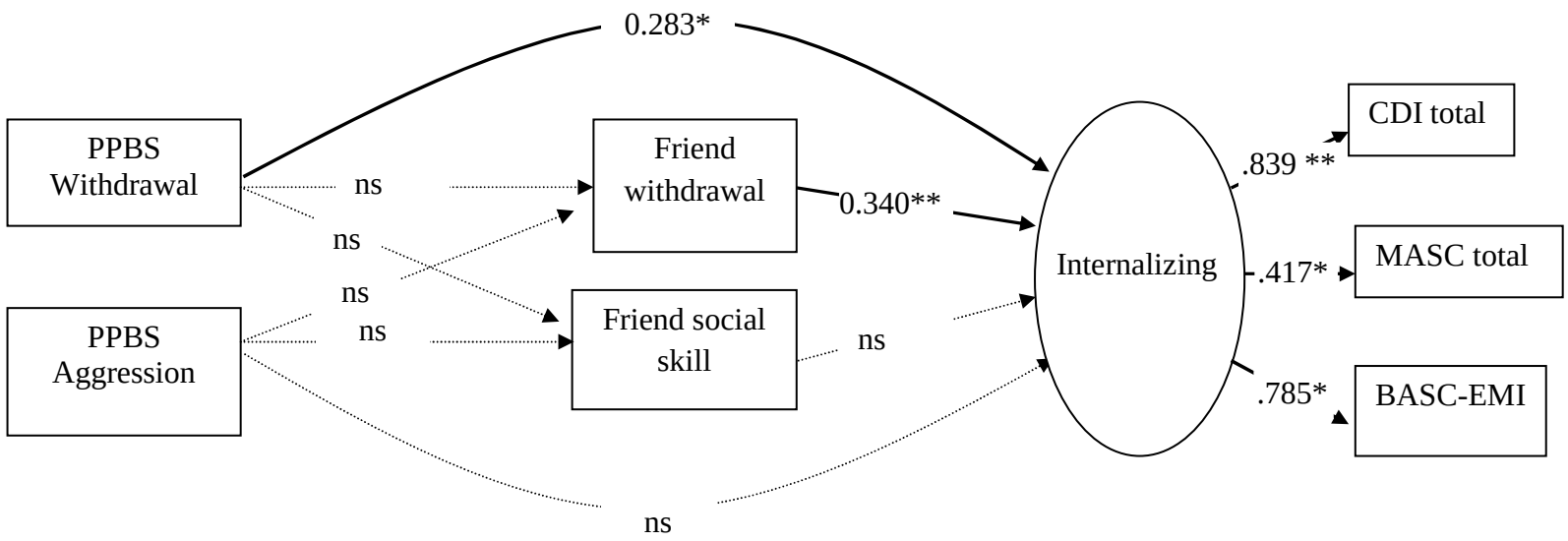

Figure 6. Path coefficients for the reduced model on boys only. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

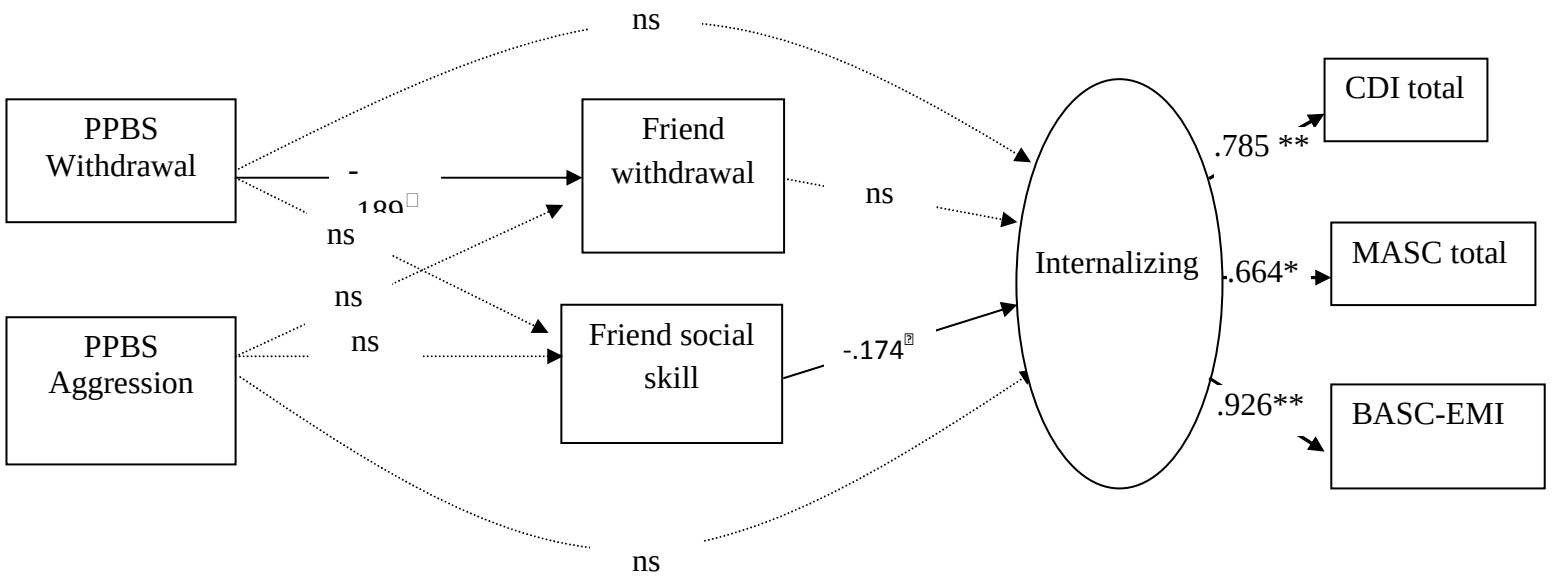

Figure 7. Path coefficients for the reduced model on girls only. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

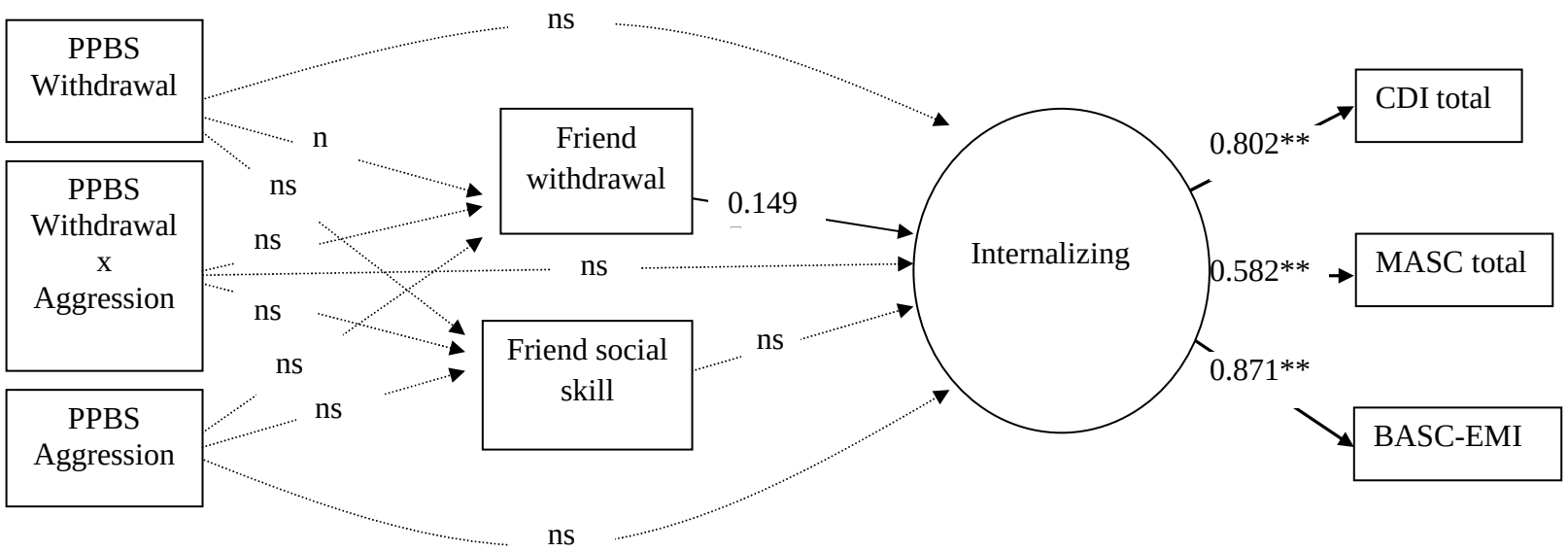

Figure 8. Path coefficients for the full model on the entire sample of unilateral friends. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

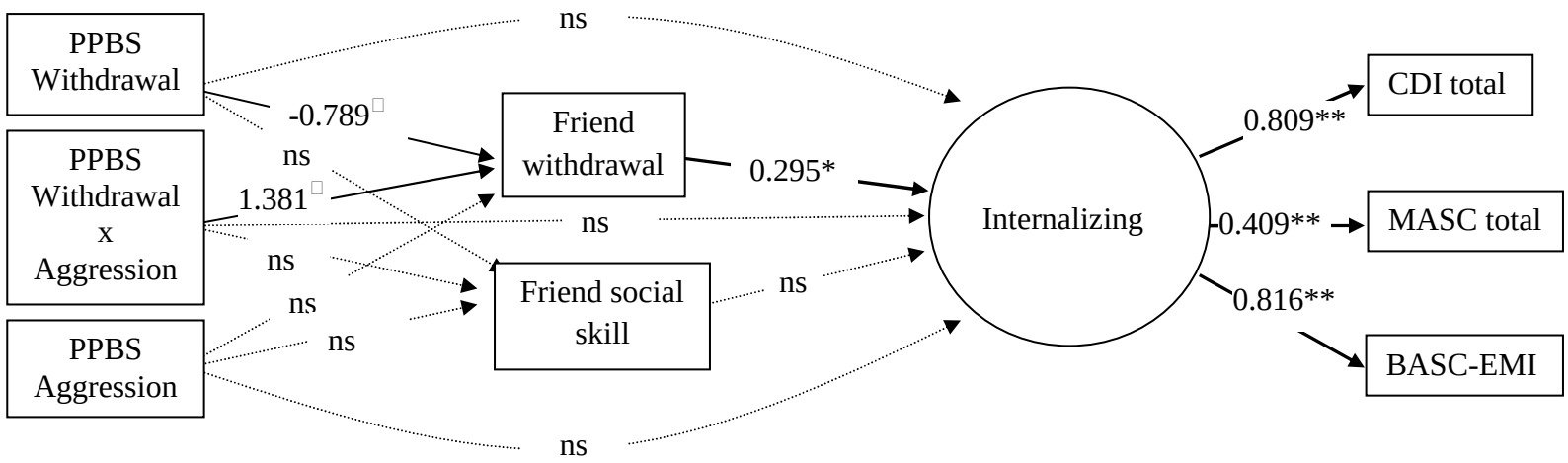

Figure 9. Path coefficients for the full model on boys only. $^{**}p < .01$ $^{*}p < .05$ $^{\square}p < .1$

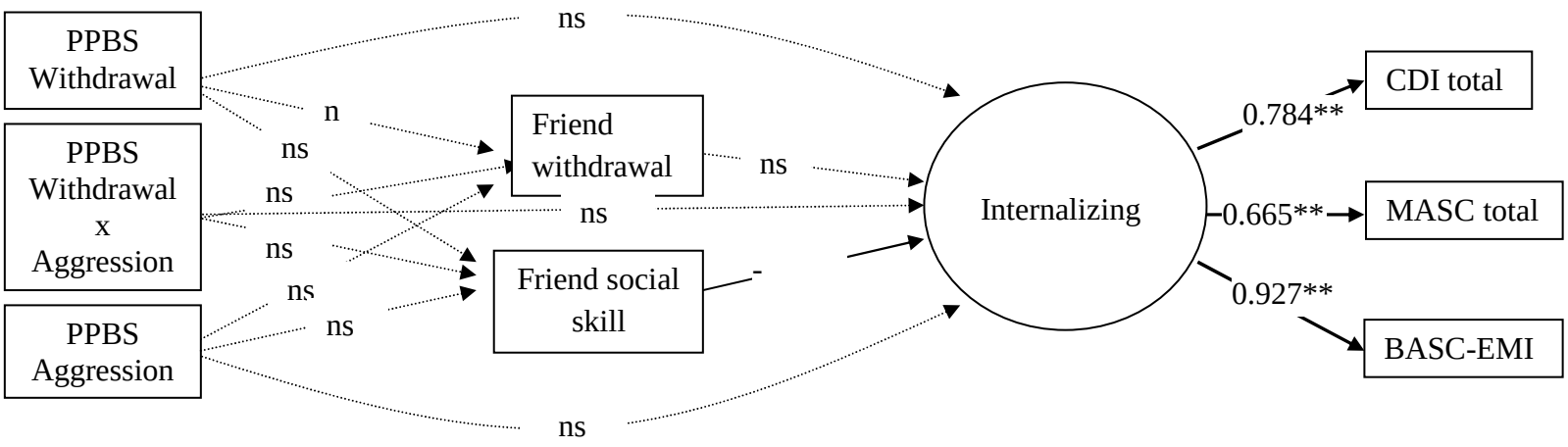

Figure 10. Path coefficients for the full model on girls only. $^{**}p < .01$ $^{*}p < .05$ $p < .1$