

The Social World of Gifted Adolescents:
Sociometric Status, Friendship and Social Network Centrality

by

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor
of Philosophy in the Department of
Psychology and Neuroscience in the Graduate School
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ABSTRACT

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Abstract

The current project is the first study to investigate the competence of academically gifted youth across multiple dimensions of the peer system. To date, there is no comprehensive examination of the social functioning of gifted youth, severely limiting what is known about the overall social world of gifted youth and the extent to which the subset of gifted youth with peer problems experience the same adjustment difficulties related to negative peer interactions. By examining how aspects of sociometric status, friendship and social network centrality relate to a myriad of outcome variables, the current study permits a comprehensive investigation of the risk profile associated with problematic peer relations among gifted youth within the adjustment domains (behavioral, academic and psychological functioning). Participants included 327 adolescents, 149 identified as academically gifted, who were initially assessed in the 7th grade and were then reassessed 2 years later.

Consistent with prior research, findings from the current study provided evidence that academic giftedness was generally associated with more positive peer relations as well as more positive functioning across behavioral, academic and adjustment domains when compared to non-gifted adolescents. However, findings from the current study did not find evidence suggesting that gifted youth experience significantly *less* peer problems than their non-gifted peers. As such, the current study

substantiates predictions that there are indeed subgroups of gifted youth who experience peer problems and they were found to be similarly at risk as non-gifted adolescents with peer problems regarding negative behavioral, academic and psychological adjustment. However, the most alarming finding revealed that the negative effects of being rejected were more pronounced for gifted students, who were the most victimized students in the entire sample, even more than non-gifted peers who were rejected. Findings from the current study highlight the complexity of the social world of gifted adolescents and underscore the importance for future research to continue examining the social difficulties of gifted youth. Limitations and implications of these results are discussed.

Dedication

In loving memory of my brother.

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Introduction

The world of children and their peers has received much empirical attention over the last three decades, and there is substantial evidence to support Hartup's (1983) claim that peers are particularly important socialization agents who significantly contribute to the social and emotional development and adjustment of children, different from and a complement to the influence of other socialization experiences (Rubin, Bukowski, & Parker, 1998). Relationships with peers provide a critical developmental context to learn social norms and practice and master pertinent social skills necessary for successful navigation through the social world (Parker, Rubin, Price & DeRosier, 1995; Rubin et al., 1998). However, success in the social world is not universal, with some children able to adeptly navigate the peer system while others experience significant difficulties with their peers. Given the important role peer relations play in the healthy and normative development of children, it is not surprising that children who have poor peer relationships find themselves at risk for a whole host of negative adjustment outcomes (see, for example, Rubin et al., 1998).

Peer relations research is typically conducted in the school setting using a normative sample of students. Less is known about subpopulations of students with exceptionalities who may be more at risk for developing peer problems at school and, subsequently, at risk for maladjustment. Asher and colleagues have examined the peer acceptance and rejection of students with mild mental retardation and found that these

students were quite rejected by their peers and reported greater dissatisfaction and anxiety about their peer relations compared to their classmates (e.g., Taylor, Asher & Williams, 1987). Farmer and his colleagues have also focused on the peer relations of students with mild disabilities, including emotional and behavior disorders, and similarly found that these students were not well accepted by their peers and were more likely to associate with problematic, rather than prosocial, classmates (e.g., Farmer & Farmer, 1996; Farmer & Rodkin, 1996). However, a different story appears to emerge for those students identified as intellectually and academically gifted.

Although the “geeky” and awkward social profile of gifted individuals persists and is often the depiction perpetuated by the media, most studies report evidence that seems to challenge this stereotype and indicate that gifted youth generally demonstrate a resilience against experiencing significant peer problems more than or equal to non-gifted peers (see Robinson, 2008, for review). While, indeed, many gifted children may be at ease navigating their social world, a closer examination of this literature suggests that the social world of gifted youth may be more complex than what is currently theorized. As such, the paper begins with a review of the extant literature related to the peer relations of gifted youth, highlighting various gaps and limitations. It is proposed that a study examining competence and skillfulness in multiple dimensions of the peer system, including sociometric status, friendships, and social networks, is needed to provide a more complete understanding of the social functioning of gifted youth and

improve identification of those gifted youth most at risk for concurrent and later maladjustment. The current research project seeks to address many unexplored questions about the risk trajectories of gifted youth with peer problems.

Peer Relations of Academically Gifted Youth

Interactions with peers do not occur in isolation and are embedded within a complex and multifaceted system of social relationships and groups. Peer relationships of children and adolescents have been conceptualized and studied in a number of different ways, focusing on both group and dyadic processes within the peer system. Specifically, the peer relations field has examined competence or skillfulness in three main structures of the peer context: sociometric status, close friendships, and social networks. Research examining these three distinct aspects of the peer experience as they differ with regard to giftedness will be reviewed in turn.

Sociometric Status

Sociometric nominations have been used to classify children according to their level of peer acceptance and rejection (i.e., social preference) and their visibility (i.e., social impact) within the peer group. Five mutually exclusive groups have been studied based on the classification scheme developed by Coie, Dodge and Coppotelli (1982): popular children (high social preference), rejected children (low social preference), controversial children (high social impact and social preference), neglected children (low social impact and social preference) and average status children (at or about the mean on

both social impact and social preference). Peer assessments of behavior (e.g., “who in your class is a good leader?”, “who gets into fights?”, “who likes to play alone?”) are often employed by peer researchers, in addition to sociometric assessments, to understand behaviorally why peers like or dislike a child. Although no single “prototypic” description of an accepted or rejected child has been established, Newcomb, Bukowski and Pattee’s (1993) meta-analysis is often cited as providing unique profiles for each sociometric status group. Well-liked or popular children are typically found to be less overtly aggressive and withdrawn, more prosocial, and to have better cognitive and academic abilities than their less accepted peers. In contrast, rejected children tend to demonstrate high levels of aggression and social withdrawal as well as less prosocial behavior in comparison to the other status groups. Controversial children, while similar to rejected children in terms of their high level of aggression, balance their aggressive profile with high levels of prosocial behavior and better cognitive and academic abilities, similar to those of popular children. Neglected children tend to be low on both positive and negative behaviors and to have better cognitive and academic abilities than rejected children.

The relation between sociometric status and peer victimization has also received substantial empirical attention. Children who are victimized by peers have lower peer acceptance and experience higher peer rejection than children who are not similarly victimized (Perry, Kusel, & Perry, 1988). Despite engaging in similar levels of aggressive

behavior, only rejected children, but not controversial, have been found to be victims of peer harassment (Putallaz, Grimes, Foster, Kupersmidt, Coie, & Dearing, 2007).

Recently, researchers have expanded the definition of aggression and victimization to include indirect or covert forms, such as rumors, exclusion, and social manipulation (Crick & Grotpeter, 1995; Underwood, 2003). Often with the intent to cause social harm or use relationships to inflict damage, this phenomenon known as relational aggression (or sometimes social aggression or indirect aggression) has been found to be used by females proportionally more frequently than physical or overt aggression and more likely to be associated with peer rejection for females than male students (Crick & Grotpeter, 1995; Underwood, 2003). Not surprisingly, relational victimization is also related to peer rejection, especially for girls (Crick & Bigbee, 1998; Putallaz, et al., 2007).

A review of the extant literature generally paints a positive picture concerning the sociometric status of gifted children. For example, studies have found academically gifted children to be *more* liked (i.e., popular) and *less* disliked (i.e., rejected) by their peers than non-gifted children (see Cohen, Duncan, & Cohen, 1994; Luftig & Nichols, 1990; Schneider, 1986). Even when behavioral profiles are examined, gifted children emerged as demonstrating a similar profile to that of children with popular sociometric status, such that they are higher on peer assessments of positive and/or prosocial characteristics (Estell, Farmer, Irvin, Crowther, Akos, & Boudah, 2009; Farmer & Hollowell, 1994; Pearl, Farmer, Van Acker, Rodkin, Bost, Coe, & Wenley, 1998;

Schneider, Clegg, Byrne, Ledingham, & Crombie, 1989; Udvari & Rubin, 1996), and lower on peer assessments of aggression/antisocial behaviors (Cohen et al., 1994; Farmer & Hollowell, 1994; Pearl et al., 1998; Schneider et al., 1989; Udvari & Rubin, 1996). This pattern of results is not surprising as advanced cognitive development is related to advanced problem-solving, perspective taking, coping, conflict-resolution skills, which are known to be essential for forming and maintaining positive social relationships.

Although giftedness is often related to characteristics thought to promote healthy peer relationships, a closer examination of the research reveals the evidence is not always consistent. While the congenial profile associated with giftedness may engender acceptance or at the very least avoid active dislike from peers, it may not facilitate a high level of saliency or visibility that corresponds to a controversial status among peers. Rather, gifted students may “fly under the radar” of many of their peers, a notion that is consistent with prior research revealing no difference between gifted and non-gifted youth concerning neglected sociometric status (Cohen et al., 1994; Luftig & Nichols, 1990) or socially withdrawn behavior (Estell et al., 2009; Farmer & Hollowell, 1994; Pearl et al., 1998; Schneider et al., 1989; Udvari & Rubin, 1996).

The characterization of gifted youth, especially those who are well liked by peers, as unlikely aggressors may only hold true in so far as the aggression is direct or overt in nature. In fact, Underwood (2003) posits that relational or social aggression may require “high intelligence because it is such a subtle and complex behavior” (p.186),

raising the possibility that the advanced cognitive abilities associated with giftedness may make gifted children effective perpetrators of more covert forms of aggressive behavior, such as ignoring or excluding someone intentionally. Moreover, a closer examination of the research revealed mixed results concerning gifted children's experience with peer victimization, with teachers viewing gifted children as having a decreased risk for being a target (Estell et al., 2009), but peers (Estell et al., 2009) and self (Peterson & Ray, 2006a, 2006b) providing data to suggest gifted children are not immune from experiencing victimization. For some gifted youth, aspects of asynchronous development may increase their vulnerability for experiencing maltreatment by peers. For instance, uneven development between cognitive and other domains may manifest in observably different interests and abilities, possibly leading gifted youth to be perceived by peers as "odd" or "too smart" or "too nerdy" and thus subject to teasing and bullying and other forms of victimization.

Given this mixed picture, it is not surprising that a close review of the literature also revealed a subgroup of gifted children who experience less positive sociometric status. For example, five percent of gifted children (n=64) in one study (Luftig & Nichols, 1990) and 19% of a gifted sample (n=53) in another study (Cohen et al., 1994) were classified as rejected according to Coie et al.'s (1982) classification system. Although small numbers, taken together they demonstrate variability within the peer experience

of gifted youth that is often overlooked by the findings that as a group they are more well-liked and less disliked than their non-gifted peers.

Close Friendships

Whereas sociometric status is a unilateral construct that refers to the group's view of an individual, friendship is considered to be a bilateral construct representing a voluntary relationship between two individuals that is characterized by reciprocal affirmation and mutual affection (Bukowski & Hoza, 1989). As with sociometric status, peer nomination procedures are the most common method for identifying reciprocal friendships. Although researchers vary on whether they use liking nominations or specific friendship nominations (e.g., "Name your three best friends") to identify existing friendships, researchers agree that at the heart of any attempt to operationalize the friendship between two children is the construct of *reciprocity*. That is, regardless of the criterion employed, mutual nominations must exist between both parties to be considered a friendship (Bukowski & Hoza, 1989).

In addition to identifying the quantity of friendships, researchers have also been interested in understanding *who* children are most attracted to and select as friends. The folk notion that "opposites attract" has not been empirically supported in the friendship literature, with much evidence suggesting that children tend to select friends who are similar to themselves on rather salient characteristics, including demographic features (e.g., age, gender, race) as well as behavioral tendencies (see Aboud & Mendelson, 1996;

Hartup & Stevens, 1997; Rubin et al. 1998, for reviews). In addition to the concerns about friendship selection, the nature and quality of friendships as well as conceptions of friendship have been extensively studied in the broader peer relations literature (Rubin et al., 1998).

In contrast to the more comprehensive work regarding sociometric status, significantly less is known about the friendships of gifted youth-- an unevenness notably reflected in the skewed research efforts regarding sociometric status and friendship within the broader peer relations field (Bukowski, Newcomb, & Hartup, 1996). Despite previously reviewed evidence that gifted children are generally more liked and less disliked than non-gifted peers, the only study to examine reciprocal friendships of gifted children did not find significant differences between gifted and non-gifted children in the quantity of reciprocal friendships (Cohen et al., 1994). Unfortunately, it is unclear why gifted children did not differ from non-gifted children in the quantity of their close friendships despite having greater levels of sociometric status. One possibility is that gifted and non-gifted children differ in *who* they select as friends. In fact, gifted youth were consistently found to select peers who shared their same advanced cognitive and/or academic abilities as close friends in both school and out-of-school settings (see Cohen et al., 1994; Mann, 1957; Miller, 1956). This strong preference for forming friendships with other gifted peers may place restrictions on how many friendships gifted youth have at school, as classrooms and schools are often structured in such a

way that gifted children reflect a minority rather than a majority of the student population. As such, studies in which friendships are assessed using only nominations within classroom may arbitrarily constrain the number of friendships gifted students can report than would be selected if school or grade-wide nominations were used instead. It is possible that such environmental constraints (e.g., fewer gifted children to select as friends) as well as methodology limitations help explain why Cohen et al. (1994) did not find gifted and non-gifted children to differ regarding the quantity of their reciprocated friendships.

Additionally, friendship quantity may also be limited by the fact that gifted youth were found to hold more mature friendship conceptions than non-gifted peers (Gross, 2001). This may also be why gifted children were found to develop friendships with each other more than other children, as their interpersonal needs may be better met in a relationship with a peer who also holds a similar conception of friendship. Yet, the tendency for gifted children to hold more mature expectations about the concept and criteria of friendships may also make them vulnerable to experiencing disappointment when the reality of their friendships do not meet their high expectations. For instance, Mayseless (1993) found gifted adolescents to report lower levels of friendship quality with their same-sex best friends than did non-gifted adolescents and these findings were recently replicated (Schapiro, Schneider, Shore, Margison, & Udvari, 2009). This limited work supports Roedell's (1984) notion that gifted youth may find it difficult to form true

egalitarian friendships among their peer group given the uneven development between social and cognitive domains.

Although it is difficult to draw confident conclusions from such a limited body of work, preliminary findings indicate that efforts to examine friendships is useful in providing distinct information about the social functioning of gifted youth beyond their favorable sociometric status. Future work is needed to investigate friendships in an effort to build a more complete understanding of the complex social world of gifted youth.

Social Networks

Investigators of social networks argue that sociometric status and the number and quality of reciprocated friendships may only be parts of a bigger picture, and advocate the utility of examining the larger social network of peer relationships with whom children and adolescents affiliate. A common method for measuring social networks is the social cognitive map (SCM) procedure developed by Cairns and colleagues (e.g., Cairns, Perrin, & Cairns, 1985). In this technique students are asked to identify students “who hang around together a lot a school.” The information provided by all respondents are aggregated and a composite social map of the classroom or grade social structure is generated yielding information on the position of individual students within their peer clique, as well as the positions of the peer clique within the broader social structure. Not all individuals are equally positioned in their clique, with some

students holding more central positions and others more peripheral, as determined by the relative frequencies of nominations they received for belonging to a particular clique. Furthermore, individual cliques have differing degrees of centrality within the larger social network. Therefore, students' individual centrality within the larger network is determined by considering both their within-group centrality and their group's centrality. "Nuclear" members are central members of high centrality groups; "secondary" members have either medium centrality in a high centrality group or high or medium centrality in a medium centrality group; "peripheral" members are either low centrality members of any group regardless of the group's position or they belong to a low centrality group; "isolates" describe students not nominated as belonging to any group.

As with friendship selection, one of the most important forces driving peer group formation appears to be similarity between children. That is, children form social networks composed of distinct peer cliques or groups that reflect significant similarity among the group members on various characteristics. Echoing previously discussed patterns of friendship choice, social networks of children are often stratified by demographic characteristics, including sex, race, and socioeconomic status (SES) (Cairns & Cairns, 1994), as well as along behavioral characteristics. Aggressive behavior and academic achievement have been the most studied behavioral basis for peer group affiliation. For example, overtly aggressive children (relationally aggressive cliques have

not been empirically examined) tend to belong to cliques composed of other aggressive peers (Bagwell et al., 2000; Cairns et al., 1988) and children tend to associate with others who share their level of academic motivation (Kindermann, 1993). Similar behavior among peer group members is thought to be the result of *homophily* and/or *social synchrony*, with the former referring to the tendency for individuals with shared characteristics to be attracted to one another and the latter referring to the group level processes that contribute to greater within-group homogeneity over time (Farmer & Farmer, 1996).

Despite the unique information gained from examining children's social networks, the amount of work in this field is considerably smaller compared to the conceptual and empirical work in the areas of sociometric status and friendship. As such, even less is known about the social networks of gifted children than their sociometric status or friendships. In fact, no research to date has examined the social networks of gifted children and adolescents as its central focus. Limited information can be drawn, however, from a series of studies conducted by Farmer and colleagues (Estell et al., 2009; Farmer & Farmer, 1996; Farmer & Hollowell, 1994; Pearl et al., 1998) who investigated the social network centrality of children with varying degrees of exceptionality and/or educational classification (e.g., academically gifted, general education, mild disabilities). Although the primary focus of these studies was to understand the peer networks of children with emotional and behavioral issues and/or those with mild disabilities, gifted children were included as a comparison group,

thereby providing some information about the peer networks of this group of students as well.

Similar to findings regarding sociometric status, gifted children were found to have greater network centrality (Farmer & Hollowell, 1994) and were less likely to be identified as isolates (Farmer & Hollowell, 1994; Pearl et al., 1998) than were other students. Furthermore, similar to friendship selection, gifted children tended to associate with other gifted children as well as children who were popular and demonstrated similar high levels of prosocial behavior (Estell et al., 2009; Farmer & Farmer, 1996). Again, generalizing these findings from such few studies to typical experience of gifted children is cautioned. However, they represent an important starting point for future research.

Summary and Limitations

The review of the extant literature generally demonstrate gifted youth as experiencing positive peer relations, such that compared to non-gifted peers they have higher sociometric status, more positive behavioral profile (e.g., high prosocial, low aggression), advanced conceptions of friendships, and higher centrality in their peer network. Yet a closer examination of the research, incorporating multiple dimensions of the peer system, revealed that competence in one area was not necessarily equated with competence in all areas of social functioning. For example, differences in social impact, social withdrawal, victimization, number of reciprocal friends, and friendship quality

did not always favor gifted children. Moreover, given the overwhelming emphasis on reporting differences between gifted and non-gifted youth, gifted youth who, in fact, experience peer problems were often overlooked. In fact, it was reviewed that between 5-19% of gifted children may experience active dislike or rejection by their peers.

However, it remains unclear as to what differentiates those gifted children who adeptly navigate their social world from those who experience problems with peers. The answer has important developmental implications given the well-established link between poor peer relationships and negative adjustment indicated by decades of research from the broader peer relations field. Given the extraordinary potential for academic success and contributions to society that gifted youth possess, it is essential to understand how negative peer experiences impact the adjustment of these children and in what ways it may differ from non-gifted children.

Peer Problems as Indicators of Concurrent and Later Adjustment Difficulties

The ability to achieve positive peer relationships is regarded to be a critical developmental task, with individual differences in succeeding at this task having important consequences for healthy development and well-being. It is argued that children with successful peer relations are on a healthy and adaptive life trajectory, whereas those who experience problematic peer relations are at a heightened risk for current and later maladjustment (Parker et al., 1995). The risk associated with negative peer experiences has led to an ever-growing effort to identify and understand those

children who have peer difficulties. While the lion's share of research in the broader peer relations field has concentrated on rejection within the peer group, additional research traditions focusing on the quantity and quality of close friendships and social network centrality and affiliations have proven to be worthwhile and complementary endeavors for understanding the adjustment and well-being of children and adolescents. Despite the important implications for identifying youth who experience more difficulty navigating the peer system, only a handful of studies explore individual differences in the peer relations of gifted youth. As such, it is not known whether gifted youth with peer problems are more, less, or similarly at risk for the broad array of academic, behavioral and psychological problems that is typically associated with problematic peer relations. The following sections provide a brief overview of the literature linking peer problems and adjustment, discussing findings related to gifted youth when applicable.

Peer Rejection

A major focus of the peer relations literature has been individual differences in one's status with peers, and the correlates and consequences of such differences. As previously discussed, peer rejection has been linked concurrently to problematic behavioral tendencies, such as aggression (both overt and relational) and social withdrawal (Rubin et al., 1998), as well as negative psychosocial adjustment including greater loneliness (Asher & Wheeler, 1985) and increased vulnerability to peer

victimization (Perry et al., 1988). Given the concomitant adjustment problems associated with peer rejection, it is not surprising that peer rejection is also predictive of later maladjustment. Peer rejection has been repeatedly linked to later problems in academic functioning, including academic performance, grade retention, drop out and absenteeism (Coie, Lochman, Terry & Hyman, 1992; DeRosier, Kupersmidt & Patterson, 1994; Ollendick, Weist, Borden, & Greene, 1992). Further, the evidence between peer rejection and subsequent behavioral and delinquency problems is quite robust. For example, Ollendick et al. (1992) found peer rejection during childhood to be predictive of greater aggression, motor excess, attentional problems, and higher levels of conduct disturbance, substance use and delinquent offenses during adolescence. There is evidence indicating peer rejection is associated with later internalizing symptomology as well (Coie, Terry, Lenox, Lochman, & Hyman, 1995; DeRosier et al., 1994). Recalling that a small percentage of gifted children were found to be rejected by their peers (Cohen et al., 1994; Luftig & Nichols, 1990), it is important to examine whether these children hold the same risk for concurrent and later maladjustment convincingly associated with peer rejection. Unfortunately, to date, there are only two studies that examine the profile of rejected gifted youth.

Cornell (1990) and Norman et al. (2000) both investigated individual differences regarding the sociometric status of gifted adolescents attending residential university-based summer academic enrichment programs. Cornell (1990) combined sociometric

nominations and ratings to classify the gifted sample as popular (14%), average (17%), and unpopular (10%)¹. Utilizing achievement scores, teacher ratings of classroom behavior, and measures of self-concept and anxiety, results indicated that popular and unpopular students differed in terms of classroom behavior and self-concept. Specifically, teachers viewed unpopular gifted students as lacking initiative, demanding excessive attention, displaying less cooperation and leadership skills, and overreacting to criticism. Further, the unpopular gifted students reported a lower social self-concept than popular or average students, but did not differ from their more accepted peers in terms of their perceived academic, physical appearance or athletic self-concept.

Norman et al. (2000) assessed sociometric status in both classroom and dorm settings and classified all gifted participants as popular (32%), rejected (22%), average (26%) or unclassified (20%). Students were further identified as stably popular (n=28) and stably rejected (n=17) across both settings. Results indicated that stably popular gifted students were perceived by peers as more prosocial (i.e., easy going, helpful, and cooperative) than stably rejected students. In contrast, stably rejected gifted students were seen as more disruptive and withdrawn (i.e., act shy or are hard to get to know) than stably popular students.

Taken together the findings from Cornell (1990) and Norman et al. (2000) provide initial evidence that correlates typically found to differentiate between peer

¹ The remaining 189 students were not included in the analysis.

acceptance and peer rejection in the broader literature are also associated with individual differences in the sociometric status of gifted students. Specifically, gifted youth who were disliked by their peers while attending summer programs for the gifted displayed greater concurrent academic, behavioral and psychological maladjustment than their more well-liked gifted peers. However, both Cornell (1990) and Norman et al. (2000) used samples from summer programs for the gifted, making a comparison to non-gifted peers impossible. Sociometric status measured in a short-term summer program may not generalize to sociometric status at one's home school. Furthermore, rejected gifted youth may have presented the most problematic profiles during the summer residential programs studied, but it is unclear whether within a less restricted sample of adolescents that included non-gifted students if such problematic profiles would remain or would be instead diffused or overshadowed by the problems exhibited by non-gifted peers with similarly troubled peer relations.

Although the school environment is likely to become an unsupportive or hostile context where it is difficult for rejected youth to learn, leading to academic problems, the high cognitive abilities of gifted youth may mask or buffer the impact rejection may potentially have on their academic achievement. Additionally, regardless of sociometric status, gifted youth may display less aversive behavioral tendencies commonly associated with peer rejection, such as high levels of aggression, again possibly moderating the negative behavioral correlates associated with peer rejection for gifted

youth. On the other hand, individual characteristics that have been associated with peer rejection reflect a degree of “differentness” that likely impede a child or adolescent from effectively “fitting in” with one’s peers. The impact of rejection on gifted youth who exhibit such characteristics may be exacerbated, given academically gifted children are by definition already different from their peers with regard to their intellect and academic ability. Peer acceptance may, instead, come to those who are successful at exhibiting socially desired behaviors (not necessarily prosocial), minimizing their giftedness, or even more concerning, underachieve as a way to gain acceptance and avoid alienation. Those who do not actively “disguise” their giftedness may be most at risk for alienation and harassment by their peers. In an effort to address such questions, additional research is needed in which the profile of differing sociometric status groups for both gifted and non-gifted adolescents are compared with regard to their academic, behavioral, and psychological adjustment.

Having Friends

It is estimated that between 6% to 11% of school-aged children have no friends or receive no friendship nominations from peers (Parker & Asher, 1993). Much in the same way that peer rejection acts as a risk factor, the lack of a best friendship is also accompanied with risk. For example, children with reciprocal friends are generally better adjusted, more socially competent than are children without friends. They are more sociable and prosocial, have higher self-esteem, and are less likely to report being

lonely than friendless children (Newcomb & Bagwell, 1995). Additionally, having friends can reduce the incidence of victimization (Hodges, Malone, & Perry, 1997).

Although having friends and being liked share similar correlates, researchers have examined how friendship participation is distinct from sociometric status. The finding that some popular children do not have close friends, whereas some rejected children do (Parker & Asher, 1993) is often cited as evidence that sociometric status and friendship are not completely overlapping constructs of social functioning. Moreover, sociometric status and friendship appear to have unique contributions to concurrent and later adjustment. For example, Ladd (1990) found that having friends in kindergarten predicted school adjustment at the end of the school year even after taking into account initial levels of being disliked. Similarly, Parker and Asher (1993) found having a friend, friendship quality and peer rejection all made unique contributions to predicting loneliness and that having a friend in combination with low acceptance had a buffering or additive effect on negative adjustment. Findings from Bagwell, Newcomb, and Bukowski (1998) revealed that friendship quantity and peer rejection had distinctive correlates concurrently that persisted into early adulthood. In 5th grade, having a friend was uniquely associated with leadership, whereas being disliked was concurrently associated with aggression and immaturity. Twelve years later, having a friend was uniquely associated with greater self-worth and less depressive symptomology, whereas peer rejection was uniquely and negatively associated with broad indices of adjustment

(e.g., work and school performance, trouble with the law, mental health difficulties) (Bagwell et al., 1998).

Despite the research link between friendship quantity and quality and maladjustment, no research to date has examined the profiles of gifted youth who lack friends or who report low quality friendships. In fact, the unique risk associated with friendship difficulties, including greater loneliness, lower self-worth and later internalizing problems, may be exacerbated for gifted youth, who were found to have more advanced conceptions and expectations of their friendships (Gross, 2001). Being gifted may create unique difficulties in finding friends within the peer group who share similar abilities and interests as well as friends who live up to their high expectations. Giftedness may result in fewer friends or participating in friendships that are less satisfying in their quality, regardless of whether gifted students are liked by the majority of their peers. It is important to identify which gifted youth experience more difficulties in the formation and maintenance of close friendships, as these youth may, subsequently, be at greater risk for adjustment problems. Further, the protective aspect of having friends may be more pronounced for gifted youth who have reciprocal friendships with other gifted youth, as their expectations may be better met and the quality of their relationships more satisfying.

Social Network Centrality and Isolation

Similar to sociometric research, investigators of social networks often try to identify the social and behavioral correlates associated with high network centrality. However, unlike correlates of popular sociometric status, maintaining a central position within the social network may be driven by goals targeting social dominance or prominence that could reflect either prosocial or antisocial behavioral styles (Farmer & Rodkin, 1996). In fact, there is evidence that displaying high levels of aggression (a behavior often associated with peer rejection) is not necessarily indicative of social isolation (Bagwell et al., 2000; Cairns et al., 1988), nor does it preclude children from holding central positions in their social networks or clique, particularly true for boys (Rodkin, Farmer, Pearl, & Van Acker, 2000; Xie, Cairns, & Cairns, 1999). Often cited as demonstrating the varying behavioral profiles associated with high network centrality is the finding that both 'Model' boys (cooperative, studious, leaders) and 'Tough' boys (antisocial, athletic, cool) were found to have high network centrality (Rodkin et al., 2000). To date, Gest, Graham-Bermann, and Hartup (2001) represents the only study to simultaneously examine the unique behavioral correlates of social network centrality, sociometric status and friendship quantity. Gest et al. (2001) reported that network centrality was uniquely associated with both prosocial (i.e., leadership) and antisocial (i.e., aggression) behavioral styles. Number of mutual friendships was uniquely associated with prosocial skills (i.e., leadership) and positive affect (i.e., sense of humor) and uniquely and negatively related to antisocial behavior such as teasing and bossing.

Finally, peer rejection was uniquely associated with a wide range of antisocial behaviors including peer assessed social exclusion, aggressive and disruptive behaviors, and emotion dysregulation.

In addition to one's position in the social network, one's network affiliations have been found to have important implications for individual differences in adjustment. One of the strongest predictions of problem behavior in adolescence, including substance use, delinquency, and aggression, is affiliation with deviant peers (Dishion & Skaggs, 2000; Elliot & Menard, 1996; Thornberry & Krohn, 1997). Moreover, hanging around with deviant peers during childhood was predictive of being a teenage parent and early school dropout (Cairns, Cairns, & Neckermann, 1989). Evidence also suggests that peer affiliations can have positive implications for development, such as academic achievement or engagement (Kindermann, 1993; 1996).

Despite general findings that gifted youth tended to hold more central positions in their classroom social networks and affiliated with other gifted and prosocial peers, important individual differences were also noted. In one study, giftedness or advanced academic ability was related to centrality for boys only when it was accompanied by socially valued traits within the peer culture such as athleticism and popularity (Farmer & Rodkin, 1996). Additionally, there appears to be preliminary evidence that behavioral profiles of gifted children vary as a function of their peer context and network affiliations. Farmer and Farmer (1996) presented findings that suggest the centrality and

behavioral profile of gifted children appear to be affected by the presence or absence of other gifted children in their environment. Gifted girls, in the company of other gifted girls and in the absence of gifted boys, were found to occupy a central position in a prosocial clique, but this positive positioning was attenuated in the presence of a substantial number of gifted boys. For gifted boys, when there were several gifted boys in a single classroom, they were identified as central members of the network and clustered together to form a prosocial group. However, in the absence of a “critical mass,” the social positioning of gifted boys was less positive. For instance, in a classroom containing only one gifted boy, this boy was found to be socially isolated from the social structure and received the most peer nominations for “disruptive” in the class. The other classroom had only two gifted boys, and one was found to affiliate with non-gifted boys in the antisocial group that occupied a central position in the network. The authors suggest that “in the absence of other boys receiving AG services to support their prosocial behavior, boys with AG services use antisocial behavior as their way to fit into the social network” (Farmer & Farmer, 1996, p. 448). Similarly, Estell et al. (2009) found that gifted students’ behavior varied as function of their network affiliations, such that gifted students with aggressive associates received more peer nominations for “bullying” than gifted students and general education students without aggressive associates, but less than those received by students with mild disabilities with aggressive associates.

Taken together, the examination of gifted children's network affiliations by both Farmer and Farmer (1996) and Estell et al. (2009) suggest that the positive social positioning of gifted children may depend on characteristics of the context (e.g., company of other gifted students) and with whom gifted children affiliate (e.g., prosocial vs. aggression/antisocial). It may be the gifted youth most at risk are those who affiliate with non-gifted peers than those whose primary associates are other gifted peers.

Developmental Consideration

A final limitation of most studies examining the peer relations of gifted youth is the limited age of the gifted sample, with relatively few studies examining these issues as they relate to gifted adolescents. However, Schneider et al. (1989) demonstrated there is a possible developmental shift in the social behaviors of gifted youth, reporting findings that gifted students were perceived by peers as more socially competent and leaders in 5th grade, but no longer by 8th and 10th grade. One can also look to the broader peer relations research for the importance of studying adolescence as developmental shifts in the behavioral correlates of peer status for all adolescents have been reported. For example, as children develop, aggression and antisocial behaviors tend to become less negatively associated with peer acceptance (Bukowski, Sippola & Newcomb, 2000; Moffitt, 1993). Although their academic prestige and/or prosocial behavior may enhance positive peer relations for gifted children, the peer environment may become more

complex during adolescence when intolerance of differences as well as the desire to conform and “fit in” are very salient dynamics of the adolescent peer group (Costanzo & Shaw, 1966). In addition to the other developmental tasks faced by many adolescents during this transitional period, gifted adolescents may be faced with an additional challenge of achieving social acceptance while having to nurture their unique potential within “a peer culture that is often ambiguous toward those with intellectual talents” (Assouline & Colangelo, 2006, p. 67). As such, efforts to understand the risk associated with gifted youth’s peer problems may be more fruitful if studied during adolescence than during childhood.

Summary: A Complex Profile of Social Functioning

When discussing the peer relations of gifted youth, it is generally emphasized that they evidence, as a group, positive social functioning (see Robinson, 2008). However, a closer examination of the extant literature revealed heterogeneity in the social experiences of gifted youth that cannot be ignored. For example, despite favorable sociometric status, positive behavioral profile, high social network centrality and more mature friendship conceptions, differences between gifted and non-gifted youth regarding their social impact, relational aggression, victimization, and quantity and quality of close friendships were not substantiated. In fact, there appears to be a subset of gifted youth who are disliked or rejected by their peers. It is argued that a more meaningful line of research is one that examines individual differences within gifted

youth to understand how being gifted may act as both a risk and protective factor when navigating the peer system. Such knowledge regarding the complexities of the peer relations of gifted youth would provide a more nuanced, and most likely more accurate, overall picture of their social world as well as to help identify which gifted youth appear to be at risk for concurrent and future maladjustment. This is particularly important given the extraordinary potential for academic success and contributions to society that gifted youth possess.

In an effort to build a more complete understanding of the social world of gifted youth, the current research project aims to 1) examine group differences between gifted and non-gifted adolescents regarding various aspects of their peer relations (i.e., sociometric status, friendships, and social networks) and 2) examine whether associations between peer problems and adjustment vary as a function of being academically gifted. Based on the preceding review of the literature, the following section outlines several hypotheses proposed for the current research project.

Study Hypotheses and Overview

In an effort to build a more complete understanding of the social world of gifted youth, the current research project aims to 1) examine group differences between gifted and non-gifted adolescents regarding various aspects of their peer relations (i.e., sociometric status, friendships, and social networks) and 2) examine whether associations between peer problems and adjustment vary as a function of being

academically gifted. Based on the preceding review of the literature, the following section outlines several hypotheses proposed for the current research project. However, due to the limited nature of research examining peer relations of gifted children and adolescents at this time, many of the current analyses are exploratory.

Peer Relations and Adjustment of Gifted Adolescents

Sociometric status, friendships, and social networks are three conceptually distinct aspects of the peer experience for children and adolescents that will be examined in the current research project with regard to their relation to giftedness. A review of the extant literature generally paints a positive picture concerning the sociometric status of gifted children, although less is known about the sociometric status of gifted adolescents. Consistent with prior research, it is expected that gifted adolescents in the present research will demonstrate, as a group, greater peer acceptance and lower peer rejection than their non-gifted peers. Similarly, it is predicted gifted adolescents will exhibit a profile that historically corresponds to peer acceptance, including more positive and less negative academic, behavioral, and psychological adjustment. Of note, it is unclear whether one can generalize such predictions to differences in relational forms of aggression and victimization, as research concerning these indices of adjustment has been limited and inconsistent. The present study will also expand upon previous research by comparing gifted and non-gifted adolescents in terms of their visibility or social impact within the peer group. Given the paucity of research

concerning the social impact of gifted youth, it is difficult to make predictions regarding social impact; however, findings from one study indicate that gifted youth did not differ from non-gifted peers regarding neglected sociometric status.

Relative to sociometric status, previous work concerning the friendship and social networks of gifted youth is quite limited. Therefore, the predictions regarding these aspects of their peer relations are speculative at best. It is unclear whether gifted students will differ from non-gifted peers in terms of the quantity and quality of their friends, as only two studies have previously examined these friendship characteristics. However, research regarding the friendship choices of gifted youth has received more empirical attention and, consistent with past research, it is predicted that gifted adolescents will have a greater proportion of friends also identified as gifted than do non-gifted peers.

Although previous work has included gifted children as a comparison group when examining the social networks of children, the findings are limited in their scope given gifted youth were not the main focus of this research. The present study is the first of its kind to provide a detailed examination of the social networks specific to gifted youth, by comparing the clique and network centrality of gifted and non-gifted peers as well as examining their network affiliations. Findings from previous work would lead to the prediction that, much like sociometric status, gifted youth will emerge as having higher levels of centrality within their clique and will be less likely identified as isolates

than non-gifted peers. In addition to examining gifted youths' positions in the peer network, the present study will also compare their clique affiliations with those of non-gifted peers. Guided by the theories of selection and homophily, it is predicted that gifted adolescents will have more gifted clique affiliates than non-gifted adolescents.

Peer Problems as Indicators of Adjustment Difficulties: Giftedness as a Moderator

Despite predictions that gifted adolescents will generally exhibit positive peer relations when compared to non-gifted peers, the second aim of present study focuses specifically on the subset of gifted youth who may experience more trouble fitting in with their peer group. Unfortunately, to date no work has examined the profiles of gifted youth with peer problems to understand if they are more, less, or similarly at risk for the broad array of academic, behavioral and psychological problems typically associated with problematic peer relations. Given that gifted students are predicted to exhibit positive behavioral, academic and psychological functioning in general, gifted youth with peer problems may be protected from experiencing adjustment difficulties than non-gifted youth with peer problems. By contrast, success with peers may come to gifted adolescents who learn to exhibit socially desired behaviors (not necessarily prosocial), minimize their giftedness, or even underachieve as a way to gain acceptance and avoid alienation; thus, gifted youth with positive peer relations may differ from gifted adolescents in general, by demonstrating relatively poorer academic and behavioral adjustment as a way to fit in. On the other hand, those who do not actively

“disguise” their giftedness may be most at risk for alienation and harassment by their peers.

Summary of Hypotheses

- a. It is hypothesized that gifted adolescents will have a more positive peer relations and adjustment profile, when compared to non-gifted adolescents. Specifically:
 - i. It is hypothesized that, in contrast to non-gifted adolescents, gifted adolescents will be more accepted and less rejected by their peers, more central in their cliques and in the larger network and less isolated. Differences between gifted and non-gifted adolescents with regard to friendship quantity and quality and social impact were not expected but explored.
 - ii. It is hypothesized that, in contrast to non-gifted adolescents, gifted adolescents will demonstrate more positive/prosocial behaviors, less negative behaviors, and superior academic and psychological functioning. Differences between gifted and non-gifted adolescents with regard to relational aggression and victimization were not expected but explored.
- b. It is hypothesized that gifted adolescents will affiliate with other gifted peers more than non-gifted adolescents. Specifically:

- i. It is expected that gifted adolescents will have more friends with gifted peers and belong to cliques with more gifted clique members than would non-gifted adolescents.

- c. The association between peer relations and adjustment will be compared between gifted and non-gifted adolescents, to determine whether adjustment profiles are similar for gifted and non-gifted adolescents with and without peer problems. However, exact predictions are not possible as this study is the first of its kind to look at giftedness as a moderating factor between peer relations and adjustment.

Study Overview

The proposed research project would not be possible without a unique, preexisting data set. The principal investigator is fortunate to have access to a comprehensive longitudinal study of social influence processes affecting adolescent substance use beliefs and behaviors funded by the National Institute of Drug Abuse. As part of this investigation, 7th-grade students attending a magnet secondary school (grades 6 to 12) located in a midsized Southeastern city were invited to participate. Initial data collection occurred at two time points, approximately one year apart, resulting in two separate cohorts of 7th graders. Both cohorts of 7th graders were followed longitudinally, with data collection occurring in the fall and spring of 7th grade,

and again in the fall of 8th and 9th grade. The timeline of the study allowed for only the first cohort to be followed into the fall of their 10th grade year.

Data collection for this study was completed in 2008, resulting in a longitudinal secondary dataset containing a wide array of measures relevant to the current study including assessments of adjustment (academic, behavioral, psychological) from various perspectives (student, peers, teachers, and school records) as well as measures assessing the different aspects of the adolescents' peer world, including assessments of sociometric status, friendship quantity and quality, and social network centrality and affiliations. An additional strength of this dataset is the substantial number of participants who were identified as academically and intellectually gifted. Access to such a unique longitudinal dataset containing a substantial number of gifted students as well as rich adjustment information facilitates the exploration of many unexplored questions about the risk trajectories of gifted youth with peer problems. The following section will outline in more depth the methods specific to the present study.

Method

Participants

Two consecutive cohorts of 7th-grade students (N=398) attending the same magnet secondary school (grades 6 to 12) located in a midsized Southeastern city were invited to participate in the larger study, previously described. Students were paid \$5 for returning consent forms, regardless of consent status. Parental consent and student assent were obtained from a total of 327 students across both cohorts (82% participation rate). Participants included 181 girls and 144 boys who ranged in age from 11 to 14 years old (mean age = 12.2 years old). The participating sample was found to be quite diverse in terms of ethnicity (40% European American; 46% African American, 14% Hispanic, Multi-ethnic, other or Asian). Furthermore, the Hollingshead (1975) index of socioeconomic status (SES) for participating families ranged from 9 to 66 ($M=42.27$).

The current study employs a longitudinal design, in which both cohorts of 7th graders were initially assessed in 7th grade and then again two years later in 9th grade. An examination of the attrition rate revealed that 76% (N=247) of the original sample remained in the study in 9th grade. In the situation in which a student from cohort 1 was retained but remained at the school in which the study took place, the student was followed with the original cohort 1 rather than cohort 2. The design of the larger study did not allow students in cohort 2 who were retained to be followed. Cross-sectional analyses included all data from students available at each time point ($N_{\text{grade 7}} = 327$; $N_{\text{grade$

n=247), whereas longitudinal analyses only used data for students who remained in the study at both time points.

Gifted Sample

Students were designated as being Academically/Intellectually Gifted (AIG) according to North Carolina state guidelines which require students to “exhibit high performance capability in intellectual areas, specific academic fields, or in both intellectual areas and specific academic fields” (NC General Assembly, Article 9b, 1996). Criteria were determined at the local school district level and, for this sample, the school district AIG designation was based on a composite score derived from scores on an aptitude test, achievement tests in math and reading, grades and teacher checklists (see Appendix A for the specific district local plan). In total, 141 students were identified as gifted, indicating that 35% of the total 7th graders invited to participate met AIG criteria (or 43% of participating students). This group of gifted students (63% female; 68% European American) is particularly interesting because of its large percentage of African American and multi-ethnic (27%) gifted students in the absence of an Asian gifted population (3%). Of note, gifted status was not obtained for non-participating students, as access to this information was only granted for participating students. However, district records from 2007 (the last time point of the current study) reported that 34% of the total student body at this school (grades 6th through 12) met criteria for AIG, suggesting that very few gifted students were non-participants in the current study.

Gifted students who participated in the study were found to differ from non-gifted participants with regard to gender [$\chi^2(1) = 4.58, p < .05$], ethnicity ($\chi^2(5) = 83.52, p < .001$), and SES [$t(325) = 7.18, p < .001$]. Gifted students were proportionally more likely to be female (62%; $n = 88$) than male (38%; $n = 53$), whereas non-gifted students were equally likely to be male ($n = 92$) or female ($n = 94$). In terms of ethnicity, European American adolescents were more likely to be identified as gifted (72%; $n = 94$) than non-gifted (28%; $n = 36$), whereas students of color were more likely to be identified as non-gifted (76%; $n = 150$) than gifted (24%; $n = 47$). Further, gifted students ($M = 47.52$) were found to have a higher family SES than non-gifted students ($M = 37.56$). As such, all analyses examining the effect of giftedness controlled for gender, ethnicity and SES.

Procedures

Student Survey

During the fall of 7th and 9th grade school years, a survey was administered to students in their regular classroom for 100 minutes (either a single 100-minute period or two 50-minute class periods on consecutive days). Students' teachers remained in the room along with project staff, but were not involved in the administration of the survey. Students who did not participate completed homework at their desks. Prior to beginning the survey, project staff reviewed with the participating students the types of questions they would be asked, provided assurance that their responses would remain private, and that their data would be identified only with an ID number. Students were

informed that they could stop at any time or skip any questions they did not want to answer.

All participating students completed the social cognitive map (SCM) portion of the survey first. Next, project staff explained the sociometric portion of the survey and instructed students to proceed, after completing all sociometric items, with the remainder of the survey which consisted of a battery of self-report measures.

Instructions for each measure were included in the survey, with project staff available to answer questions on an individual basis. Students who were either absent or did not finish in the allotted time were allowed to complete the survey during a regular school day the following week. Students received a small incentive (\$5 in cash) for completing the survey.

Teacher Measure

During the spring of the 9th grade school year, two teachers from each cohort were asked to complete measures of adjustment for all participating students. It was decided by investigators of the larger study that having teachers provide reports in the spring would result in more accurate assessments compared to obtaining the same information at the start of the school year. Students' social studies or English teachers were selected to provide reports because such teachers taught approximately half of the students in that grade and the student survey had been administered in their classroom

earlier in the 9th grade school year. The teachers were compensated \$5 for every student on whom they provided a report.

School Records

School records were collected from two different sources – the school itself while the study was in progress and archival records provided by school district officials after the study had concluded. Course information and standardized end-of-grade/course (EOG/EOC) test scores were received from both the school and district office, resulting in complete course grade and test score records at both time points for all participating students from both cohorts. Attendance information was collected at the district level and this information was only available on students in cohort 1 for their 9th grade school year, but available at both time points for cohort 2.

Measures

Peer Relations Measures

A primary goal of the present research project was to extend previous work examining the peer relations of gifted youth by exploring the competencies of gifted youth across multiple aspects of the peer context. Toward this end, assessments of sociometric status, friendships and social networks were examined.

Sociometric Status

During the student survey administration, grade-wise sociometric nominations were obtained from all participating students. An unlimited nomination procedure was

employed such that students were not restricted in the number of peers they could nominate in response to any question. To assess peer group acceptance and rejection, students were asked to circle the names of all the peers in their grade: (a) “who you like the most” (*Liked Most*) and (b) “who you like the least” (*Liked Least*). For each sociometric item, the number of ‘like most’ and ‘like least’ nominations a student received were standardized within grade to create standardized *liking* and standardized *disliking* scores, respectively. *Social preference* was calculated by subtracting the standardized disliking scores from standardized liking scores and *social impact* was determined by summing the standardized liking and disliking scores.

In addition to continuous variables of sociometric status (i.e., liking, disliking, social preference, social impact scores), students were classified as popular, rejected, average (including unclassified), neglected, or controversial sociometric status based on the criteria specified by Coie et al. (1982) with scoring modifications developed for use with unlimited modifications (Terry, 2000). Student were classified as being rejected by peers if their social preference score was less than -1, standardized liked most score was less than 0, and standardized liked least score was greater than 0. Students were classified as popular if their social preference score was greater than 1, standardized liked most score was greater than 0, and standardized liked least score was less than 0. Controversial children were those with social impact scores greater than 1 and standardized liked most and liked least scores both greater than zero. Students were classified as neglected

if their social impact scores was less than -1, and their standardized liked most and liked least scores were both less than zero. Remaining students were classified as average, which included all students with a social preference score between -1 and 1 and a social impact score less than 1.

Friendships Quantity and Quality

Nominations for the “like most” sociometric item were used to identify friendship associations (see Bukowski & Hoza, 1989). A *reciprocated friendship association* was identified whenever two adolescents nominated each other for the ‘like most’ sociometric item. The number of reciprocated friendship associations was summed for each student.

The “Friends and Peers Survey” is a 71-item measure that assesses the characteristics of relationships with the students’ best friends, romantic partners, and other friends (O’Donnell, Hawkins, & Abbott, 1995; Schimmel, 2001). One subscale from this measure was used in the present study: *bonding with best friend*. This bonding subscale assessed the quality of the relationship students had with their best friend in 7th Grade. Participants were asked to rate 5 items on a 4-point scale (1= *very much* to 4= *not at all*) about their best friend such as, “Do you feel very close to this person?” An overall score for the subscale was formed by averaging the 5 items (reversed-scored), with resulting scores on both subscales ranging from 1 to 4, with lower scores denoting a lower mean level of bonding with one’s best friend. Adequate internal consistency for

the scale was found in the present research (Cronbach's $\alpha = .72$) which is concordant with reliability found for this measure in previous research (Schimmel, 2001).

Social Network Centrality

Social Cognitive Map (SCM) procedures developed by Cairns and colleagues (Cairns, Leung, Buchanan, & Cairns, 1995; Cairns, Perrin, & Cairns, 1985; Cairns et al., 1988) were used in the current study to identify cliques within their current grade level. The students were first asked to name all the students in their grade "who hang around together a lot." Students were instructed to list the names of the students who hang around together and to name all of the groups that they could. Although only the participating students completed the measure, they reported on all of the students in their grade. Procedurally this was done prior to sociometric nominations and, thus, students were not presented with student rosters to prompt their memory. A composite SCM of the peer group network was then formed using a computer program (SCM version 4.0) to combine the information across all students. As outlined by Cairns and colleagues, this program uses a co-occurrence matrix of the number of nominations that each student received for being members of a clique to define an individual's level of centrality (*Individual Centrality*) within the clique. Furthermore, the program determines the level of centrality of each clique within the larger social network (*Group Centrality*). Higher scores on these measures reflect greater centrality. *Social Network Centrality* is determined by considering both the individual student's within-clique centrality and the

clique's centrality to which the student belongs within the larger network. Students were classified as being a *Nuclear, Secondary, or Peripheral* member of the larger social network. *Isolates* were identified as students not nominated as belonging to any particular clique.

Gifted Peer Affiliations

Gifted Friends. Information regarding the gifted status of students' friendship associations was also examined. The number of times a student was identified as having a reciprocated friendship association with a gifted peer was totaled and divided by the total number reciprocated friendship associations to calculate the proportion of gifted peers a student had as friends. Students who were identified as having no friends were given a value of 0% for this variable.

Gifted Clique Members. Information regarding the gifted status of students' clique associations was also examined. The number of clique members who were identified as being gifted was divided by the total number of clique members to calculate the proportion of gifted clique affiliates. Although gifted status of non-participating students was not known to the researchers, as previously mentioned, it was estimated that very few non-participants were gifted. As such, in the situation in which cliques contain members who were non-participating students, these students were classified as non-gifted. Those students who did not belong to a clique in the network and were identified as "isolates" were given a value of 0% for this variable.

Adjustment Measures

The second aim of the current research project was to examine whether the link between problematic peer relationships and concurrent and later adjustment was moderated by giftedness. To address this, adjustment information in three domains (i.e., behavioral, psychological, academic) were collected on participants at all three grade levels. However, it should be noted that the longitudinal design of the larger study resulted in new measures of adjustment indices added at later time points in the larger study. (See Appendix A for copies of measures used in the current study).

Measures of Behavioral Adjustment

For the purposes of this research project, behavioral adjustment was operationalized using three measures. Collectively, these measures assessed multiple indices of behavioral adjustment, including aggression, victimization, leadership, social skillfulness and conduct problems. For organizational reasons, the different measures assessing behavioral adjustment are presented according to the source of the information rather than by the specific behavioral adjustment indices.

Behavioral Nominations (Peer Report). Students were provided with a roster of all students in their current grade and asked to make unlimited nominations of peers who fit various behavioral descriptors during survey administration. *Overt aggression* was based on nominations for the descriptor “fight a lot, hit others, or say mean things to them.” Nominations of *relational aggression* were based on the item “leave other kids

out on purpose or talk about them behind their backs." *Prosocial leadership* was derived from nominations for the item "are leaders and good to have in charge." Lastly, *victimization* was based on nominations for the descriptor "get picked on and teased; have mean things said about them or are left out." For each behavioral item, the number of nominations a student received was summed and standardized within grade.

Conduct Problems (Self Report). The "Things That You Have Done" survey is a 25 item self-report measure included in the National Youth Survey (Elliot, Ageton, & Huizinga, 1985) that assesses the number of occasions on which respondents have engaged in various deviant behaviors over the 6 months prior to survey administration. The primary purpose for including this measure was for the assessment of severe conduct problems that were not assessed elsewhere in the current study. Thus, 20 items from this measure were used to assess dimensions of conduct problems, including theft (e.g., "number of times you stole something or tried to steal something worth between \$5 and \$50"), vandalism (e.g., "number of times you purposely damaged or destroyed property that didn't belong to you"), school delinquency (e.g., "number of times skipped classes or school without an excuse"), organized delinquency (e.g., "number of times you have been involved in a gang fight") and general delinquency (e.g., "number of times run away from home"). All 20 items were dichotomously coded (0= no occurrence and 1= at least one occurrence of the behavior in the previous six months) and summed

to create a composite score. This composite measure of conduct problems demonstrated sufficient internal consistency (Cronbach's $\alpha_{\text{Grade 7}} = .84$; Cronbach's $\alpha_{\text{Grade 9}} = .85$).

Social Skillfulness (Teacher Report). Using the teacher measure developed by Putallaz et al. (2007), two teachers completed an 82-item measure in the spring of the 9th grade school year comprising 15 scales that assessed each student's behavioral, emotional and academic adjustment. The present study examines 6 subscales of this measure which assesses different social skills, including *empathy* (e.g., "This student is very good at understanding other people's feelings"), *positive leadership/assertiveness* (e.g., "This student is a leader, and can tell others what should be done but is not too bossy."), *inclusiveness/cooperation* (e.g., "This student makes things work well in a group."), *non-intrusive joining* (e.g., "This student joins in with others in an appropriate and positive manner"), *conflict resolution* (e.g., "This student resolves conflicts with peers.") and *disruptive* (e.g., "This student does things that other children think are strange or inappropriate"). Teachers rated each item along a 5-point scale (1 = *never true* to 5 = *usually true*). This information was obtained from teachers only in 9th grade. The 6 subscales from this measure proved to have high internal consistency (Cronbach's $\alpha_{\text{Empathy}} = .78$; Cronbach's $\alpha_{\text{Assertiveness}} = .92$; Cronbach's $\alpha_{\text{Cooperation}} = .89$; Cronbach's $\alpha_{\text{Joining}} = .79$; Cronbach's $\alpha_{\text{Conflict Resolution}} = .91$; Cronbach's $\alpha_{\text{Disruptive}} = .85$), which is concordant with reliability found for this measure in previous research (Putallaz et al., 2007).

Measures of Academic Adjustment

For the purposes of this research project, academic adjustment was operationalized using course grades, year-end test scores, and attendance record. Thus, academic adjustment was an index of academic competence and engagement at school.

Course Grades. Numerical (0-100) year-end grades from the major academic areas of study (e.g., Math, Language Arts, Science and Social Studies) were obtained directly from the school records for all participating students at the conclusion of each school year. This information was available for all students at both time points. Given that grades from all four course subjects were highly related at each time point (Cronbach's $\alpha_{\text{Grade 7}} = .97$; Cronbach's $\alpha_{\text{Grade 9}} = .95$), grades were averaged to create a composite score for each student.

EOG/EOC Test Scores. Standardized End of Grade (EOG) test scores in both math and reading were obtained from school records for every participating student in 7th and 9th grade. Notably, starting in Grade 9 (the first year of high school), students in the school district began taking End of Course (EOC) standardized tests. The current study examined 9th grade scores on the English I and Algebra I/ II EOCs obtained from school records, as these were thought to be the academic subjects most equivalent to content of the math and reading EOGs taken by students in 7th grade. Since scale scores on the EOG and EOC tests differed each year it was administered, percentile scores instead of raw scores were used to assess students' performance on these tests. Not surprising,

percentile scores for math and reading EOG/Cs were highly related to one another and thus were combined to create a composite score (Cronbach's $\alpha_{\text{Grade 7}} = .88$; Cronbach's $\alpha_{\text{Grade 9}} = .87$).

School Attendance. Consistent with previous research (see Parker et al., 1995), the present study used measures of absenteeism to assess academic functioning. Specifically, the number of unexcused absences and number of times being tardy to class were totaled for each participating student. These records were provided by school records and were available at both time points for Cohort 2, but only 9th grade for Cohort 1.

Measures of Psychological Adjustment

For the purposes of the proposed research project, psychological adjustment was operationalized by using three measures, which included reports of self-concept and teacher assessments of depression and anxiety. Thus, psychological adjustment was an index of self concept, negative mood and internal distress.

Self-Concept (Self Report). A measure of self-concept was created from a self-perception measure developed by investigators for the purposes of the larger study. Students were asked to indicate "where you think you fall" on a 7-point scale (1=not very to 7=very) on the following six items: "smart," "cool," "able to stand up for self and others," "attractive," "good at hanging out with lots of kids", and "easy to get a boy/girlfriend." Ratings among the items were highly correlated, with the exception of

the “smart” item. As such, five items were combined to create a single composite of overall self-concept (Cronbach’s $\alpha_{\text{Grade 7}} = .82$; Cronbach’s $\alpha_{\text{Grade 9}} = .85$) whereas the rating of how smart students perceived themselves to be was used to create a separate assessment of intellectual/academic self-concept. These measures were completed by participants in both cohorts at all grade levels.

Internalizing Problems (Teacher Report). Using the previously described teacher measure, three subscales were used to assess internalizing problems for each student, including social avoidance (e.g., “This student is anxious and insecure in social situations”), fear of negative evaluation (e.g., “This student worries that other children don’t like her”) and depression (e.g., “This student cries a lot”). Teachers rated each item along a 5-point scale (1 = *never true* to 5 = *usually true*). This information was obtained from teachers only in 9th grade. The three subscales from this measure proved to have high internal consistency (Cronbach’s $\alpha_{\text{Social Avoidance}} = .91$; Cronbach’s $\alpha_{\text{Fear of Negative Evaluation}} = .88$; Cronbach’s $\alpha_{\text{Depression}} = .70$), which is concordant with reliability found for this measure in previous research (Putallaz et al., 2007).

Summary of Measures

Measures of *sociometric status* (i.e., liking, disliking, social preference, social impact, sociometric status categories), *friendship quantity* (i.e., reciprocated friendship associations), *friendship quality* (i.e., bonding with best friend, bonding with other friends), *social network centrality* (i.e., individual centrality, group centrality, social

network centrality positions), and *gifted peer affiliations* (i.e., proportion of reciprocated friendships with gifted peers, proportion of gifted clique members) were used in the current study to assess distinct aspects of the peer system. Measures from multiple informants provided collective information on the *behavioral adjustment* (i.e., aggression, victimization, leadership, conduct problems, prosocial/social skills), *academic adjustment* (i.e., course grades, standardized test scores, school attendance) and *psychological adjustment* (i.e., self-concept and internalizing problems) of students in the current study. Table 1 summarizes the different constructs that were used to measure the multiple peer relations and adjustment dimensions as well as summarize the time points in which the measures were used in the present study.

Table 1: Summary of Measures Across Time

	7th grade	9th grade
7th Grade Peer Relations		
Sociometric Status	X	-
Friendship Quantity	X	-
Friendship Quality	X	-
Social Network Centrality	X	-
Gifted Peer Affiliations	X	-
Behavioral Adjustment		
Overt Aggression	X	X
Relational Aggression	X	X
Leadership	X	X
Victimization	X	X
Conduct Problems	X	X
Social Skillfulness	-	X
Academic Adjustment		
Course Grades	X	X
EOG/EOCs test score	X	X
Attendance	Cohort 2 only	X
Psychological Adjustment		
Self-Concept	X	X
Internalizing Problems	-	X

Data Analytic Plan

The data analytic plan was divided into four different steps. The first step was to analyze the data for biases due to attrition and non-response. Next, to provide a context for inferential analyses, descriptive statistics were calculated on all predictor and outcome variables. Such information was analyzed to determine if distribution of scores and frequencies met necessary assumptions and was consistent with expectations set by prior research. The third step in the analytic plan examined whether gifted and non-

gifted students significantly differed with regard to peer relations and adjustment measures. The fourth and final step of the analytic plan examined the link between peer relations and concurrent and later adjustment and whether the association was moderated by giftedness.

Results

Attrition and Missing Data Analysis and Plan

Missing data due to attrition was found for 24% of the sample (N=80). The students who left the study in 9th grade were not found to differ from those who remained in the study with regard to demographic characteristics (i.e., SES, Gender, and Ethnicity), giftedness, or 7th-grade peer relations measures. In terms of adjustment, in 7th grade, these students were higher in aggression (both overt and relational) and reported higher overall self-concept than those students who remained in the study at both time points. Taken together, the sample at 9th grade is thought to be a relatively random subsample of the original sample with little bias due to attrition.

Although no participant elected to prematurely terminate completion of the survey at either time point, individual items were left blank on an infrequent basis. Missing data due to non-response on self-report measures ranged from 1% to 6% in 7th grade and 4% to 6% in 9th grade. Peer nominations were collected on every participant in the 7th grade, while 2 students did not receive peer nominations in the 9th grade. Teacher reports collected in 9th grade had missing data on 3% of the sample at that time point. Information collected from the school district was missing for 4% of the sample in 7th grade and 3% in 9th grade. A maximum likelihood (ML) strategy was used to impute missing values, such that observed data were used to estimate parameters, which were then used to estimate the missing scores. ML strategies have demonstrated superiority

to deletion, nonstochastic imputation (e.g., mean impute), and stochastic regression imputation methods (Roth, 1994) for multivariate normal distributions. Given analyses conducted with missing and imputed values yielded very similar pattern of results, results using the imputed values are only presented.

Descriptive Statistics: Predictor Variables (7th Grade Peer Relations)

Recalling that 7th-grade measures of sociometric status, friendship and clique membership serve as predictors in subsequent analyses, descriptive statistics for these peer relation variables were examined. Table 2 presents the range, mean, and standard deviation values for the 7th-grade peer relation measures of (1) standardized liking, (2) standardized disliking (3) social preference, (4) social impact, (5) number of reciprocated friendship associations, (6) self-reported bonding with best friend, (7) individual clique centrality, and (8) group centrality. Categorical versions of the continuous peer relation measures in 7th grade were also examined and discussed below.

Sociometric Status – 7th Grade

As summarized in Table 2, standardized scores of social preference, social impact, standardized liking and standardized disliking scores all revealed adequate variability. Using the two-dimensional classification system developed by Coie and colleagues, 5 mutually exclusive sociometric categories of popular, controversial, average (including unclassified), neglected, and rejected were determined based on

standardized social preference and social impact scores. Approximately 51% of the sample was classified as average, 13% as popular, 7% as controversial, 16% as neglected and 13% as rejected. Notably, this distribution is similar to patterns reported in previous work using variations of the Coie classification system (Newcomb et al., 1993).

Friendship Quantity and Quality – 7th Grade

In terms of quantity of reciprocated friendship associations, students in the sample had as few as 0 and upwards to 30 reciprocated friendship associations, with the mean number being approximately 10 reciprocated friendship associations (see Table 2). As summarized in Table 2, as a group, students in the sample reported high levels of bonding within their best friendships such that the mean response was a 3.32 on a 4-point scale. Only 13 participants in the current study were found to have no reciprocated friendship associations, yielding a lower percentage (4%) when compared to the estimate provided by Parker and Asher (1993) who reported that between 6% and 11% of children have no friends or receive no friendship nominations from peers. Thus, to determine students within the current sample who had a low number of friends relative to their school peers, a tertile split was conducted to group the sample (which had a median of 9 reciprocated friendship associations) as having a *low* (0-4), *medium* (5-13), or *high* (14-30) number of reciprocated friendship associations.

Sociometric Network Centrality and Isolation – 7th Grade

A total of 62 unique cliques were identified across both cohorts of 7th grade students ($N_{\text{Cohort 1}} = 34$ groups; $N_{\text{Cohort 2}} = 28$ groups) with a range of 2-16 members and mean clique size of approximately 8 members. Using SCM procedures developed by Cairns and colleagues, each student's position in the larger social network (i.e., nuclear, secondary, peripheral, isolate) was determined using both their within-group centrality (i.e., individual clique centrality) and their group's centrality (i.e., group network centrality). Eight percent of the sample was found to be a nuclear member, 34% a secondary member, and 52% a peripheral member of the larger social network. A small portion of students in the sample ($N=21$) were identified as isolates, meaning that they did not belong to a clique in the network.

Table 2: Descriptive Data for 7th Grade Measures of Sociometric Status, Quantity and Quality of Friendship Associations, and Clique Centrality

	Minimum	Maximum	Mean (SD)
Sociometric Status			
Standardized Social Preference Score	-4.45	2.33	.01 (1.0)
Standardized Social Impact Score	-2.13	2.99	.00 (1.0)
Standardized Liking Score	-2.02	2.71	.00 (.97)
Standardized Disliking Score	-1.36	5.23	.02 (1.0)
Friendship Participation			
Reciprocated Friendship Associations: Total #	.00	30.00	9.82 (6.3)
Bonding with Best Friend	1.00	4.00	3.31 (.54)
Social Network			
Clique Members: Total #	2.00	16.00	7.75 (4.1)
Individual Clique Centrality	0.00	1.33	.63 (.34)
Group Centrality	0.00	1.18	.37 (.29)

Note: $N=327$

Descriptive Statistics: Outcome Variables (7th and 9th Grade Measures of Behavioral, Academic, Psychological Adjustment)

Peer, self, teacher and school reports provided collective information on various dimensions of behavioral, academic and psychological adjustment for the students in the current study at Grade 7 and Grade 9. These indices of adjustment served as the dependent variables in subsequent analyses, and descriptive statistics for the different adjustment measures are presented in Table 3, organized by adjustment domain and grade level.

Range, mean, and standard deviation values for measures of adjustment in 7th grade are presented in Table 3. The full adolescent sample in 7th grade (N=327) appeared to be in good health across all domains, with generally low levels behavioral, academic or psychological problems. Overall, participants reported relatively low conduct problems, with adolescents reporting an average of 2 delinquent acts sometime in the six months prior to completing the survey in the Fall of 7th grade. Regarding academic adjustment, the adolescent sample in 7th grade demonstrated average performance in their coursework and EOG test scores. The 7th grade sample was not characterized by high rates of absenteeism, as the average time a student was absent or tardy was between 1 and 5 times across the entire school year. As measured by overall and academic self-concept, as a group, the adolescents in 7th grade viewed themselves fairly favorably. Taken together, the sample appeared to be relatively well-adjusted in terms of their behavioral, academic and psychological functioning in 7th grade.

Next the range, mean, and standard deviation values for the adjustment measures obtained from all participating students in Grade 9 (N=247) were examined. As summarized in Table 3, the sample continued to retain relatively good behavioral, academic and psychological health, yielding similar range and means as reported in 7th grade. Notably, compared to adjustment assessed in 7th grade, adolescents in 9th grade were found to increase in rates of overt aggression [$t(1,246)=6.40, p<.0001$], relational aggression [$t(1,246)=5.89, p<.0001$], leadership [$t(1,246)=4.23, p<.0001$], victimization [$t(1,246)=2.60, p<.01$], conduct problems [$t(1,246)=9.55, p<.000$], EOG test scores [$t(1,246)=1.98, p<.05$], unexcused absences [$t(1,110)=8.12, p<.0001$], and overall self-concept [$t(1,246)=5.11, p<.0001$]. Additionally, declines in course grades [$t(1,244)= -9.42, p<.0001$] and tardiness [$t(1,110)= -2.73, p<.001$] were observed from 7th to 9th grade. No significant difference across time was found for academic self-concept [$t(1,246)= -.59, ns$]. Despite inclines in some problem behaviors over time, the sample in 9th grade was not found to have significant psychopathology, indicating a healthy sample overall.

Table 3: Descriptive Data (Range, Means, SD) for Adjustment Measures in 7th and 9th Grade

Adjustment Measures (Source)	7 th Grade (N=327)			9 th Grade (N=247)		
	Minimum	Maximum	Mean (SD)	Minimum	Maximum	Mean (SD)
Behavioral Adjustment						
Overt Aggression (Peer)	-.74	5.30	-.04 (.96)	-.92	6.98	.14 (1.1)
Relational Aggression (Peer)	-1.11	5.88	-.02 (.94)	-1.50	4.31	.22 (1.1)
Prosocial Leadership (Peer)	-1.27	4.05	.06 (1.0)	-1.24	4.39	.24 (1.1)
Victimization (Peer)	-1.07	8.19	.02 (1.1)	-.80	9.52	.14 (1.2)
Conduct Problems (Self)	.00	20.00	2.07 (2.9)	.00	17.00	2.64 (3.4)
Empathy (Teacher)	...	...	...	1.20	5.00	3.76 (.76)
Leader/Assertiveness (Teacher)	...	...	...	1.33	5.00	3.44 (.93)
Cooperative (Teacher)	...	...	...	1.50	5.00	3.94 (.72)
Joins Easily (Teacher)	...	...	...	1.80	5.00	3.69 (.69)
Conflict Resolution (Teacher)	...	...	...	1.25	5.00	4.35 (.84)
Disruptive (Teacher)	...	...	...	1.00	4.80	1.49 (.72)
Academic Adjustment						
Course Grades-Average (School)	57.25	99.75	84.88 (9.7)	50.75	98.00	81.92 (10.5)
EOG Test %tile (School)	.03	.99	.56 (.28)	.02	.99	.59 (.27)
# of unexcused absences (School)*	.00	9.00	1.39 (1.7)	.00	24.00	2.53 (3.3)
# of times tardy (School)*	.00	48.00	5.02 (6.65)	.00	44.00	4.07 (5.7)
Psychological Adjustment						
Overall Self-Esteem (Self)	1.20	7.00	5.27 (1.3)	1.40	7.00	5.51 (1.23)
Academic Self-Esteem (Self)	1.00	7.00	5.92 (.99)	1.00	7.00	5.89 (1.1)
Depression (Teacher)	...	...	...	1.00	3.00	1.30 (.47)
Fear of Negative Evaluation (Teacher)	...	...	...	1.00	4.83	2.54 (.94)
Social Avoidance (Teacher)	...	...	...	1.00	5.00	2.28 (.99)

* only collected for Cohort 2 (N=147) in 7th grade; ... indicates data were not collected in 7th grade

Interrelations among Predictor Variables (7th Grade Peer Relations Measures)

Gest et al. (2001) represents the only study to date which has simultaneously examined interrelations among sociometric status, friendship, and social networks. As such, the current study draws from the analytic strategies used in that study to compare the degree to which success or difficulty in these various dimensions relate or overlap.

Pearson Correlations

Pearson correlations (see Table 4) among the different measures of 7th-grade peer relations ranged from no association ($r = -.04$) to quite strong ($r = .87$). Greater social preference was positively associated with having more reciprocated friendship associations and greater network centrality. Being more visible (i.e., high social impact) was associated with having a greater number of reciprocated friendship associations, a higher group centrality, and to a lesser extent greater reported bonding with best friend. Additionally, a greater number of reciprocated friendship associations was positively associated with centrality. Lastly, greater levels of bonding with one's best friend was not related to social preference, but was related to a greater number of reciprocated friendship associations and measures of centrality. Additionally, greater number of reciprocated friendship associations was positively associated with centrality.

Table 4: Pearson Correlations Among Measures of Sociometric Status, Friendship and Social Network Centrality in 7th Grade

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Sociometric Status							
(1) Social Preference	-----						
(2) Social Impact	-.04	-----					
(3) Liking	.77**	.60**	-----				
(4) Disliking	-.79**	.64**	-.23**	-----			
Friendship Quantity /Quality							
(5) Reciprocated Friendships	.54**	.44**	.71**	-.15**	-----		
(6) Bonding with Best Friend	.04	.11*	.10 [†]	.04	.22**	-----	
Social Network Centrality							
(7) Individ. Clique Centrality	.28**	.07	.27**	-.18**	.27**	.15**	-----
(8) Group Clique Centrality	.27**	.43**	.50**	.05	.37**	.13*	.16**

Note: [†]p<.10; *p<.05; **p<.01; Individ. = Individual

Categorical Comparisons

Interrelations among 7th-grade peer relations predictors were also considered using categorical versions of the continuous measures. Network centrality and friendship participation of students in the different sociometric categories (Table 5) was first examined, followed by an examination of the association between network centrality and friendship quantity (Table 6).

There was a significant association between sociometric status and network centrality, $\chi^2(12) = 98.43, p < .0001$. Analysis of adjusted residuals for each cell (see Table 5) suggest the following divergence from chance expectancy: popular and controversial adolescents were more likely to be nuclear individuals in the social network, whereas neglected and rejected adolescents were less likely to be nuclear individuals in the network; neglected and rejected adolescents were more likely to be peripheral

individuals in the network, but popular and controversial adolescents were less likely to be peripheral. Although there were no significant findings regarding isolate status, it is noteworthy that 0% of popular and controversial students were isolates, whereas 11 of the 21 (52%) isolates in the network were either neglected or rejected students, with the remaining being average status.

There was a very similar association between sociometric status and friendship quantity, $\chi^2(8) = 116.47, p < .0001$. The ordering of friendship quantity paralleled the findings for network centrality, with having a high number (14+) of reciprocated friendship associations becoming progressively less common among popular (76%), controversial (54%), average (26%), neglected (2%), and rejected (0%) adolescents. Conversely, having a low number (<5) of reciprocated friendship associations was progressively more common among controversial (4%), popular (5%), average (16%), neglected (45%), and rejected (54%) adolescents.

Finally, social network centrality was strongly associated with quantity of friendships, $\chi^2(6) = 61.72, p < .0001$. As summarized in Table 6, having a high number of reciprocated friendship associations (14+) was more common than expected by chance among individuals with a nuclear position in the social network (54%), and less common than expected by chance among adolescents in a peripheral position (2%) or isolate position (0%) in the social network. Conversely, having few reciprocated friendship associations (<5) was less common than expected by chance among adolescents with a

nuclear social network position and more common than expected by chance among those with a peripheral position in the social network.

Table 5: Social Network Centrality and Friendship Quantity as a Function of Sociometric Status

Centrality	Sociometric Status				
	Popular (N=41)	Controversial (N=24)	Average (N=168)	Neglected (N=53)	Rejected (N=41)
Nuclear	.24* ^G (10)	.29 * ^G (7)	.05 (9)	.00* ^L (0)	.00* ^L (0)
Secondary	.59* ^G (24)	.57* ^G (14)	.37 (62)	.13* ^L (7)	.10* ^L (4)
Peripheral	.17* ^L (7)	.14* ^L (3)	.52 (87)	.76* ^G (40)	.78* ^G (32)
Isolate	.00 (0)	.00 (0)	.06 (10)	.11 (6)	.12 (5)
# of Friends					
Low	.05* ^L (2)	.04* ^L (1)	.16* ^L (27)	.45* ^G (24)	.54* ^G (22)
Medium	.20* ^L (8)	.42 (10)	.58* ^G (97)	.53 (28)	.46 (19)
High	.76* ^G (31)	.54* ^G (13)	.26 (44)	.02* ^L (1)	.00* ^L (0)

Note: N=327. Reading across columns, entries indicate the proportion (and frequency) of individuals within each sociometric status category with Nuclear, Secondary, Peripheral and Isolate network centrality and the proportion with Low, Medium and High number of reciprocated friendships.

* Denotes cells for which observed frequency is either significantly greater than (*^G) or significantly less than (*^L) chance expectancy, based on analysis of adjusted residual for each cell.

Table 6: Friendship Quantity as a Function of Network Centrality

# of Friends	Network Centrality			
	Nuclear (N=26)	Secondary (N=111)	Peripheral (N=169)	Isolate (N=21)
Low	.00* ^L (0)	.07* ^L (8)	.37* ^G (62)	.29 (6)
Medium	.46 (12)	.50 (55)	.48 (82)	.62 (13)
High	.54* ^G (14)	.43* ^G (48)	.15* ^L (25)	.09* ^L (2)

Note: N=327. Reading across columns, entries indicate the proportion (and frequency) of individuals with a given network position with Low, Medium and High number of reciprocated friendships.

* Denotes cells for which observed frequency is either significantly greater than (*^G) or significantly less than (*^L) chance expectancy, based on analysis of adjusted residual for each cell.

Summary

The comparisons outlined in the above sections clarify the limits of the association among sociometric status, friendships, and network centrality. For example, variation in network centrality and friendship quantity within each sociometric group (e.g., 20% of popular adolescents had peripheral positions in the social network; 40% of rejected children had 4 or more reciprocated friendship associations) supports the notion that network centrality and friendship are distinct from sociometric status. Similarly, 15% of adolescents on the periphery of the social network and 9% of adolescents isolated and not belonging to a specific clique were found to have a high number (14+) of reciprocated friendship associations, underscoring that participation in dyadic relationships is not synonymous with centrality in the larger social network. These findings are consistent with expectations and generally converge with the findings of Gest et al. (2001).

Interrelations among Outcome Variables (Behavioral, Academic, Psychological Adjustment Measures)

The following section examines how the adjustment measures relate to one another in order to provide empirical validation for the conceptual groupings of measures proposed earlier (i.e., behavioral, psychological, and academic adjustment). To reduce the number of outcome variables for subsequent analyses, intercorrelations shown in Table 7 were used to determine the appropriateness of combining measures within each of the three adjustment domain.

The first 11 rows of Table 7 summarize the bivariate correlations between the various behavioral adjustment measures assessed in grade 7 (below the diagonal) and 9 (above the diagonal). Although a statistical case can be made to combine overt and relational aggression given the strong overlap between these measures in 7th grade ($r=.82, p<.001$), they will be considered separate constructs in subsequent analyses as these are posited by peer relations researchers to be conceptually distinct constructs of aggression (Crick & Grotpeter, 1995; Underwood, 2003) and it is hypothesized in the current study that gifted youth may use these two forms of aggression differently. Measures of aggression were found to be moderately associated with conduct problems. However, conceptually the latter measure was thought to assess more severe behavioral problems than the peer nominations of overt and indirect aggression, leading to the decision to keep this as a separate measure of behavioral functioning in the current study.

To extend the behavioral adjustment domain to include measures of social skills, teacher reports of various social skills (i.e., empathy, leadership/assertiveness, cooperation, non-intrusive joining, conflict resolution, and disruptiveness) were included as additional measures of behavioral adjustment in 9th grade. Correlations above the diagonal in rows 1-11 demonstrate that the six measures of teacher-reported social skillfulness were significantly inter-correlated (r 's ranged from .38 to .84). As such, a composite score of social skillfulness was created in Grade 9 by taking the mean

score across these 6 subscales, with the disruptive subscale reverse coded so that high scores reflected low scores of disruptiveness. This composite measure of social skillfulness was found to yield excellent internal consistency (Cronbach's $\alpha = .91$). Although an assessment of the reliability of this composite over time was not possible given that these measures were not collected in the 7th grade, measures of aggression, victimization, leadership, and conduct problems were found to be very stable across time, with test-retest reliability (correlations in diagonal) ranging from .38 to .84.

Interrelations among academic adjustment measures are summarized in rows 12-15 of Table 7. As one would expect, course grades were positively related to standardized test scores on the EOG/EOC. Course grades and EOG/EOC test scores were negatively related to absenteeism and tardiness, validating the conceptual argument that these measures may capture school engagement to some degree. The two attendance measures were summed and combined into a single composite score of school attendance despite their low inter-correlation ($r_{\text{grade 7}} = .16$; $r_{\text{grade 9}} = .09$). Overall, the measures of academic adjustment used in the study were found to be relatively stable across time, with test-retest reliability (correlations in diagonal) ranging from .32 to .86.

Lastly, interrelations among psychological adjustment measures are summarized in rows 16-20 of Table 7. Academic self-concept was not related to overall self-concept in 7th grade ($r = .06$), validating the decision to include both a measure global self-concept in addition to a domain-specific measure of academic self-concept. To

supplement the self-concept measures, teacher reports of depression and dimensions of social anxiety (i.e., social avoidance and fear of negative evaluation) were included as additional measures of psychological adjustment in 9th grade. Correlations above the diagonal in rows 16-20 demonstrate that teacher measures of depression and anxiety were significantly correlated (r 's ranged from .19 to .46). As such, a composite score of internalizing problems in Grade 9 was created by taking the mean score across the 3 subscales. This composite of internalizing problems was found to yield adequate internal consistency (Cronbach's $\alpha = .72$). Although the reliability of this composite over time was not possible to determine given these measures were not collected in the 7th grade, both the overall and academic measures of self-concept were moderately stable across time, with test-retest reliabilities of .39 and .66, respectively.

Table 7: Pearson Correlations Among 7th and 9th Grade Adjustment Measures

Adjustment Measures (Source)											
Behavioral Adjustment	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Overt Aggression (Peer)	.79**	.51**	-.09	-.08	.30**	-.39**	-.32**	-.51**	-.31**	-.43**	.36**
(2) Relational Aggression (Peer)	.82**	.60**	.36**	-.15*	.09	-.03	.07	-.12 [†]	.08	-.17**	.16*
(3) Prosocial Leadership (Peer)	.12*	.29**	.67**	-.18*	-.20**	.40**	.48**	.36**	.46**	.21**	-.28**
(4) Victimization (Peer)	-.07	-.12*	-.21**	.84**	-.10	-.17**	-.10	-.09	-.18**	-.18**	.26**
(5) Conduct Problems (Self)	.41**	.30**	-.09	-.11	.38**	-.19**	-.22**	-.30**	-.18**	-.19**	.17*
(6) Empathy (Teacher)	...	...	...	...	...	...	.76**	.84**	.72**	.67**	-.51**
(7) Leader/Assertiveness (Teacher)	...	...	...	...	...	...	...	.78**	.82**	.53**	-.38**
(8) Cooperative (Teacher)	...	...	...	...	...	...	...	...	.72**	.76**	-.57**
(9) Joins Easily (Teacher)	...	...	...	...	...	...	...	...	...	.53**	-.44**
(10) Conflict Resolution (Teacher)	...	...	...	...	...	...	...	...	...	...	-.64**
(11) Disruptive (Teacher)	...	...	...	...	...	...	...	...	...	...	...
Academic Adjustment											
	(12)	(13)	(14)	(15)							
(12) Course Grades (School)	.74**	.82**	-.23**	-.14*							
(13) EOG/C Test Scores (School)	.75**	.86**	-.17*	-.02							
(14) Unexcused Absences (School)	-.23**	-.20*	.43**	.09							
(15) Tardiness (School)	-.34**	-.17*	.16 [†]	.32**							
Psychological Adjustment											
	(16)	(17)	(18)	(19)	(20)						
(16) Overall Self-Concept (Self)	.66**	.25**	-.05	-.26**	-.16*						
(17) Academic Self-Concept (Self)	.06	.39**	-.20**	-.05	-.16*						
(18) Depression (Teacher)	...	...	...	.19**	.46**						
(19) Social Avoidance (Teacher)	...	...	...	...	.37**						
(20) Fear of Negative Eval. (Teacher)	...	...	...	...	...	

Note: Correlations among 7th grade adjustment measures are presented below the diagonal; Correlations among 9th grade adjustment measures are presented above the diagonal. **Bolded correlations** in the shaded cells along the diagonal indicate the test-retest reliability of the measure across a 2 year time span. Abbreviation: Eval=Evaluation; [†] p<.10; *p < .05; **p < .01

Peer Relations of Gifted and Non-Gifted Adolescents

Recalling the predictions that gifted youth would generally demonstrate more positive peer relations than non-gifted youth, analyses described in the following section compare gifted and non-gifted youth in terms of their sociometric status, friendships and social networks in 7th grade. In order to address questions about the specific nature of gifted students peer relations, additional predictors concerning affiliations with gifted peers were explored in addition to the traditional measures of peer relations previously discussed. Note that in all analyses, socioeconomic status (SES), gender and ethnicity acted as covariates given the prior relationship established between giftedness and these demographic variables.

To examine differences between gifted and non-gifted students in terms of sociometric status, four separate Analysis of Covariance (ANCOVAs) analyses were conducted. Giftedness served as the independent variable, with 7th-grade social preference, social impact, standardized liking and disliking scores serving as dependent variables. Summarized in Table 8, gifted students had significantly higher social preference scores [$F(1,322)=7.38, p<.01$] than their non-gifted peers, but did not differ in terms of their social impact within the peer group [$F(1,322)= 1.50, ns$]. This difference in acceptance was not because gifted students were more liked by their peers [$F(1,322)=1.94, ns$], but rather because gifted students were significantly *less* disliked [$F(1,322)=7.85, p<.01$] when compared to non-gifted peers. A logistic regression also was

conducted to understand how sociometric status categories related to gifted status. After controlling for SES, gender and ethnicity, students classified as popular were twice as likely as those classified as average to be identified as gifted in this sample [$\text{Exp}(B) = 2.63, p < .05$]; however, students classified as rejected [$\text{Exp}(B) = 2.63, p < .05$], neglected [$\text{Exp}(B) = 2.63, p < .05$], or controversial [$\text{Exp}(B) = 2.63, p < .05$] were no more likely to be identified as gifted as they were non-gifted. Taken together, and consistent with prior research, gifted students in the present study appeared to fare better on measures of peer acceptance than non-gifted students.

Next, to examine differences between gifted and non-gifted youth in terms of friendship quantity and quality, four additional ANCOVAs were conducted, with giftedness as the independent variable and number of reciprocated friendship associations, number of like nominations received, number of like nominations cast, and bonding with one's best friend assessed in 7th grade serving as the dependent variables. As seen in Table 8, consistent with prior research (Cohen et al., 1994) gifted students did not differ from non-gifted students in the number of reciprocated friendships [$F(1,322) = 1.15, ns$], with gifted students having an average of 10 reciprocated friendships and non-gifted students having approximately 9.5 reciprocated friendships. As an imperfect proxy for friendship selection, number of liked most nominations cast and received were compared. Both gifted and non-gifted students received a similar number ($M=22$ v. $M=20$) of liked most nominations [$F(1,322) = 1.85, ns$], but gifted students were found to

cast marginally fewer liked most nominations ($M=23.72$ v. $M=28.00$) than non-gifted students [$F(1,322)= 3.18, p<.10$]. Lastly, gifted students did not differ from non-gifted students in their reported level of bonding with their best friend [$F(1,322)= .61, ns$].

To examine differences between gifted and non-gifted youth in terms of social network centrality, two separate ANCOVAs were conducted with giftedness serving as the independent variable and individual clique centrality and group centrality serving as the two dependent variables. Summarized in Table 8, within one's own individual clique, gifted students were marginally more central than non-gifted students [$F(1, 322) = 3.73, p<.10$]. However, they were not found to be members of cliques with significantly higher centrality in the larger social network than non-gifted students [$F(1, 322) = .30, ns$]. An additional logistic regression was conducted to examine how social network position differs as a function of giftedness. After controlling for gender, ethnicity and SES, regression results revealed that having a nuclear [$\text{Exp}(B) = 1.52, ns$], peripheral [$\text{Exp}(B) = .71, ns$] or isolate [$\text{Exp}(B) = 1.21, ns$] position in the larger social network did not significantly predict whether a student was identified as gifted or not in the current sample when compared to the reference position of having secondary centrality within the larger network.

Another aim of the current study was to determine with whom gifted students associate in terms of their friendship and clique membership. As such, two ANCOVAs were conducted, with giftedness as the independent variable and the percent of

reciprocated friendships with gifted peers and percent of clique members who were gifted as the two dependent variables. As seen in Table 8, gifted students were found to have significantly more reciprocated friendships with other gifted students (59%) compared to the proportion (35%) found for non-gifted students [$F(1,322)=24.20, p<.001$]. Similarly, gifted students were members of cliques that consisted of a significantly higher proportion of other gifted students (59%) than the proportion of gifted students found in the cliques of non-gifted students (20%) [$F(1, 322)= 64.73, p<.001$].

In summary, consistent with previous research, gifted adolescents in the present study had greater social preference scores than their non-gifted peers (Cohen et al., 1994). However, gifted students did not differ in the number of friends they had or their reported level of bonding with their best friends compared to non-gifted students. Although gifted students were found to be more nuclear members of their individual cliques, their centrality in the larger social network did not differ from non-gifted students. Not surprisingly, gifted students were found to have more friends and clique members who were also gifted compared to non-gifted students, which is consistent with theories of homophily.

Table 8: Mean Differences in Sociometric Status, Friendship Quantity and Quality, and Social Network Centrality as a Function of Giftedness (Controlling for SES, Gender, Ethnicity)

	Gifted M(SD)	Non-Gifted M(SD)	F-Value
Sociometric Status			
Social Preference Score	.19 (.09)	-.16 (.08)	7.38**
Social Impact Score	-.09(.09)	.07 (.08)	1.50
Standardized Liking Score	.10(.09)	-.08(.08)	1.94
Standardized Disliking Score	-.19(.09)	.17(.08)	7.85**
Friendship Quantity and Quality			
Friendship Associations- Reciprocated	10.31 (.57)	9.45 (.48)	1.15
Friendship Associations- Received	22.45 (.94)	20.64 (.80)	1.85
Friendship Associations- Cast	23.72 (1.7)	28.00 (1.4)	3.18†
Bonding with Best Friend	3.34 (.05)	3.29 (.04)	.61
Social Network			
Individual Clique Centrality	.68 (.03)	.60(.03)	3.73†
Group Centrality	.38 (.03)	.36 (.02)	.30
Gifted Peer Affiliations			
% Gifted Friends – Reciprocated	.53(.02)	.37 (.02)	24.20***
% of Gifted Clique Members	.48 (.02)	.24 (.02)	64.73***

Note: † $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .0001$

Adjustment of Gifted and Non-Gifted Adolescents

Recalling the predictions that gifted youth would generally demonstrate a more positive adjustment profile than non-gifted youth, analyses described in the following section compare gifted and non-gifted youth in terms of their behavioral, academic, and psychological adjustment assessed at both 7th and 9th grade. Specifically, a series of one way ANCOVAs was conducted, controlling for the effect of SES, gender and ethnicity, with giftedness serving as the independent variable and measures of adjustment serving as the various dependent variables (see Table 9 for means).

In terms of behavioral adjustment, significant or marginally significant main effects for giftedness were found for 7th grade assessed overt aggression [$F(1, 322) = 10.23, p < .001$], relational aggression [$F(1, 322) = 2.92, p < .10$], leadership [$F(1, 322) = 16.00, p < .001$] and conduct problems [$F(1, 322) = 11.78, p < .001$], but not for victimization [$F(1, 322) = 0.95, ns$]. Gifted students were seen by their peers as less overtly aggressive, marginally less relationally aggressive and they reported fewer conduct problems, compared to non-gifted students. Gifted students also were more likely to be seen by peers as leaders than were non-gifted peers. However, gifted students did not differ from non-gifted students in the degree to which they were seen by peers as victims.

The same set of analyses was conducted on 9th grade measures of behavioral adjustment, with the identical pattern of results revealed for overt aggression and leadership. However, by 9th grade, gifted students ($M=.19$) were seen by peers as equally relationally aggressive as non-gifted students ($M=.24$) [$F(1, 242) = .09, ns$] and ($M=2.21$) no longer differed from their peers in their reported engagement in conduct problems ($M=2.21$ v. 3.00) [$F(1, 242) = 2.53, ns$]. Additionally, teachers reported gifted students to be significantly more socially skilled than non-gifted students ($M=4.16$ v. 3.77) [$F(1, 234) = 19.55, p < .001$]. Lastly, two repeated measure ANCOVAs were conducted to investigate the proportional use of relational forms of aggression to overt forms as seen by peers [7th grade: $F(1, 322) = 5.19, p < .05$; 9th Grade: $F(1, 242) = 5.41, p < .05$]. Consistent with speculations, Figure 1 illustrates that, in both 7th and 9th grade, peers reported gifted

adolescents to be higher in their use of relational aggression relative to overt aggression (7th grade: M= -.14 v. M= -.24; 9th grade: M= .19 v. M= -.08), whereas non-gifted adolescents had similar or slightly lower levels of relational aggression relative to overt aggression (7th grade: M =.11 v. M=.07; 9th grade: M= .24 v. M=.32).

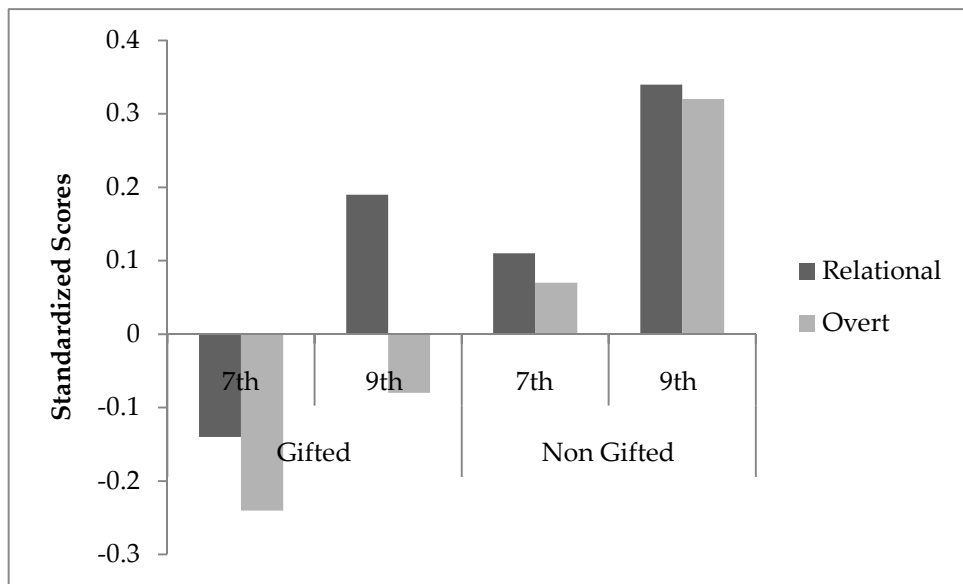


Figure 1: Within-Gifted Analyses of Aggression

Regarding academic adjustment in 7th grade, significant main effects for giftedness were found for course grades [$F(1,322)=85.48, p<.001$], EOG performance [$F(1,322)= 150.32, p<.001$], but not for school attendance [$F(1,154) = .71, ns$]. Not surprising, gifted students were found to have higher course grades and EOG test scores compare to those of their non-gifted peers. The same set of analyses was conducted on 9th grade measures of academic adjustment, with the identical pattern of results revealed.

Lastly, in terms of 7th grade psychological adjustment, a main effect for giftedness was only found for academic self-concept [$F(1, 322)=16.24, p<.0001$], but not for overall self-concept [$F(1, 322)=.48, ns$], such that gifted students reported higher intellectual/academic self-concept, but not overall self-concept when compared to non-gifted students. The same pattern of findings for self-concept was found in 9th grade, when the analyses were repeated. In terms of internalizing problems in 9th grade, gifted students were seen by teachers as evidencing fewer internalizing problems ($M= 1.55$) than non-gifted students ($M=1.82$) [$F(1,234) = 10.75, p<.001$].

In summary, the adjustment profile of gifted adolescents was found to be generally consistent with one that would engender positive peer relations. Specifically, gifted adolescents were more likely to be seen by peers as leaders and by teachers as socially skilled, and less likely to be seen by peers as overtly aggressive or report conduct problems when compared to non-gifted adolescents. Interestingly, by 9th grade gifted students were no longer seen as less relationally aggressive, indicating a pronounced increase in this behavior for gifted students over time according to their peers. In fact, gifted adolescents, but not their non-gifted peers, were seen by peers as engaging in more relational to overt forms of aggression. Additionally, as one would expect, gifted adolescents received higher course grades and EOG test scores than non-gifted students. In terms of psychological adjustment, gifted students viewed themselves more favorably regarding their academic attributes and teachers reported

fewer internalizing problems compared to non-gifted students in the sample. These findings were consistent with current research that generally portrays gifted youth as better adjusted, or as well adjusted, as their non-gifted peers (see Robinson, 2008).

Table 9: Mean Differences in Adjustment as a Function of Giftedness (Controlling for SES, Gender, Ethnicity)

	Gifted M(SD)	Non-Gifted M(SD)	F-Value
Behavioral Adjustment Measures			
1a. 7 th Grade Overt Aggression	-.24 (.08)	.11 (.07)	10.23**
1b. 9 th Grade Overt Aggression	-.08 (.11)	.32 (.10)	6.56*
2a. 7 th Grade Relational Aggression	-.14 (.09)	.07 (.07)	2.91 [†]
2b. 9 th Grade Relational Aggression	.19 (.12)	.24 (.10)	.09
3a. 7 th Grade Leadership	.34 (.09)	-.16 (.08)	16.00***
3b. 9 th Grade Leadership	.54 (.11)	.00 (.10)	11.97**
4a. 7 th Grade Victimization	-.05 (.10)	.08 (.08)	.95
4b. 9 th Grade Victimization	.10 (.13)	.18 (.11)	.18
5a. 7 th Grade Conduct Problems	1.36 (.26)	2.61 (.22)	11.78**
5b. 9 th Grade Conduct Problems	2.21 (.34)	3.00 (.30)	2.53
6b. 9 th Grade Social Skills	4.16 (.06)	3.77 (.06)	19.55**
Academic Adjustment Measures			
7a. 7 th Grade Course Grades	89.59 (.63)	81.30 (.54)	85.48***
7b. 9 th Grade Course Grades	86.99 (.78)	77.86 (.69)	65.35***
8a. 7 th Grade EOG Test Scores	.73 (.02)	.43 (.02)	150.32***
8b. 9 th Grade EOG Test Scores	.74 (.02)	.46 (.02)	94.37***
9a. 7 th Grade Attendance	5.88 (.87)	6.93 (.77)	.71
9b. 9 th Grade Attendance	6.05 (.72)	7.16 (.63)	1.15
Psychological Adjustment Measures			
10a. 7 th Grade Overall Self-Concept	5.21 (.12)	5.32 (.10)	.48
10b. 9 th Grade Overall Self-Concept	5.45 (.13)	5.57 (.11)	.51
11a. 7 th Grade Academic Self-Concept	6.21 (.09)	5.71 (.08)	16.24***
11b. 9 th Grade Academic Self-Concept	6.15 (.11)	5.68 (.10)	8.53**
12. 9 th Grade Internalizing Problems	1.55 (.06)	1.82 (.05)	10.75**

Note: [†] $p < .10$; ** $p < .01$; *** $p < .0001$

Giftedness as a Moderator for Peer Relations and Adjustment

Overview of Regression Analyses

It should be recalled that the link between peer relations and adjustment was hypothesized to be moderated by giftedness. As such, the next set of analyses examined (1) how 7th-grade measures of peer relations were associated with concurrent (i.e., 7th grade) and later (i.e., 9th grade) measures of behavioral, academic and psychological adjustment and (2) whether the associations were moderated by giftedness. Following from the analysis plan of Gest et al. (2001), a series of hierarchical multiple regression analyses were conducted to assess the relative contributions of 7th-grade sociometric status, friendship quantity and quality, social network centrality, and gifted peer affiliations to the prediction of concurrent and later adjustment outcomes.

In all analyses, giftedness and 7th-grade peer relations measures served as predictors of concurrent and later behavioral, academic and psychological adjustment. To reduce the number of predictors used in each analysis, redundant measures of 7th grade peer relations were excluded. For instance, sociometric status groups and standardized scores of liking and disliking overlap with social preference and social impact scores, with the latter variables used as the only measures of sociometric status in the regression analyses. Additionally, individual clique centrality and group centrality were captured in the measure of centrality in the larger network. As such, a single score of social network centrality in the larger network was used in the analyses, with larger

scores corresponding to a more central position in the network (0=*isolate* to 3=*nuclear*). Together this resulted in 7 continuous measures of 7th-grade peer relations: (1) social preference, (2) social impact, (3) number of reciprocated friendship associations, (4) bonding with best friend, (5) social network centrality, (6) percent of reciprocated friends who were gifted, and (6) percent of clique members who were gifted.

In each regression, SES, gender, and ethnicity were entered in the first step as covariates. Giftedness and the seven measures of peer relations were entered simultaneously in the second step of the regression. In the third and final step, two-way interactions between each of the seven peer relation measures and giftedness were entered. As recommended by Aiken and West (1991), predictor variables that were not already standardized were centered before creating interaction terms. Together this resulted in 10 separate regression analyses, predicting to 5 measures of concurrent behavioral adjustment (i.e., overt aggression, relational aggression, leadership, victimization, conduct problems), 3 measures of concurrent academic adjustment (i.e., course grades, EOG test score, school attendance) and 2 measures of concurrent psychological adjustment (i.e., overall self-concept, academic self-concept).

The regression analyses were repeated to examine the contribution of giftedness and 7th-grade peer relations to the prediction of later (i.e., 9th grade) behavioral, academic and psychological adjustment. As such, the predictors in the regression analyses remained the same and measures of behavioral, academic and psychological adjustment

assessed at 9th grade served as the dependent variables to allow for the prediction to later adjustment. Given that teacher-assessed social skillfulness and internalizing problems were not outcomes assessed in the 7th grade, two additional regression analyses were conducted, resulting in a total of 12 separate regression analyses predicting to later adjustment.

Overview of Regression Findings

As summarized in Table 10, covariates, giftedness, the seven measures of 7th-grade peer relations, and interactions with giftedness collectively accounted for substantial variance in the 10 measures assessing concurrent adjustment (Total R² ranged from .13 to .63) as well as in the 12 measures assessing later adjustment (Total R² ranged from .08 to .59). Given that the previous section examined the main effect of giftedness in terms of adjustment, results in the following sections will only focus on the prediction of adjustment from the seven peer relation measures and the moderation effect of giftedness¹. Table 11 presents the standardized beta coefficients for the seven peer relations measures simultaneously entered in Step 2 in their prediction of concurrent and later behavioral, academic, and psychological adjustment. The following sections discuss these findings as they relate to four different peer domains: (1) sociometric status, (2) friendship, (3) social network centrality, and (4) gifted peer affiliations. Within each peer domain, findings related to the three indices of adjustment

¹ The previously reported main effects of giftedness on overt aggression in 7th and 9th grade, and relational aggression in 7th grade were not replicated in the regression analyses.

will be discussed, highlighting consistent and divergent findings across the two-year span. All individually significant as well as marginally significant coefficients for predictors and interaction terms will be discussed.

Table 10: Summary of Hierarchical Regression Analyses Predicting Concurrent and Later Adjustment from Giftedness, Sociometric Status, Friendship Quantity and Quality, Social Network Centrality and Gifted Peer Affiliations

	Step 1 ΔR^2	Step 2 ΔR^2	Step 3 ΔR^2	R ² Total
Behavioral Adjustment Variables				
1a. 7 th Grade Overt Aggression	.20**	.38***	.08***	.66
1b. 9 th Grade Overt Aggression	.20***	.23***	.06***	.49
2a. 7 th Grade Relational Aggression	.07***	.51***	.03**	.61
2b. 9 th Grade Relational Aggression	.01	.36***	.01	.38
3a. 7 th Grade Leadership	.09***	.51***	.00	.60
3b. 9 th Grade Leadership	.09***	.29***	.02	.40
4a. 7 th Grade Victimization	.05**	.44***	.03**	.52
4b. 9 th Grade Victimization	.03*	.35***	.07***	.45
5a. 7 th Grade Conduct Problems	.09***	.07**	.01	.17
5b. 9 th Grade Conduct Problems	.09***	.09**	.02	.20
6b. 9 th Grade Social Skillfulness	.17***	.16***	.01	.36
Academic Adjustment Variables				
7a. 7 th Grade Course Grades	.39***	.19***	.02†	.60
7b. 9 th Grade Course Grades	.39***	.22***	.00	.61
8a. 7 th Grade EOG Test Scores	.37***	.24***	.02†	.63
8b. 9 th Grade EOG Test Scores	.35***	.24***	.01	.60
9a. 7 th Grade Attendance	.07**	.08	.03	.18
9b. 9 th Grade Attendance	.04**	.03	.02	.09
Psychological Adjustment Variables				
10a. 7 th Grade Overall Self-Concept	.10***	.25***	.00	.35
10b. 9 th Grade Overall Self-Concept	.09***	.17***	.01	.27
11a. 7 th Grade Academic Self-Concept	.04**	.07**	.02	.13
11b. 9 th Grade Academic Self-Concept	.03*	.12***	.02	.17
12. 9 th Grade Internalizing Problems	.03†	.16***	.02	.21

Note: † $p < .10$; ** $p < .01$; *** $p < .0001$

Table 11: Regressions Predicting Concurrent and Later Adjustment from Giftedness, Sociometric Status, Friendship Quantity and Quality, Social Network Centrality and Gifted Peer Affiliations (Standardized Beta Coefficients)

	Preference	Impact	Friends	Bonding	Centrality	Gifted Friends	Gifted Clique
Behavioral Adjustment Variables							
1a. 7 th Grade Overt Aggression	.01(-)	.50***	.10† (-)	.02(-)	.24*	.08(-)	.23**(-)
1b. 9 th Grade Overt Aggression	.05	.43***	.14*(-)	.04 (-)	.14*	.04(-)	.24**(-)
2a. 7 th Grade Relational Aggression	.00	.52***	.07(-)	.04	.37***	.07(-)	.17**(-)
2b. 9 th Grade Relational Aggression	.05	.33***	.04	.06(-)	.36***	.13*	.13(-)
3a. 7 th Grade Leadership	.45***	.41***	.01(-)	.04	.14**	.07	.06
3b. 9 th Grade Leadership	.27***	.24***	.05	.10† (-)	.09	.21**	.03
4a. 7 th Grade Victimization	.54***(-)	.27***	.06(-)	.04	.12*(-)	.08(-)	.07
4b. 9 th Grade Victimization	.54***(-)	.13†	.01(-)	.09	.10(-)	.09(-)	.06
5a. 7 th Grade Conduct Problems	.09(-)	.03	.10	.01	.08	.05(-)	.16†(-)
5b. 9 th Grade Conduct Problems	.07(-)	.12(-)	.28**	.14*(-)	.06	.05	.29**(-)
6b. 9 th Grade Social Skills	.28**	.01	.01	.00	.09 (-)	.16*	.15†
Academic Adjustment Variables							
7a. 7 th Grade Course Grades	.16**	.05(-)	.04(-)	.02	.07(-)	.19***	.06
7b. 9 th Grade Course Grades	.13*	.02(-)	.04(-)	.04	.11*(-)	.27***	.15*
8a. 7 th Grade EOG Test Scores	.02	.01	.06(-)	.01	.04(-)	.21***	.10†
8b. 9 th Grade EOG Test Scores	.07	.01	.09(-)	.03	.04(-)	.22***	.12†
9a. 7 th Grade Attendance	.18	.23*	.24*(-)	.07(-)	.12(-)	.14	.12(-)
9b. 9 th Grade Attendance	.02	.13†	.04(-)	.00	.01	.07(-)	.02(-)
Psychological Adjustment Variables							
10a. 7 th Grade Overall Self-Concept	.15*	.14*	.19**	.14**	.17**	.06(-)	.10(-)
10b. 9 th Grade Overall Self-Concept	.18*	.18*	.01	.02	.20**	.00	.25**(-)
11a. 7 th Grade Academic Self-Concept	.07(-)	.02	.05	.12*	.10(-)	.05	.03
11b. 9 th Grade Academic Self-Concept	.13	.08	.02(-)	.22**	.12(-)	.17*	.02(-)
12b. 9 th Grade Internalizing Problems	.08(-)	.22**(-)	.06(-)	.02(-)	.08(-)	.17* (-)	.08

Note: Analyses controlled for SES, gender, and ethnicity in Step 1 and included all interactions with giftedness; significant interactions are described in text.

† $p < .10$; ** $p < .01$; *** $p < .001$. a. indicates $N=327$; b. indicates $N=247$

Regression Findings: Sociometric Status

Sociometric status in 7th grade was assessed using standardized scores of social preference and social impact. The prediction of concurrent and later behavioral, academic and psychological adjustment from social preference and social impact assessed in 7th grade is first discussed, followed by a discussion of how giftedness moderated these findings.

Sociometric Status as a Predictor of Adjustment

First, in terms of behavioral adjustment, higher social preference in 7th grade was significantly associated with greater leadership in both 7th [$B = .46, SE = .05, t = 9.15, p < .001$] and 9th grade [$B = .30, SE = .08, t = 3.75, p < .01$] and higher social skillfulness in 9th grade [$B = .19, SE = .05, t = 3.74, p < .001$]. Moreover, students with lower social preference were significantly seen by peers more victimized in both 7th [$B = -.57, SE = .06, t = -9.65, p < .001$] and 9th grade [$B = -.67, SE = .09, t = -7.49, p < .001$]. Higher social impact in 7th grade was significantly associated with greater overt aggression, relational aggression and leadership in both 7th [overt aggression: $B = .50, SE = .05, t = 10.43, p < .001$; relational aggression: $B = .51, SE = .05, t = 11.02, p < .001$; leadership: $B = .43, SE = .05, t = 8.67, p < .001$] and 9th grade [overt aggression: $B = .53, SE = .08, t = 6.62, p < .001$; relational aggression: $B = .37, SE = .08, t = 4.77, p < .001$; leadership: $B = .28, SE = .08, t = 3.57, p < .001$]. Higher social impact was associated with greater peer-assessed victimization in 7th grade [victimization: $B = .30, SE = .06, t = 5.10, p < .001$] and marginally so in 9th grade

[victimization: $B = .17$, $SE = .09$, $t = 1.95$, $p = .06$]. Neither social preference nor social impact was associated with concurrent or later conduct problems (see Table 11).

In terms of predicting academic adjustment, higher social preference in 7th grade was associated with higher course grades in 7th [$B = 1.53$, $SE = .49$, $t = 3.12$, $p < .01$] and 9th grade [$B = 1.40$, $SE = .62$, $t = 2.26$, $p < .05$]. Higher social impact was associated with higher rates of absenteeism in 7th [$B = 1.63$, $SE = .68$, $t = 2.38$, $p < .05$] and 9th grade [$B = .99$, $SE = .57$, $t = 1.73$, $p = .09$]. Neither sociometric status variable was associated with EOG test scores at either grade level (see Table 11).

Lastly, regarding psychological adjustment, higher social preference was associated with higher reports of overall self-concept in both 7th [$B = .20$, $SE = .08$, $t = 2.37$, $p < .05$] and 9th grade [$B = .22$, $SE = .10$, $t = 2.22$, $p < .05$]. Similarly, higher social impact was also related to greater overall self-concept in both 7th [$B = .19$, $SE = .08$, $t = 2.27$, $p < .05$] and 9th grade [$B = .23$, $SE = .10$, $t = 2.39$, $p < .05$]. Interestingly, low social impact in 7th grade was associated with greater internalizing problems in 9th grade [$B = -.13$, $SE = .05$, $t = -2.71$, $p < .01$]. The sociometric variables were not found to be related to concurrent or later academic self-concept.

Sociometric Status and Adjustment Moderated by Giftedness

The finding that high social impact was associated with greater overt aggression, was qualified by an interaction with giftedness at both 7th [overt aggression: $B = -.50$, $SE = .09$, $t = -5.49$, $p < .001$] and 9th grade [overt aggression: $B = -.47$, $SE = .16$, $t = -2.91$, $p < .01$].

As seen in Figure 2, it appears that high social impact is only related to greater overt aggression for non-gifted students. A similar interaction between giftedness and social impact emerged for relational aggression at 7th grade [relational aggression: $B = -.34$, $SE = .10$, $t = -3.54$, $p < .001$], suggesting that non-gifted students with high social impact were the most relationally aggressive students in the sample at 7th grade (see Figure 3).

Lastly, the finding that students with low social preference are more victimized was moderated by giftedness in both 7th [victimization: $B = -.38$, $SE = .12$, $t = -3.24$, $p < .01$] and 9th grade [victimization: $B = -.59$, $SE = .18$, $t = -3.32$, $p < .01$], such that gifted students with low social preference acceptance were the most victimized in the sample (see Figure 4).

Giftedness was not found to be a significant moderator on the prediction of concurrent and later academic and psychological adjustment from sociometric variables.

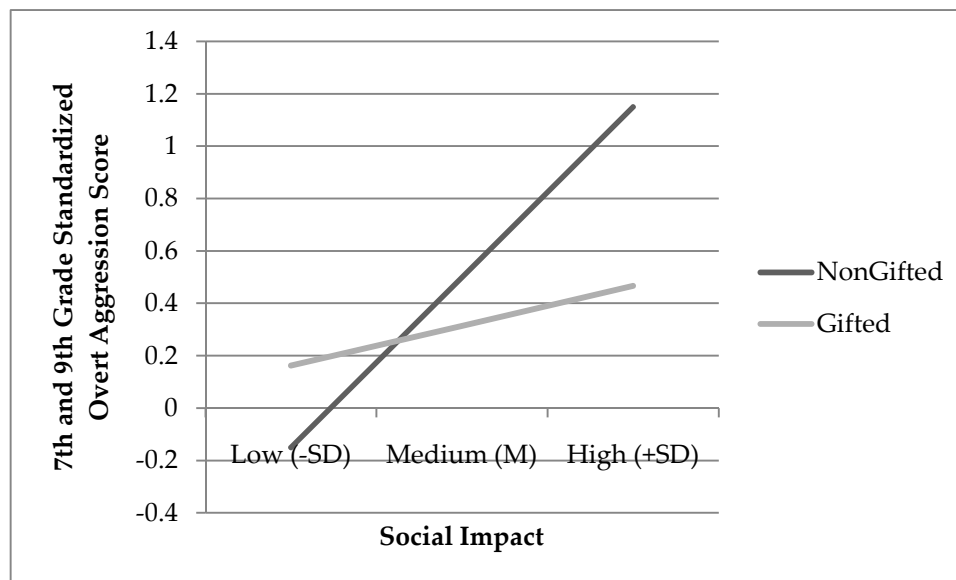


Figure 2: 7th and 9th Grade Overt Aggression as a Function of Giftedness and Social Impact

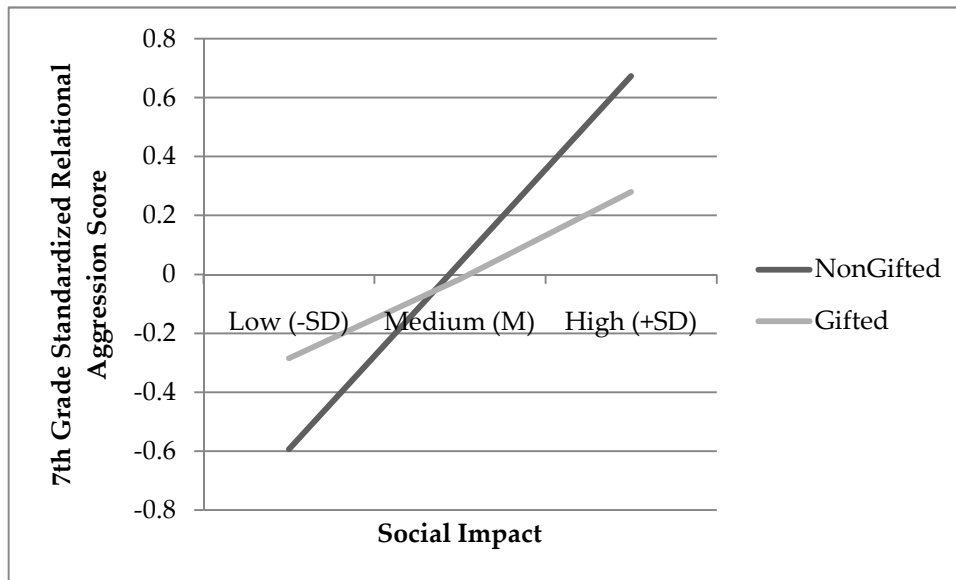


Figure 3: 7th Grade Relational Aggression as a Function of Giftedness and Social Impact

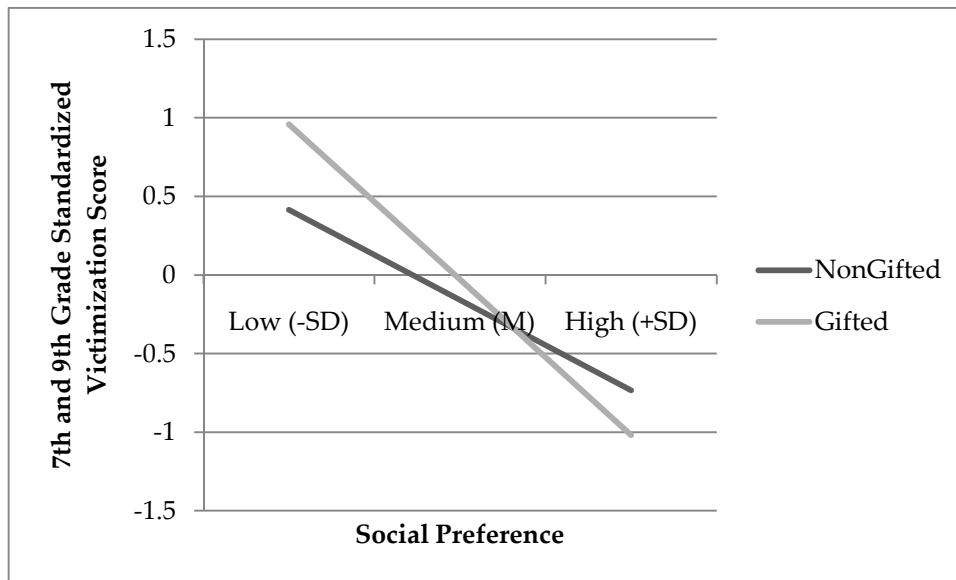


Figure 4: 7th and 9th Grade Victimization as a Function of Giftedness and Social Preference

Regression Findings: Friendship Quantity and Quality

Friendship quantity was assessed using the number of reciprocated friendship associations and friendship quality was assessed by reports of bonding with one's best friend. The prediction of concurrent and later behavioral, academic and psychological adjustment from friendship quantity and quality in 7th grade is first discussed, followed by a discussion of how giftedness moderated these findings.

Friendship Quantity and Quality as Predictors of Adjustment

First, with regard to predictions of behavioral adjustment, having more reciprocated friends in 7th grade was associated with marginally lower scores of overt aggression in both 7th [$B = -.01, SE = .01, t = -1.73, p < .10$] and 9th grade [$B = -.02, SE = .01, t = -1.76, p < .10$]. Interestingly, having more reciprocated friendships in 7th grade was significantly associated with greater reported conduct problems in 9th grade [$B = .14, SE = .05, t = 2.94, p < .01$]. Reporting higher levels of bonding with one's best friend in 7th grade was associated with marginally lower leadership in 9th grade [$B = -.20, SE = .11, t = -1.83, p < .10$] and significantly lower reported conduct problems in 9th grade [$B = -.86, SE = .40, t = -2.16, p < .05$].

In terms of predicting academic adjustment from friendship quantity and quality, having more reciprocated friends was associated with lower absenteeism in 7th [$B = -.28, SE = .14, t = -2.07, p < .05$]. Friendship quantity and quality were not associated with course grades or EOG test scores in 7th or 9th grade (see Table 11).

Lastly, in terms of psychological adjustment, having more reciprocated friends in 7th grade was found to be associated with a higher overall self-concept in 7th grade [$B = .04$, $SE = .01$, $t = 2.83$, $p < .01$], as was reporting greater bonding with one's best friend in 7th grade [$B = .33$, $SE = .12$, $t = 2.70$, $p < .01$]. Additionally, higher bonding with one's best friend in 7th grade was associated with higher academic self-concept in both 7th [$B = .21$, $SE = .11$, $t = 1.98$, $p < .05$] and 9th grade [$B = .44$, $SE = .13$, $t = 3.39$, $p < .01$].

Friendship Quantity and Quality and Adjustment Moderated by Giftedness

Although no significant association between bonding and relational aggression was found, a marginally significant interaction with giftedness emerged in 7th grade [$B = .24$, $SE = .14$, $t = 1.75$, $p < .10$]. As seen in Figure 5, gifted students who reported to have high levels of bonding with their best friends were found to be the most relationally aggressive students in the sample. Giftedness was found to moderate the associations between bonding and 7th grade victimization [$B = -.40$, $SE = .18$, $t = -2.29$, $p < .05$], such that reporting high levels of bonding with one's best friend was related to lower victimization for gifted students only (see Figure 6). Lastly, the finding that greater bonding was related to lower conduct problems in 9th grade was moderated by a marginal interaction with giftedness [$B = 1.57$, $SE = .85$, $t = 1.84$, $p < .10$], such that this pattern was only true for non-gifted students, as gifted students with high friendship quality had the highest level of conduct problems in 9th grade (see Figure 7). Giftedness

was not found to be a significant moderator on the prediction of concurrent or later academic and psychological adjustment by friendship quantity or quality.

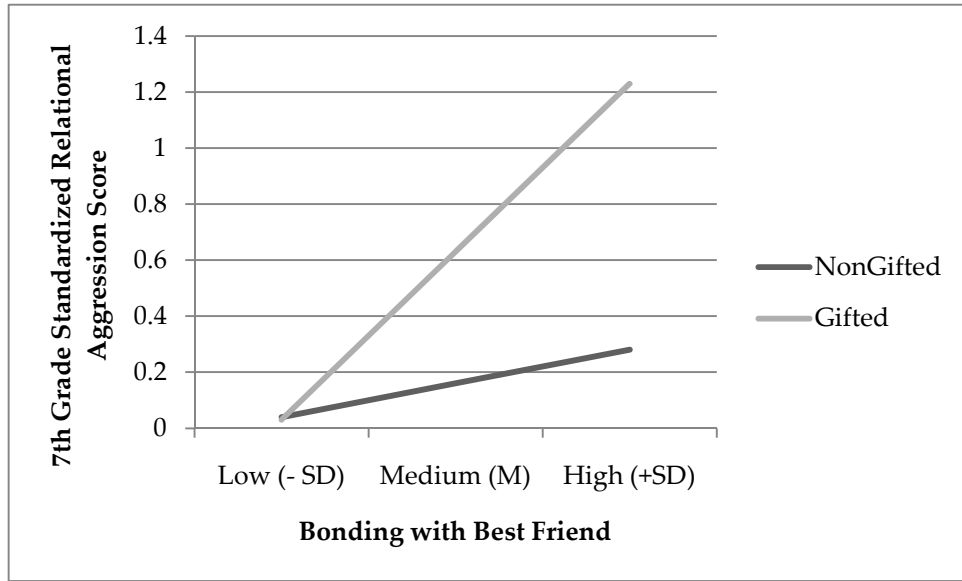


Figure 5: 7th Grade Relational Aggression as a Function of Giftedness and Bonding with Best Friend

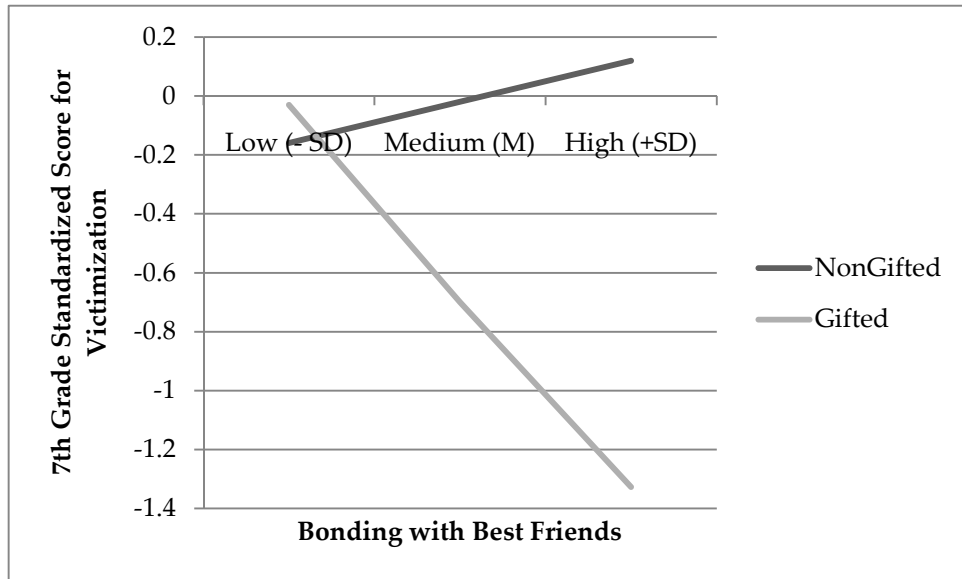


Figure 6: 7th Grade Victimization as a Function of Giftedness and Bonding with Best Friend

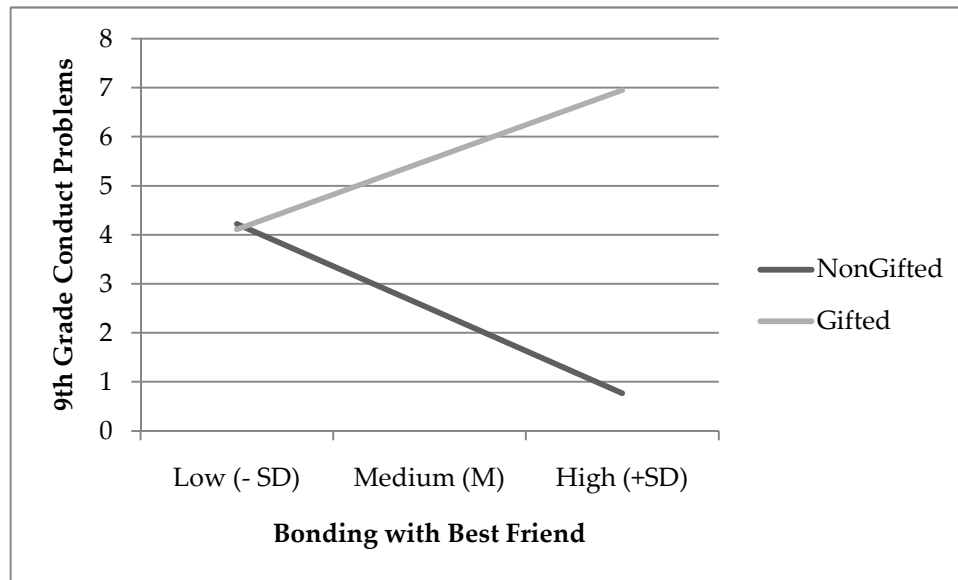


Figure 7: 9th Grade Conduct Problems as a Function of Giftedness and Bonding with Best Friend

Regression Findings: Social Network Centrality

Social network centrality in 7th grade was assessed using one measure, with higher scores represented a more central position in the network. The prediction of concurrent and later behavioral, academic and psychological adjustment from 7th grade social network centrality is first discussed, followed by a discussion of how giftedness moderated these findings.

Social Network Centrality as a Predictor of Adjustment

In terms of behavioral adjustment, having greater centrality in the 7th grade social network was associated with significantly greater overt and relational aggression in both 7th [overt aggression: $B = .31$, $SE = .06$, $t = 5.08$, $p < .001$; relational aggression: $B = .48$, $SE = .06$, $t = 8.05$, $p < .001$] and 9th grade [overt aggression: $B = .22$, $SE = .11$, $t = 2.09$, $p < .05$;

relational aggression: $B = .55$, $SE = .11$, $t = 5.20$, $p < .001$]. Greater 7th-grade centrality was also associated with greater leadership in 7th grade [$B = .19$, $SE = .06$, $t = 2.97$, $p < .01$]. Having lower centrality in the 7th grade social network, was associated with greater victimization in 7th grade [$B = -.17$, $SE = .08$, $t = -2.32$, $p < .05$].

Centrality in the 7th grade social network was not a good predictor of concurrent or later academic adjustment, as it only significantly predicted lower course grades in 9th grade [$B = -1.65$, $SE = .81$, $t = -2.05$, $p < .05$]. In terms of psychological adjustment, having greater network centrality in 7th grade was associated with higher reports of overall self-concept in both 7th [$B = .31$, $SE = .11$, $t = 2.97$, $p < .01$] and 9th grade [$B = .35$, $SE = .13$, $t = 2.67$, $p < .01$]. Giftedness was not found to be a significant moderator on the prediction of concurrent or later psychological adjustment by centrality.

Social Network Centrality and Adjustment Moderated by Giftedness

The association between network centrality in 7th grade and overt aggression was moderated by giftedness in both 7th [$B = -.35$, $SE = .11$, $t = -3.11$, $p < .01$] and 9th grade [$B = -.43$, $SE = .21$, $t = -2.04$, $p < .05$]. Specifically, the finding that high centrality was associated with greater overt aggression seems to be only true for non-gifted students, whereas gifted students were seen as less aggressive regardless of their position in the network (see Figure 8).

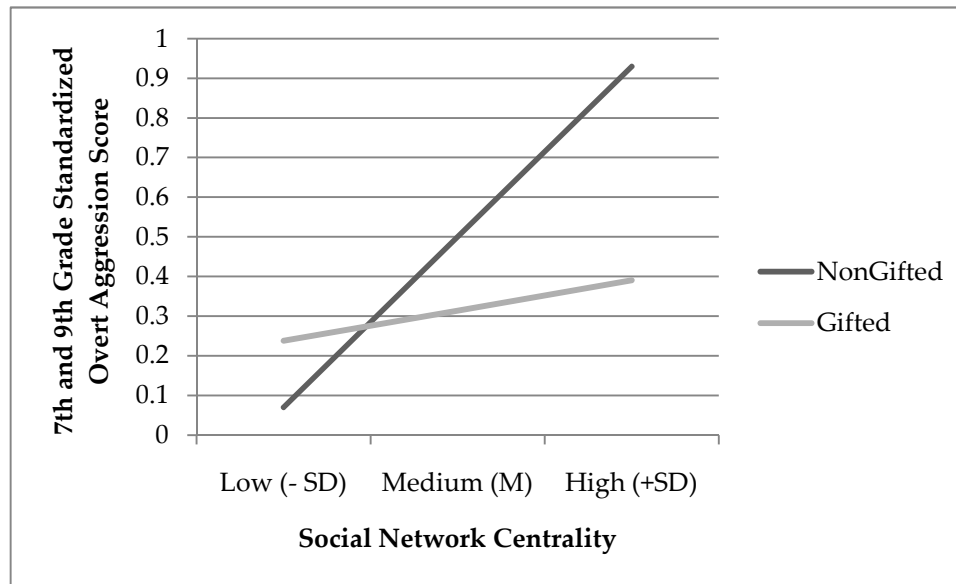


Figure 8: 7th and 9th Grade Overt Aggression as a Function of Giftedness and Social Network Centrality

Regression Findings: Gifted Peer Affiliations

Gifted peer affiliations in 7th grade were assessed with measures of the percent of friends who were gifted and percent of clique members who were gifted. The prediction of concurrent and later behavioral, academic and psychological adjustment from 7th grade gifted peer affiliations was first discussed, followed by a discussion of how giftedness moderated these findings.

Gifted Peer Affiliations as Predictors of Adjustment

With regard to behavioral adjustment, having more gifted friends was not associated with greater relational aggression or leadership, but was related to marginally lower overt aggression in 7th grade [overt aggression: $B = -.27$, $SE = .16$, $t = -1.71$, $p < .10$; relational aggression: $B = -.23$, $SE = .16$, $t = -1.50$, *ns*; leadership: $B = .23$, $SE =$

.16, $t = 1.42$, *ns*). By contrast, having more gifted friends in 7th grade predicted greater relational aggression [$B = .48$, $SE = .24$, $t = 1.99$, $p < .05$] and leadership [$B = .77$, $SE = .24$, $t = 3.20$, $p < .01$] in 9th grade, but not overt aggression [$B = -.15$, $SE = .24$, $t = -.60$, *ns*].

Additionally, having more gifted friends was associated with greater teacher-reported social skillfulness in 9th grade [$B = .36$, $SE = .15$, $t = 2.38$, $p < .05$].

Being in a clique with more gifted members in 7th grade was associated with less overt aggression and conduct problems in both 7th [overt aggression: $B = -.68$, $SE = .18$, $t = -3.90$, $p < .001$; conduct problems: $B = -1.47$, $SE = .75$, $t = -1.95$, $p < .10$] and 9th grade [overt aggression: $B = -.84$, $SE = .27$, $t = -3.14$, $p < .01$; conduct problems: $B = -2.98$, $SE = .95$, $t = -3.13$, $p < .01$]. While having more gifted clique associates in 7th grade was associated with lower relational aggression in 7th grade [$B = -.50$, $SE = .17$, $t = -2.92$, $p < .01$], this was no longer the case in 9th grade [$B = -.41$, $SE = .27$, $t = -1.56$, *ns*]. Lastly, having more gifted clique affiliates was associated with marginally greater levels of social skillfulness as reported by teachers in 9th grade [$B = .29$, $SE = .17$, $t = 1.75$, $p < .10$].

In terms of academic adjustment, having more gifted friends was associated with higher course grades and higher test scores on EOGs in both 7th [course grades: $B = 6.37$, $SE = 1.61$, $t = 3.96$, $p < .001$; EOG: $B = .20$, $SE = .04$, $t = 4.47$, $p < .001$] and 9th grade [course grades: $B = 9.54$, $SE = 1.86$, $t = 5.12$, $p < .001$; EOG: $B = .20$, $SE = .05$, $t = 4.03$, $p < .001$]. Similarly, being in a clique with more gifted members was also associated with higher course grades in 9th grade [$B = 4.64$, $SE = 2.05$, $t = 2.26$, $p < .05$] and marginally

higher EOG test scores in 7th [$B = .09, SE = .05, t = 1.83, p < .10$] and 9th grade [$B = .09, SE = .05, t = 1.76, p < .10$].

Lastly, with regard to psychological adjustment, having more gifted friends was associated with a higher academic self-concept [$B = .64, SE = .28, t = 2.26, p < .05$] and lower levels of internalizing problems [$B = -.32, SE = .15, t = -2.20, p < .05$] in 9th grade. Additionally, having more gifted clique members was related to a lower overall self-concept in 9th grade [$B = -.93, SE = .33, t = -2.83, p < .01$].

Gifted Peer Affiliations and Adjustment Moderated by Giftedness

The finding that having more gifted clique members was associated with lower overt aggression was moderated by giftedness in 9th grade [$B = 1.31, SE = .49, t = 2.66, p < .01$]. As seen in Figure 9, the presence of having many gifted clique members in 7th grade had the greatest effect on non-gifted students, who were the least aggressive in 9th grade.



Figure 9: 9th Grade Overt Aggression as a Function of Giftedness and Gifted Clique Member

Regression Findings: Summary of Findings

High social preference (i.e., sociometric popularity) was associated with a positive adjustment profile, characterized by high levels of leadership and social skillfulness, higher course grades, and a more positive overall self view, for both gifted and non-gifted adolescents. By contrast, low social preference (i.e., sociometric rejection) was associated with negative adjustment, namely, increased association with peer victimization. Notably, the negative effects of being rejected were exaggerated for gifted students, who were the most victimized adolescents in the sample. Interestingly, gifted adolescents with high social preference (i.e., popular) appeared protected from victimization, as they were found to have the very lowest levels of victimization.

High visibility (i.e., social impact) was associated with a mixed profile characterized by both positive and negative adjustment. For example, whereas higher social impact was associated with greater aggression, victimization and absenteeism, it was also associated with greater leadership, and a more positive overall self-concept. Interestingly, this mixed adjustment profile was more pronounced for non-gifted students, whereas the negative associations of being highly visible were somewhat mollified for gifted students.

In general, greater friendship quantity was associated with a more positive adjustment profile, including lower overt aggression, absenteeism and higher overall self-concept. The only exception to this pattern was the finding that having more reciprocated friends was related to greater reported conduct problems. Similarly, friendship quality was generally associated with a more positive adjustment profile, including lower conduct problems, higher overall and academic self-concept. However, the protective function of having high levels of bonding with one's best friend (i.e., friendship quality) differed as a function of whether the adolescent was gifted. On the one hand, having a high quality friendship buffered gifted adolescents from experiencing victimization. Conversely, having a high quality friendship was also marginally related to high levels of relational aggression and conduct problems for gifted adolescents.

Similar to the adjustment profile that emerged for social impact, social network centrality was associated with both negative and positive adjustment outcomes. Although higher centrality was associated with greater aggression (both overt and relational), and lower course grades, higher network centrality was also associated with higher leadership and a more positive overall self-concept. Additionally, lower network centrality (e.g., isolate, peripheral position) was associated with greater victimization. However, the negative behavioral adjustment associated with higher network centrality was somewhat attenuated for gifted adolescents, particularly in terms of overt aggression. Interestingly, giftedness did not moderate the associations between centrality and relational aggression, suggesting that although nuclear gifted adolescents were not overtly aggressive, they shared higher levels of relational aggression relative to their highly central non-gifted peers.

Lastly, having more gifted peer affiliations was generally associated with a more positive adjustment profile as it was associated, for both gifted and non-gifted students, with higher leadership and social skillfulness, higher course grades, higher EOG test scores, higher academic self-concept, and lower internalizing problems. Interestingly, the only finding that runs counter to this pattern revealed that having more gifted friends in 7th grade was associated with greater relational aggression two years later. In addition, similar to having a higher number of gifted friends, being a member of a clique with more gifted peers was associated with a generally positive adjustment profile

characterized by lower aggression, conduct problems, higher course grades, slightly higher EOG test scores, for both gifted and non-gifted adolescents. However, having more gifted clique members was also related to a less positive self-concept. Of note, the benefit of having more gifted clique members seems to be exaggerated for non-gifted adolescents, who, in the presence of more gifted clique members, had significantly lower levels of overt aggression.

Post-Hoc Analyses: Profile of Gifted Adolescents with Peer Problems

The finding in which gifted adolescents who were rejected by their peers were viewed by peers as the most victimized students in both 7th and 9th grade supports the prediction that there is indeed a subgroup of gifted adolescents who have problematic peer situations, despite the positive picture of social functioning demonstrated by gifted adolescents in general. Given that both rejection and victimization are robust indicators of risk, it was important to further explore this subgroup of gifted adolescents with significant peer problems to elucidate characteristics that possibly differentiate them from gifted adolescents without peer problems. To facilitate this profile analysis, two extreme groups of gifted adolescents were identified, stratified by their sociometric status (as determined by the Coie et al., 1982 classification system) and level of peer-assessed victimization. Of the 15 gifted adolescents who were classified as rejected, 12 were found to have extremely high levels of victimization in 7th and/or 9th grade (standard score > 1). At the other extreme were the 22 gifted adolescents who were

classified as popular, all of whom had low levels of victimization (standard score < 0).

The following section examines additional components of the social world of these two subgroups of gifted adolescents to explore the pervasiveness of their respective difficulty and success with peers.

The Social World of Popular and Rejected Gifted Adolescents

To better understand the social profile among these two groups of gifted students, the percentages of liked most and liked least nominations they received from other gifted students were examined. The gifted rejected-victims and the gifted popular did not differ in the percent of like most nominations they received from other gifted students (46% v. 46%)[$t(1,32)=.04$, *ns*]. By contrast, the gifted rejected-victims were more disliked by a greater percentage of gifted students, as 58% of their liked least nominations came from other gifted peers, which was significantly higher than the 24% found for the comparison group of gifted popular students [$t(1,32)= -5.64$, $p<.001$].

For the gifted rejected-victim subgroup, problems with peers also appeared to extend to other peer domains. The gifted rejected-victims had, on average, less than 4 reciprocated friendships, well-below the mean of 10 reciprocated friendships reported earlier for the overall gifted sample, and significantly less than the 18 friendships averaged by the popular gifted subgroup [$t(1,32)= 6.41$, $p<.001$]. Additionally, one of the 12 gifted rejected-victims was without a single reciprocated friendship. Despite differences in friendship quantity, reported friendship quality did not differ between

these two gifted subgroups [$t(1,32) = -.61, ns$], as both the gifted rejected-victims and gifted popular adolescents reported comparable levels of bonding with their best friends ($M=3.5$ v. $M=3.4$).

In comparison to their popular gifted peers (and congruent with their rejected status) gifted rejected-victims were more likely to be classified as isolates (25% v. 0%) as well as peripheral members (75% v. 18%) of the social network, and less likely to maintain a secondary (0% v. 59%) or nuclear (0% v. 25%) position in the network [$\chi^2=21.87, p<.001$]. Despite having relatively fewer friends and experiencing higher network isolation, the gifted rejected-victims had a similar proportion of gifted peers as friends [$t(1,32) = .65, ns$] and clique affiliates [$t(29) = .01, ns$] as did their gifted popular counterparts (approximately 60% for both subgroups).

Taken together, the evidence is clear that these two subgroups illustrate two ends of the spectrum in terms of peer success, which raises the question of what contributes to such drastically different peer experiences among gifted adolescents. While the design of the current study limits the ability to examine causality, the next section examines a broad array of characteristics in an effort to create descriptive profiles associated with having success or difficulty in the social world of gifted adolescents.

The Profile of Gifted Rejected-Victims

Analytic Overview

A series of independent-sample t-tests was conducted to compare the two extreme subgroups of gifted adolescents (rejected-victims v. popular) on a variety of characteristics, including demographic, behavioral, academic and psychological characteristics. Using the same method of categorizing gifted students into the subgroups described earlier, non-gifted rejected-victims (N=11) and non-gifted popular (N=19) adolescents were also identified. A separate set of t-tests was conducted to compare the two non-gifted subgroups on the same array of characteristics to highlight stable differences that emerged between rejected and popular status groups, regardless of giftedness. Table 12 provides a summary of the t-test results. Note that Table 12 also includes summary data for the entire gifted and non-gifted sample to provide a larger context for understanding the pattern of findings, although these were not included in analyses. To better capture subtle variability across subgroups, differences in the individual items/subscales making up composite measures were also explored (see Table 13) to allow for a finer grained approach to the profile analysis. Additionally, to maximize the power and increase detection of significant differences, with the exception of measures of social skillfulness and internalizing problems, only measures assessed in 7th grade were analyzed. Because of small sample size, marginal results will be presented and discussed as well.

Profile Analysis Findings

In terms of demographic characteristics, compared to the overall gifted sample, the gifted rejected-victims tended to be male and European American in ethnicity, whereas the gifted popular students tended to be from a variety of ethnic backgrounds (see Table 12). Consistent with regression findings regarding social preference, both gifted and non-gifted rejected-victims were seen as less prosocial than popular adolescents in terms of leadership [Gifted: $t(1,32)= 8.78, p<.001$; Non-gifted: $t(1,28)= 6.70, p<.001$] and social skillfulness [Gifted $t(1,21)= 2.89, p<.01$; Non-gifted: $t(1,19)= 1.85, p<.10$] as viewed by both peers and teachers, respectively. When the specific subscales of teacher-reported social skillfulness were examined for the gifted subgroups, the gifted rejected-victims were viewed by teachers as less empathic [$t(1,21)= 2.37, p<.05$], less assertive [$t(1,21)= 2.52, p<.05$], less cooperative [$t(1,21)= 2.24, p<.05$], having more difficulty joining peer interactions [$t(1,21)= 3.50, p<.01$], less capable of resolving conflicts with peers [$t(1,21)= 2.62, p<.05$] but were not seen as more disruptive [$t(1,21)= -.84, ns$] than the popular gifted group. The differences in terms for empathy [$t(1,19)= 1.81, p<.10$] and difficulty joining groups [$t(1,19)= 1.74, p<.10$] extended to non-gifted rejected-victims as well, who, unlike gifted rejected-victims were also more disruptive than their popular non-gifted counterparts [$t(1,19)= -3.61, p<.01$].

Although the combined EOG test scores of gifted rejected-victims did not differ significantly in comparison to the gifted popular group [$t(1,32)= -1.55, ns$], when their

performance on each EOG test was examined separately, a significant difference did emerge on the EOG reading test [$t(1,32) = -2.04, p < .05$] but not the math test [$t(1,32) = -1.30, ns$]. The gifted rejected-victim group was found to score, on average, 14 percentile points higher than the popular gifted group. In fact, 36% ($N=4$) of the gifted rejected-victims were found to score at or above the 95th percentile on their EOG reading test, whereas only 1 of the 22 (5%) gifted popular adolescents scored at this high level [$\chi^2(1) = 5.78, p < .05$]. No differences in EOG test scores were found between the non-gifted subgroups [$t(1,28) = -.70, ns$]. With regard to academic performance, as measured by course grades, differences between the subgroups were not found for either gifted [$t(1,32) = 1.09, ns$] or non-gifted students [$t(1,28) = .39, ns$]. Although there were no significant differences, it is noteworthy that gifted rejected-victims consistently had lower course grades, on average, in all subjects when compared to the grades of the overall gifted sample (see Table 13).

In terms of psychological characteristics, both gifted and non-gifted rejected-victims reported a lower overall self-concept than their popular counterparts [Gifted: $t(1, 32) = 4.17, p < .001$; Non-Gifted: $t(1,28) = 3.86, p < .01$], a finding in keeping with the earlier regression result regarding lower social preference and a more negative overall self-concept. When the specific items making up the self-concept composite were examined, both gifted and non-gifted rejected-victims viewed themselves lower than popular adolescents in terms of whether they thought they were “cool” [Gifted: $t(1,32) = 4.71,$

$p < .001$; Non-Gifted: $t(1,28) = 5.05, p < .001$], “attractive” [Gifted: $t(1,31) = 3.33, p < .01$; Non-Gifted: $t(1,28) = 3.37, p < .01$], “good at hanging out with lots of kids” [Gifted: $t(1,32) = 2.96, p < .01$; Non-Gifted: $t(1,28) = 2.08, p < .05$], and had an “easy time getting a boyfriend/girlfriend” [Gifted: $t(1,31) = 3.62, p < .01$; Non-Gifted: $t(1,28) = 3.54, p < .01$]. Lastly, differences were not found between the rejected-victim and their popular counterparts regarding the internalizing problems composite score for either gifted [$t(1,21) = -1.26, ns$] or non-gifted [$t(1,19) = -.85, ns$] adolescents. However, a closer examination of subscales revealed that gifted rejected-victims were seen by teachers as more socially avoidant than were gifted popular adolescents [$t(1,21) = -2.52, p < .05$]. This difference in social avoidance did not extend to the non-gifted comparison [$t(1,21) = .39, ns$].

Profile Summary

Given the descriptive nature of this profile analysis, it is premature to make any concluding statements about the two groups of gifted adolescents, one experiencing difficulty and the other success in their social world. With that said, several general observations can be noted. First, the gifted students who were rejected and victimized evidenced a bleak social profile as not only were they actively disliked (particularly by other gifted students) and harassed by their peers, but were isolated or on the periphery of the social network and had very few friends. In terms of identifying characteristics, they tended to be European American males who were extremely gifted, possibly in

verbal abilities, given their relatively high scores on standardized test measures. However, their academic performance was not consistent with their high test scores, although they did not significant differ from the popular gifted students. Otherwise, they generally appeared to mirror the behavioral profile of non-gifted rejected-victims rather than the positive profile characteristic of the overall gifted sample; they were not seen by peers and teachers as leaders relative to their more popular peers; they were viewed as less aggressive than other peers; they were seen by teachers as less cooperative, as having difficulty solving conflicts with peers, and more socially avoidant when compared to more popular gifted adolescents; finally, like non-gifted rejected-victims, they reported more negative views of themselves on several dimensions.

Table 12: Profile of Gifted and Non-Gifted Subgroups

Characteristics	Gifted Subgroups			Non Gifted Subgroups		
	Rejected-Victim (N =12)	Popular (N=22)	Total (N =141)	Rejected-Victim (N=11)	Popular (N =19)	Total (N =186)
Demographics (Gender/Ethnicity)	% (N)	% (N)	% (N)	% (N)	% (N)	% (N)
Male	50% (6)	32% (7)	38% (53)	46% (5)	63% (12)	50% (92)
European American	75% (9)	50%(11)	67% (94)	36% (4)	5% (1)	19% (36)
African American	17% (2)	32% (7)	23% (32)	64% (7)	79% (15)	63% (117)
Hispanic/Multiethnic/Asian	8% (1)	19% (4)	10% (15)	0% (0)	15% (3)	16% (33)
Negative/Prosocial Behaviors	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Overt Aggression	-.51 (.19)	-.15 (.65)	-.42 (.44)	.26 (.63)	.39 (.88)	.25 (1.1)
Relational Aggression	-.51 (.32)	.19 (.89)	-.24 (.71)	.16 (.54)	.45 (.89)	.14 (1.1)
Conduct Problems	.75 (1.5)	1.45 (2.0)	1.14 (1.63)	2.73 (3.1)	2.74 (3.6)	2.76 (3.5)
Leadership	-.78 (.40)	1.58 (1.1)	.41 (1.1)	-.79 (.36)	.72 (.85)	-.21 (.88)
Social Skillfulness ^a	3.65 (.77)	4.36 (.42)	4.24 (.48)	3.26 (1.0)	4.00 (.61)	3.70 (.68)
Cognitive Ability/ Academic Performance						
EOG %tile	.79 (.17)	.70 (.17)	.78 (.18)	.39 (.21)	.34 (.20)	.39 (.21)
Course Grades	88.07 (5.5)	90.17 (5.3)	91.84 (6.2)	79.67 (7.8)	80.89 (8.5)	79.60 (8.5)
Absenteeism	3.99 (3.7)	6.64 (6.8)	5.10 (5.8)	3.60 (4.2)	6.44 (6.5)	7.56 (7.4)
Psychological Characteristics						
Overall Self-Concept	3.67 (1.6)	5.71 (1.2)	4.98 (1.3)	4.49 (1.3)	6.17 (.83)	5.49 (1.3)
Academic Self-Concept	6.50 (.80)	6.05 (.90)	6.25 (.73)	5.81 (.87)	5.37 (1.1)	5.67 (1.1)
Depression/Anxiety ^a	1.59 (.56)	1.33(.33)	1.54 (.50)	1.84 (.53)	1.66 (.43)	1.83 (.58)

Note: **Bold** lettering indicates column mean difference were significant at least at the $p < .10$ level; ^a indicates data collected in 9th grade

Table 13: Profile of Gifted and Non-Gifted Subgroups (Subscales)

Items/Subscales	Gifted Subgroups			Non Gifted Subgroups		
	Rejected-Victim (N =12)	Popular (N =22)	Total (N=141)	Rejected-Victim (N=11)	Popular (N=19)	Total (N =186)
Social Skillfulness^a	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Empathy	3.33 (.97)	4.17 (.53)	4.02 (.64)	3.29 (.99)	3.97 (.62)	3.53 (.78)
Leader/Assertiveness	3.39 (.89)	4.14 (.55)	3.93 (.72)	2.91 (1.0)	3.39 (.81)	3.03 (.89)
Cooperation	3.78 (.89)	4.37 (.44)	4.23 (.54)	2.91 (1.0)	3.39 (.81)	3.70 (.77)
Non-Intrusive Joining	3.31 (.72)	4.17 (.46)	3.97 (.59)	3.61 (.94)	3.82 (.80)	3.46 (.69)
Conflict Resolution	3.97 (.96)	4.84 (.30)	4.60 (.59)	3.11 (.98)	3.73 (.66)	4.14 (.95)
Disruptive	1.91 (1.0)	1.54 (1.0)	1.30 (.59)	2.64 (1.2)	1.33 (.37)	1.65 (.78)
Course Grades						
Language Arts	89.09 (7.3)	91.18 (.5.0)	92.18 (6.4)	82.00 (8.5)	81.89 (9.4)	80.46 (8.6)
Math	87.18 (4.6)	87.59 (6.6)	90.40 (6.2)	78.90 (7.8)	80.47 (7.4)	79.17 (8.3)
Science	87.09 (6.8)	89.77 (7.1)	91.76 (7.6)	78.50 (9.5)	79.79 (9.6)	78.72 (9.8)
Social Studies	90.18 (5.0)	92.14 (4.9)	93.21 (6.4)	81.20 (10.5)	81.42 (11.0)	80.90 (10.0)
EOG Test Scores						
Reading	.83 (.15)	.69 (.20)	.77 (.20)	.40 (.28)	.37 (.24)	.42 (.26)
Math	.80 (.19)	.71 (.19)	.80 (.18)	.39 (.20)	.32 (.20)	.36 (.22)
Absenteeism						
Unexcused Absences	.50 (.55)	1.36 (1.7)	1.14 (1.5)	1.00 (1.0)	1.0 (.82)	1.60 (1.9)
Tardiness	4.00 (3.5)	5.29 (6.1)	4.06 (5.4)	2.60 (3.6)	3.00 (3.6)	5.87 (7.5)
Overall Self-Concept						
Cool	3.33 (1.9)	6.11 (.95)	5.06 (1.6)	3.91 (1.6)	6.47 (.77)	5.66 (1.4)
Hanging out	3.42 (2.4)	5.77 (2.0)	5.50 (1.9)	5.36 (1.4)	6.37 (1.1)	5.93 (1.6)
Stand up for oneself	5.83 (1.8)	6.18 (1.1)	5.79 (1.3)	5.64 (1.6)	5.68 (1.6)	5.90 (1.4)
Attractive	3.67 (1.8)	5.67 (1.6)	4.83 (1.7)	4.09 (1.8)	6.11 (1.2)	5.63 (1.5)
Boy/girlfriend	2.27 (2.2)	5.07 (2.0)	3.96 (2.1)	3.45 (2.3)	6.21 (1.5)	4.90 (2.0)
Internalizing Problems^a						
Depression	1.18 (.25)	1.14 (.38)	1.17 (.31)	1.49 (.64)	1.25 (.39)	1.41 (.53)
Social Avoidance	2.16 (1.0)	1.37 (.45)	1.86 (.89)	1.89 (.91)	1.82 (.92)	2.05 (.93)
Fear of Negative Evaluation	1.44 (.58)	1.48 (.66)	1.59 (.70)	2.14 (.71)	1.92 (.79)	2.03 (.91)

Note: **Bold** lettering indicates column mean difference were significant at least at the $p < .10$ level; ^a indicates data collected in 9th grade

Discussion

The following section presents a review and discussion of the findings from the current study that will further inform the conceptualization of the social functioning of gifted youth. Findings concerning the two primary study aims will be reviewed in turn, with a particular focus on how such findings may influence emerging theories regarding the complexity of the social world of gifted youth. This paper will conclude with a discussion of the limitations of the present study; recommendations for future research are mentioned throughout.

Peer Relations and Adjustment of Academically Gifted Youth

A major aim of the current study was to compare gifted and non-gifted adolescents in terms of their peer relations as well as their behavioral, academic and psychological adjustment. Consistent with predictions gifted adolescents demonstrated more positive peer relations and adjustment compared to non-gifted adolescents. They had higher social preference scores and were more often classified as popular than were non-gifted adolescents, findings which are consistent with prior work examining the sociometric status of gifted children (Cohen et al., 1994; Luftig & Nichols, 1990; Schneider, 1986). Additionally, and consistent with findings from the limited body of work examining the social network centrality of gifted youth (Estell et al., 2009; Farmer & Farmer, 1996; Farmer & Hollowell, 1994; Pearl et al., 1998), gifted adolescents in the current study were found to have higher centrality in their individual cliques than their

non-gifted peers. Concordant with theories of selection and homophily, gifted adolescents were more likely to have friendships and belong to cliques with gifted peers than non-gifted adolescents, replicating findings from previous work examining friendship selection (Cohen et al., 1994; Mann, 1957; Miller, 1956) and clique affiliation (Estell et al., 2009; Farmer & Farmer, 1996) of gifted youth.

Given that gifted youth in the current study were more popular and had higher clique centrality than their non-gifted peers, it is not surprising that their behavioral profile was extremely positive. It was void of aversive behaviors (i.e., aggression or antisocial behavior), and instead characterized by high levels of prosocial behaviors (i.e., leadership) that likely fostered acceptance from peers and helped garner their central clique positions. These findings support a growing body of work portraying gifted youth as more prosocial (Estell et al., 2009; Farmer & Hollowell, 1994; Pearl et al., 1998; Schneider et al., 1989; Udvari & Rubin, 1996) and less aggressive/antisocial (Cohen et al., 1994; Farmer & Hollowell, 1994; Pearl et al., 1998; Schneider et al., 1989; Udvari & Rubin, 1996) relative to their non-gifted classmates. Moreover, the present study found that gifted youth were viewed by teachers as more socially skilled than their non-gifted peers, not surprising that given advanced problem-solving, perspective taking and conflict-resolution skills aid in developing positive relationships and decreased engagement in aggressive behavior. As to be expected, academically gifted youth in the present study were found to have superior academic functioning relative to their non-

gifted peers, characterized by significantly higher course grades and scores on standardized tests. Consistent with their overall positive behavioral and academic profile, gifted youth in the current study exhibited better psychological health than non-gifted youth, in that they reported higher academic/intellectual self-concept and teachers rated them as evidencing fewer internalizing problems than their non-gifted peers.

Not surprisingly, given the overwhelming positive profile associated with academic giftedness, having more gifted friends and belonging to a clique with more gifted peers was associated, for all adolescents, with less negative behavioral adjustment and more positive academic and psychological functioning. Thus, giftedness appears to not only have a protective function at the individual level, but also at both the dyadic and group level. In fact, one finding from the current study suggests that non-gifted students, in particular, may benefit from hanging out with more gifted peers as those students were seen by peers as significantly less aggressive than non-gifted students who were in cliques with mostly other non-gifted students.

The strong overlap between findings from the current study and those from previous research indicates that the commonly held portrayal of gifted youth as well adjusted, if not better adjusted, than their non-gifted peers (see Robinson, 2008) is certainly warranted. However, in addition to confirming this image, results from this current study expand the breadth and depth of the current understanding of the social world of gifted adolescents in important and novel ways.

Simultaneous View of the Social World

A novel aspect of the current study is the simultaneous examination of the distinct domains of peer relations among gifted youth. To date, most research examining the peer relationships of gifted youth has primarily focused on peer group acceptance and rejection, leaving the present day portrait of their social functioning vastly incomplete with regard to measures of social visibility and dominance among peers (i.e., social impact and social network centrality) as well as friendship characteristics. By providing a simultaneous view of the social world of gifted youth, the current study examined the extent to which functioning in one peer domain was related to similar functioning in another peer domain. Several findings from the current study provide evidence that the social competence of gifted youth was not consistent across all peer domains.

Popularity versus Friendship

Despite being more popular and demonstrating superior social skillfulness, gifted adolescents in the current study did not differ from their non-gifted peers with regard to how many friendships they had or their reported level of bonding with their best friend. These results are in keeping with previous work demonstrating that gifted children did not have more reciprocated friendships than their non-gifted classmates despite having greater popularity (Cohen et al., 1994). The limited body of work on friendships of gifted youth cautions one from concluding too much, yet the fact that

their high status among peers does not appear to translate to having more friends or higher quality close friendships is puzzling. One possible explanation is that gifted youth may have greater difficulty finding friends within the peer group who share their unique abilities and interests (Roedell, 1984) or meet their mature expectations of friendship (Gross, 2001). Having a greater limitation on the pool of peers from which gifted youth select their friends may result in fewer friendships and/or less satisfying friendships than one would expect given their overall popularity among peers. In fact, findings from the current study present preliminary evidence that gifted students were more selective in their friendship choices than non-gifted students. Interestingly, these findings were found even in a school environment with a relatively large number of gifted students, suggesting that the mere presence of more gifted peers does not necessarily improve functioning for gifted students within this peer domain to match their success in terms of acceptance among their peers.

Potential differences in functioning across these two domains have implications for adjustment, since they demonstrated differential associations to adjustment in the current study. Consistent with unique attributes associated with popularity and rejection identified in the broader peer relations field (Newcomb et al., 1993), the current study found social preference to be an especially strong predictor of behavioral, academic and psychological functioning. On the other hand, friendship quantity and quality emerged as relatively weak predictors of behavioral and academic adjustment,

but were relevant in predicting positive psychological adjustment. This latter finding supports Sullivan's (1953) contention that successful friendship experiences uniquely contribute to one's well-being by fostering feelings of competence and self-worth. In addition to associations with higher self-esteem and lower reported loneliness (Newcomb & Bagwell, 1995), having friends also has been associated with a reduction in victimization (Hodges et al., 1997). Findings from the current study emphasize that the protective nature of having a close, high quality friendship is especially important to the adjustment of gifted adolescents, as gifted adolescents who reported a high level of bonding with their best were the group most protected against peer victimization in the sample.

Social Impact versus Network Centrality

By utilizing a comprehensive view of the social world of gifted youth, it was also discovered that although gifted youth demonstrated greater centrality within their clique, they did not differ from their non-gifted peers with regard to their visibility in the peer group (i.e., social impact). The only other studies to have examined social impact of gifted students in terms of neglected status also demonstrated no difference on this dimension between gifted and non-gifted youth (Cohen et al., 1994; Luftig & Nichols, 1990). This raises an interesting question concerning how gifted youth achieve higher levels of centrality in their own cliques, but are not necessarily more visible or prominent within the peer group at large than were non-gifted youth.

The behavioral profile traditionally associated with high social impact (i.e., controversial status) is a blend of antisocial and prosocial tendencies that simultaneously garners liking and disliking by many peers (Newcomb et al., 1993). By contrast, Farmer and Rodkin (1996) posit that high network centrality can be achieved through any behaviors that have salient consequences for their peers, whether those behaviors are prosocial or antisocial in nature. Given the extremely positive behavioral profile exhibited by gifted adolescents, one can speculate that their saliency in the network is a function of their prosocial behavioral tendencies, rather than antisocial, which is not a behavioral profile that typically coincides with the polarizing peer reputation of having high social impact. Additionally, academic and intellectual prowess may be a salient and determining characteristic of centrality that is unique to cliques of gifted youth, recalling they belonged to cliques with a majority of gifted peers as clique members, but might not generalize to achieving saliency and prominence in the larger peer group.

It appears gifted youth achieved social dominance by maximizing positive behavior (e.g., leadership, social skillfulness) and minimizing negative behavior (e.g., overt aggression). In fact, findings from the current study revealed that the negative behavioral adjustment associated with both high social impact and network centrality was attenuated for gifted students. The notion that aggression becomes a more attractive trait in early adolescence than during earlier developmental time points (Bukowski et al., 2000; Moffitt, 1993) was not found for gifted students with high social prominence

and dominance (i.e., social impact, network centrality), as they were not seen by peers as being as overtly aggressive as their highly visible and central non-gifted peers.

Broad Array of Adjustment Measures

An additional aspect of the current study not included in previous work is its inclusion of a broad array of adjustment measures, which allowed for a comprehensive examination of the adjustment profile of gifted adolescents across various domains of functioning.

Self-Concept of Gifted Adolescents

By including two measures of self-concept, it was discovered that gifted adolescents' positive view of themselves was restricted to only perceptions of academic/intellectual competence and did not generalize to a more global view of their competence. This pattern is consistent with other studies which found that perceived academic competence is the only domain that gifted youth consistently rate themselves more positively than non gifted youth (see Neihart, 1999, for review).

Of note, the self-concept composite measure used in the present study was developed from a self-reported competence measure that weighed heavily on items that could be used to assess popularity (e.g., attractiveness, cool). Therefore, more positive overall self-concept scores could reflect greater perceived social acceptance or competence rather than a more general feeling of self-worth. Even still, the lack of differentiation between gifted and non-gifted youth on a measure of perceived social

competence is surprising and incongruent with findings revealing gifted youth to be more popular than non-gifted peers. This internal and external dissonance may suggest that gifted youth hold more negative internal representations of their social standing than the perceptions held by their peers. It is also possible that gifted youth judge themselves more harshly than other, a finding that may have implications for their psychological adjustment.

Belonging to a clique with a high percentage of gifted clique members also was associated with a more negative overall self-concept for both gifted and non-gifted students. In the same way cliques have been found to be stratified in terms of shared behavioral tendencies like aggression (Cairns & Cairns, 1994), it is possible that if one associates with peers who think more poorly of themselves, overtime individual adolescents adopt this self view as well.

Negative Behaviors of Gifted Adolescents

The inclusion of a broad array of adjustment outcomes also facilitated the examination of negative behaviors among gifted youth, an area of adjustment previously often overlooked in previous research. Although gifted youth tend to demonstrate low levels of negative behavior in the 7th grade, by the 9th grade they were seen by peers to be just as relationally aggressive and reported similar levels of conduct problems as their non-gifted peers, indicating increases in these behaviors for gifted students across time. Moreover, results from the present study also revealed that,

accordingly to peers, when gifted students engage in aggressive acts, it was much more likely to be relational in form. Additionally, having more gifted friends was associated with greater peer-assessed relational aggression in the 9th grade, indicating that the association between giftedness and relational aggression was present at both an individual and dyadic level.

Together, the findings concerning relational aggression and, to a lesser extent, conduct problems indicate an emerging area of behavioral problems for gifted youth that has previously gone unresearched. This oversight is to be expected as gifted adolescents have historically been thought to possess protective factors including high intelligence, strong problem-solving abilities, good insight and perspective taking that would likely inhibit initiation of or engagement in delinquent behavior (see Neihart, 2002). Yet, given higher social intelligence in early adolescence was found to be associated with greater indirect relational aggression (Kaukiainen et al., 1999), gifted youth may be particularly effective perpetrators of this type of aggression, especially those with advanced interpersonal skills.

Given this is the first study to specifically examine relational aggression and conduct problems among academically gifted youth, these interpretations are speculative at best and, rather, are shared to highlight interesting areas of inquiry requiring future research. Additional research is needed to better understand the prevalence of these negative behaviors as well as the associated risk, even at low

frequencies, among gifted adolescents. Additionally, the impact of gender on the findings related to relational aggression and conduct problems needs to be further explored. This may be especially important for the relational aggression findings, considering the broader peer relations literature has conceptualized relational aggression to be a predominantly female phenomenon (Crick & Grotpeter, 1995; Underwood, 2003).

Developmental Context

With a few notable exceptions (Cornell, 1990; Norman et al., 2000), conclusions drawn about the social functioning of gifted youth is largely based on samples of children and little is known about the social world of gifted adolescents. The current study is the first to report that the favorable sociometric status and clique centrality characteristic of gifted children can also be generalized to gifted adolescents when compared to a non-gifted comparison group. Similar to previously reviewed studies examining the behavior of gifted children, gifted adolescents in the current study also were found to exhibit an extremely positive behavioral as well as academic and psychological adjustment profile in conjunction with their positive social functioning.

The unique longitudinal design of the current study also allowed for the first examination of the stability of the adjustment profile of gifted adolescents. Whereas the positive adjustment profile of gifted youth was generally stable across time, previously reviewed findings regarding relational aggression and conduct problems demonstrate

that gifted students increased in these negative behaviors over time. Interestingly, gifted adolescents with successful peer relations (i.e., high friendship quality and social network centrality) appeared to be a subgroup of gifted adolescents who evidenced high levels of relational aggression and conduct problems in the 9th grade. Particularly with respect to relational aggression, these findings are consistent with research from the broader peer relations literature which has found that relational aggression is associated with more central social network positions (Xie, Swift, Cairns, & Cairns, 2002). Although highly speculative, findings from the current study highlight the possibility that success with peers may come to gifted youth, possibly later on in adolescence, who minimize or disguise their giftedness by adopting patterns of behaviors seen as attractive, but not always prosocial, in the adolescent peer culture.

Summary of Unique Contributions

Findings discussed in the above section generally validate the portrayal of gifted youth as extremely competent navigators of their social world. Additionally, gifted youth exhibit an adjustment profile marked by generally positive behavioral, academic and psychological functioning. However, unique aspects of the current study broaden the understanding of the social functioning of gifted youth. By providing a simultaneous view of the social world of gifted adolescents, the current study revealed that gifted youth were more popular and more central members of their cliques than were their non-gifted peers, but this success did not generalize to all peer domains, namely,

friendship and social impact. Additionally, the comprehensive examination of adjustment underscored areas in which gifted youth did not demonstrate their usual positive profile, including victimization, self-concept, relational aggression and conduct problems. Given this variability across social functioning and adjustment, it is not surprising that the current study also revealed a subset of gifted adolescents who experienced significant peer problems.

Gifted Adolescents with Peer Problems

As described in the previous section, most findings from the current study support the notion that gifted adolescents have more, or just as, positive peer relations and adjustment as their non-gifted peers. Given the negative and inaccurate stereotypes historically associated with gifted, it is understandable why parents, educators and researchers of gifted youth are motivated to emphasize this positive image. Yet it is equally important for the gifted field to resist adopting a “reverse stereotype” that assumes all gifted children are protected against having negative peer experiences. In fact, findings from the current study do not support the conclusion that gifted youth experience significantly *less* peer problems than their non-gifted peers. For instance, 11% of gifted adolescents in the current sample were actively disliked (i.e., rejected), 19% were ignored by peers (i.e., neglected), 7% were isolated in the network such that they did not belong to a single clique in the network, and 25% had fewer than 4 reciprocated

friendships (Median =9). As such, the current study substantiates predictions that there are indeed subgroups of gifted youth who experience peer problems.

Given the robust link between problematic peer relations and adjustment difficulty reported in the broader peer relations literature, an additional aim of the current study was to understand how negative experiences with peers relates to the adjustment of gifted youth and in what ways it may differ from non-gifted children. To date, only two studies have explored the profile of gifted youth who were rejected by peers (Cornell, 1990; Norman et al., 2000); however, since neither study included a non-gifted control sample, it remained unclear whether peer rejection was associated with the same or greater risk among gifted youth. The current study is the first to illustrate that the same negative behavioral, academic and psychological adjustment profile emerged for both gifted adolescents and non-gifted adolescents with problematic peer relations. The one notable exception was the concerning finding that the association between peer rejection (i.e., low social preference) and victimization was significantly stronger for gifted youth, such that rejected gifted adolescents in the current study were viewed by peers as the most victimized students in the entire sample. Since this moderation effect was found at both the 7th and 9th grade level, one can conclude this effect was quite robust. Given that rejection and victimization are independent markers of risk (Rubin et al., 1998), the additive risk of being rejected and extremely victimized clearly indicates this subset of gifted youth represent a special cause for concern. The

current study conducted a preliminary profile analyses to explore possible identifying characteristics unique to this subset of gifted adolescents with significant and pervasive peer problems. Implications for these findings are discussed below.

Profile of a Gifted Rejected-Victim

While peer rejection places youth at risk for victimization, peer rejection is also a consequence of victimization (Hodges & Perry, 1999), suggesting a vicious cycle between peer victimization and poor peer relations which makes it harder to escape. Indeed, gifted rejected-victims in the current study were found to have pervasive problems across distinct aspects of the peer system, as not only were they disliked and harassed by their peers, they were also significantly more isolated and had fewer friends than gifted youth without peer problems.

The profile analysis revealed evidence suggesting that gifted students who score significantly higher on their standardized EOG tests assessing reading and verbal abilities were more likely to be rejected and victimized relative to gifted students who scored lower on these tests. To the extent that standardized test scores accurately measure cognitive ability and/or intelligence, it is possible that gifted students with more advanced cognitive abilities are at a greater risk for being rejected and harassed by their peers. Aspects of asynchronous development may increase gifted youth's vulnerability to experience maltreatment by peers. Not surprisingly, gifted students report that hiding talents (e.g., "[I] cut back on raising my hand when no one knew the

answer.”), is one strategy they use to avoid harassment (Peterson & Ray, 2006), which overlaps with argument that verbally precocious youth may have a harder time hiding their talents than those gifted in the math domain (Brody & Benbow, 1986; Dauber & Benbow, 1990).

The profile analysis did not reveal convincing evidence to suggest gifted rejected-victims are underachieving at greater levels relative to their gifted peers without peer problems. However, it is important to mention they were found to have grades that, on average, were several points lower than their popular gifted counterparts. It may be important to follow this subset of gifted adolescents over a longer time period to increase the chance of detecting what effect problematic peer relations has on their academic functioning, given advanced cognitive abilities may provide protection in the short-term but not the long-term. As of now, it appears that the negative academic profile typically associated with peer rejection (Newcomb et al., 1993) is attenuated for gifted youth as their academic performance did not significantly differ from other gifted peers.

In contrast to non-gifted rejected-victims, gifted rejected-victims were seen by peers as exhibiting markedly low levels of aggression, even compared to other gifted adolescents who as a group were not very aggressive. Further, teachers rated gifted rejected-victims as more socially avoidant (which captured shyness and timidity) than other gifted students. This non-aggressive and socially avoidant profile characteristic of

gifted rejected-victims overlaps tremendously with the type of victim identified by researchers as displaying levels of passive submissiveness, emotional reactivity, and anxiousness that makes them “easy targets” for harassment and is in contrast to the other type of victim characterized by aggression, disruptiveness and a hot-temper (see Schwartz, Dodge, & Coie, 1993). Findings from the current study also revealed that developing close and intimate friendships was a possible protective factor against victimization among gifted youth, as high level of bonding was especially associated with low levels of victimization for gifted adolescents. This is consistent in the broader peer relations literature which has found that having friends protects against victimization (Hodges & Perry, 1999).

Summary

The results of the present research confirm predictions that there is indeed a subset of gifted adolescents who experience significant problems with peers, cutting across all aspects of the social world. This is particularly distressing given the extraordinary potential for academic success and contributions to society that gifted youth possess. The pronounced level of victimization experienced by rejected gifted students further underscores the heightened need for intervention with this group of adolescents. However, the low externalizing profile and positive academic adjustment this subset of gifted youth with peer problems may reduce the likelihood of being identified by educators as warranting intervention. Future research is needed to further

understand the underlying reasons contributing to the negative peer experiences of gifted youth to help inform effective intervention programs.

Limitations and Future Directions

Although the present study has the potential to contribute to the field in many ways, the results should be interpreted with caution due to a number of significant limitations of the research. Of primary importance is the generalizability of the gifted sample used in the current study. Although the current study benefited from using a sample that included a large percentage of gifted students, this may also have been a limitation. It is possible conducting the study in a magnet school was largely responsible for the high number of gifted students among its student body, calling for replication in a non-magnet school with a lower percentage of the student body comprised of gifted students. The large number of gifted students in the present study may have served as an unusual protective factor for gifted adolescents with regard to their social experience within this environment. It would be important to investigate the social world of gifted adolescents attending a school setting with a larger number of non-gifted peers given the desire to fit in with non-gifted peers may be heightened and adjustment profiles may be different for gifted students in this setting.

Nevertheless, despite a large group of gifted students in the sample's student population, it is important to reiterate the striking finding that rejected gifted students were the most victimized students in the study. This suggests that a large gifted

population does not necessarily serve as a buffer for negative peer experiences. Thus, findings from the current study regarding the adjustment of gifted youth, particularly those with peer problems, are likely conservative estimates and the adjustment profile of gifted adolescents may be substantially different, possibly worse, at schools with a smaller gifted sample.

The method of the current study was limited in the ability to capture the heterogeneity of gifted youth's peer experiences in several ways. First, the current study did not differentiate students by the level and domain-specificity of their giftedness. Hollingsworth (1942) was the first to posit that level of giftedness may be associated with difficulty interacting with peers, with extremely gifted children seemingly more at risk for problems with social and emotional adjustment. More recent work finding that extremely gifted youth, compared to moderately gifted youth, report experiencing lower levels of popularity (Brody & Benbow, 1986; Dauber & Benbow, 1990), having fewer friends (Janos et al., 1985) and having more advance conceptions and expectations of friendships (Gross, 2001) draws attention to the relevance of examining level of giftedness in an effort to identify which gifted students have more problematic peer relations and are, subsequently, more at risk for poorer adjustment. Along that same line, the addition of domain-specific measures of giftedness (math vs. verbal vs. both) may prove to be an important factor in distinguishing between gifted youth with and without peer problems, especially considering the findings that differences in verbal and

math abilities were differentially related to self-reported social competence (Brody & Benbow, 1986; Dauber & Benbow, 1990). Without such measures of how a student presents as gifted, the current study was not able to accurately explore how aspects of asynchronous development, such as advanced cognitive ability, related to the peer relations of gifted youth.

Secondly, the current study did not explore how personal variables, such as gender and ethnicity, added to the understanding of the social world of gifted youth. Although academic achievement and intelligence are often valued in our society, gender and cultural socialization practices and expectations may create unique conflicts between academic success and social acceptance for certain groups of gifted youth.

Gender socialization theory argues that children and adolescents who act in gender atypical or nonnormative ways are at risk for ridicule, victimization, and rejection (Maccoby, 1998). Whereas expressions of intellectual curiosity (e.g., asking questions, calling out in class, debating) are likely to be perceived positively when exhibited by a boy, the same behavior exhibited by a girl may be perceived as violating the norms of being a “good girl” and seen instead as obnoxious, aggressive or even unfeminine (Reis, 1987). This, of course, begs the question as to whether gifted girls who “play dumb” are more accepted by their peer group. On the other hand, heightened sensitivity found to be characteristic of gifted youth in general (Silverman, 1997), may place gifted boys particularly at risk for facing “ridicule in a culture that does not value

sensitive within males, [and] he may suppress his sensitivity and consequently withdraw emotionally for others around him” (Hebert, 2002, p. 139). Given athletic ability, toughness and social skills are all highly valued traits among boys (see Ruble, Martin, & Berenbaum, 2006), peer success may come to gifted males who replace or complement their academic success with “brawn” or athletic abilities (Reis & Hébert, 2008).

Additionally, African American youth also represent a subset of gifted students who may deliberately underachieve, hide their abilities, or resist participating in gifted programs to avoid being accessed by peers as “acting white” (see, Ford, 2002, for review). Without examining the unique experiences of gifted females, males and minority students, it is not known whether the findings from the current study generalize to all gifted students or certain subsets. Clearly, more work is needed to understand the unique set of challenges facing particular groups of gifted students as they navigate their peer world.

Findings from the present study suggest that a meaningful line of research examining the social functioning of gifted youth is one that examines individual differences within gifted youth to understand how being gifted may act as both a risk and protective factor when navigating the peer system. Such knowledge regarding the complexities of the peer relations of gifted youth provides a more nuanced, and most likely more accurate, overall picture of their social world. At the present time, fruitful

areas of future research may be studies that explore level of giftedness (extreme vs. moderate), domain of giftedness (math vs. verbal), as well as gender and ethnicity differences to help identify those gifted youth most at risk.

Appendix A: Measures

Student Survey Measures

1. Social Cognitive Mapping (SCM)
2. Sociometrics and Peer Nominations
3. How I View Myself
4. Friends and Peers
5. Things That You Have Done

Teacher Measure

6. Teacher Behavioral Checklist

Social Cognitive Mapping (SCM) Survey

Are there some kids here in 7th grade who hang around together a lot? yes / no
Please write their names on the lines below. Include each person's last name. Name all the groups of 7th graders that you can think of.

Group 1: _____

Group 2: _____

Group 3: _____

Group 4: _____

Group 5: _____

Group 6: _____

If you need more space, turn the paper over. Remember, you don't have to fill in all the lines.

Sociometric and Peer Nominations

(Note: Participants were provided with a roster of names of students in their grade in order to make the following nominations.)

Circle the names of kids who

1. YOU LIKE THE MOST.
2. YOU LIKE THE LEAST.
3. ARE LEADERS AND GOOD TO HAVE IN CHARGE.
4. YOU HANG AROUND WITH.
5. HANG AROUND WITH KIDS WHO GET IN TROUBLE.
6. ARE THE MOST POPULAR IN THE SEVENTH GRADE.
7. ARE THE LEAST POPULAR IN THE SEVENTH GRADE.
8. FIGHT A LOT, HIT OTHERS, OR SAY MEAN THINGS TO THEM.
9. LEAVE OTHER KIDS OUT ON PURPOSE OR TALK ABOUT THEM BEHIND THEIR BACKS.
10. GET PICKED ON AND TEASED.
11. HAVE MEAN THINGS SAID ABOUT THEM BEHIND THEIR BACKS OR WHO GET LEFT OUT OF THINGS ON PURPOSE.
12. GOOD AT GETTING OTHER KIDS TO BREAK THE RULES.

How I View Myself

Please look carefully at each of the lines below and circle where you think you fall on that line. You can circle any number between 1 and 7.

1	2	3	4	5	6	7
not very smart	a little smart	more than a little smart			very smart	

1	2	3	4	5	6	7
not very cool	a little cool	more than a little cool			very cool	

1	2	3	4	5	6	7
not able to get people to do things	a little able to get people to do things	more than a little able to get people to do things			always able to get people to do things	

1	2	3	4	5	6	7
not good at hanging out with lots of kids	a little good at hanging out with lots of kids	more than a little good at hanging out with lots of kids			very good at hanging out with lots of kids	

1	2	3	4	5	6	7
not able to stand up for myself and others	a little able to stand up for myself and others	more than a little able to stand up for myself and others			very able to stand up for myself and others	

1	2	3	4	5	6	7
not very strong		a little strong		more than a little strong		very strong
1	2	3	4	5	6	7
not very cheerful		a little cheerful		more than a little cheerful		very cheerful
1	2	3	4	5	6	7
not able to scare other kids		a little able to scare other kids		more than a little able to scare other kids		very able to scare other kids
1	2	3	4	5	6	7
not very attractive		a little attractive		more than a little attractive		very attractive
1	2	3	4	5	6	7
no power to decide who's "in" and "in" who's "out"		a little power to decide who's "in" and who's "out"		more than a little power to decide who's "in" and who's "out"		a lot of power to decide who's and who's "out"
1	2	3	4	5	6	7
not easy to get a boy/girlfriend		a little easy to get a boy/girlfriend		more than a little easy to get a boy/girlfriend		very easy to get a boy/girlfriend

Friends and Peers

Section A

Now we would like you to tell us about your friends. We will not ask you to name your friends, but think of the friends you spend the most time with. Start with your very best friend who is **NOT** a romantic partner and answer the following questions with that friend in mind.

1. Is your best friend a boy or a girl?
 - a. Boy
 - b. Girl

2. How old is your best friend?
 - a. 11 or younger
 - b. 12
 - c. 13
 - d. 14
 - e. 15
 - f. 16
 - g. 17
 - h. Other age: _____

3. How long have you known this friend?
 - a. Less than 6 months
 - b. 6 months – 1 year
 - c. 1 year
 - d. 2 years
 - e. 3-5 years
 - f. 6-9 years
 - g. 10 or more years

4. How did you meet? How did you become friends? (Circle all that apply)
- School
 - Neighborhood
 - Friend is a family member/relative
 - Parent connection (for example: moms are friends)
 - Family connection (for example: sister or cousin introduced us)
 - Activity (for example: Girl Scouts)
 - Church/religious affiliation
 - Another friend introduced you
 - Don't know/can't remember
5. How often do you see each other?
- Every day or every school day
 - 2-3 times a week
 - 1 time a week
 - 1-2 times a month
 - Not often (for example: once a year)

For items 6-27, use this scale: 1 = Very much, 2 = Somewhat, 3 = A little, 4 = Not at all

	Very much	Somewhat	A little	Not at all
6. Do you want to be the kind of person this person is?	1	2	3	4
7. Do you feel very close to this person?	1	2	3	4
8. Do you enjoy spending time with this person?	1	2	3	4
9. Does this person help you when you need help?	1	2	3	4

10. Would you stick with this person no matter what?	1	2	3	4
11. Does this person do things that get him/her into serious trouble with teachers?	1	2	3	4
12. Has this person tried beer, wine, or liquor when his/her parents didn't know about it?	1	2	3	4
13. Does this person smoke cigarettes or use other tobacco products?	1	2	3	4
14. In the past year, has this person used marijuana or other drugs?	1	2	3	4
15. Does this person try to do well in school?	1	2	3	4
16. Do your parents approve of this person?	1	2	3	4
17. Has this person done anything that could have gotten him/her in trouble with the police?	1	2	3	4
18. Has this person ever stolen something?	1	2	3	4
19. Has this person ever damaged or destroyed something that didn't belong to him/her?	1	2	3	4

20. Has this person ever asked or expected you to do things that could get you into trouble with your parents, the school, or the police?	1	2	3	4
---	---	---	---	---

21. Have the two of you (with others or not) ever done things together that might have gotten you into trouble with the police?	No	Yes
22. Have the two of you ever stolen something together?	No	Yes
23. Have the two of you ever damaged or destroyed something that didn't belong to you together?	No	Yes
24. Have the two of you ever smoked cigarettes or used other tobacco products together?	No	Yes
25. Have the two of you ever been around alcohol or drugs together?	No	Yes
26. Have the two of you ever drunk beer, wine, or liquor together?	No	Yes
27. Have the two of you ever used drugs together?	No	Yes

Section B

If you do not currently have a boyfriend or girlfriend and have not had a boyfriend or girlfriend this past year, *skip to Section C.*

The following questions refer to yourself and your current boyfriend/girlfriend (or the last boyfriend/girlfriend you had this past year if you don't have a current boyfriend/girlfriend). Please remember that all of these questions in this section refer only to your relationship with this person.

1. How old is this person?
 - a. 11 or younger
 - b. 12
 - c. 13
 - d. 14
 - e. 15
 - f. 16
 - g. 17
 - h. Other age: ____

2. How long have you known him/her?
 - a. Less than 6 months
 - b. 6 months – 1 year
 - c. 1 year
 - d. 2 years
 - e. 3-5 years
 - f. 6-9 years
 - g. 10 or more years

3. How did you meet?
 - a. School
 - b. Neighborhood
 - c. Parent connection (for example: moms are friends)
 - d. Family connection (for example: sister or cousin introduced us)
 - e. Activity (for example: Girl Scouts)
 - f. Church/religious affiliation
 - g. Another friend introduced you
 - h. Don't know/can't remember

4. How often do you see each other?
 - a. Every day or every school day
 - b. 2-3 times a week
 - c. 1 time a week
 - d. 1-2 times a month
 - e. Not often (for example: once a year)

For items 5-26, use this scale: 1 = Very much, 2 = Somewhat, 3 = A little, 4 = Not at all

	Very much	Somewhat	A little	Not at all
5. Do you want to be the kind of person this person is?	1	2		
6. Do you feel very close to this person?	1	2		

7. Do you enjoy spending time with this person?	1	2		
8. Does this person help you when you need help?	1	2		
9. Would you stick with this person no matter what?	1	2		
10. Does this person do things that get him/her into serious trouble with teachers?	1	2		
11. Has this person tried beer, wine, or liquor when his/her parents didn't know about it?	1	2		
12. Does this person smoke cigarettes or use other tobacco products?	1	2		
13. In the past year, has this person used marijuana or other drugs?	1	2		
14. Does this person try to do well in school?	1	2		
15. Do your parents approve of this person?	1	2		
16. Has this person done anything that could have gotten him/her in trouble with the police?	1	2		

17. Has this person ever stolen something?	1	2		
18. Has this person ever damaged or destroyed something that didn't belong to him/her?	1	2		
19. Has this person ever asked or expected you to do things that could get you into trouble with your parents, the school, or the police?	1	2		

20. Have the two of you (with others or not) ever done things together that might have gotten you into trouble with the police?	No	Yes
21. Have the two of you ever stolen something together?	No	Yes
22. Have the two of you ever damaged or destroyed something that didn't belong to you together?	No	Yes
23. Have the two of you ever smoked cigarettes or used other tobacco products together?	No	Yes
24. Have the two of you ever been around alcohol or drugs together?	No	Yes
25. Have the two of you ever drunk beer, wine, or liquor together?	No	Yes
26. Have the two of you ever used drugs together?	No	Yes

Section C

Now think of the rest of the people you hang around with.

1. Are these people mostly older, younger, or about the same age as you?
 - a. All older
 - b. Mostly older
 - c. About the same age as me
 - d. Mostly younger
 - e. All younger

2. Are these people mostly girls, mostly boys, or about half girls and half boys?
 - a. All girls
 - b. Mostly girls
 - c. About half girls and half boys
 - d. Mostly boys
 - e. All boys

3. Are these people mostly from school, from your neighborhood, or about half from school and half from your neighborhood?
 - a. All from school
 - b. Mostly from school
 - c. About half from school and half from my neighborhood
 - d. Mostly from my neighborhood
 - e. All from my neighborhood

4. When I compare my friends from my neighborhood with my friends from school, those who have the greatest influence on my behavior are:
 - a. Almost entirely from the neighborhood
 - b. Mostly from the neighborhood
 - c. Equally from the neighborhood and school
 - d. Mostly from school
 - e. Almost entirely from school

5. When I compare my friends from my neighborhood with my friends from school, those who I have the greatest influence on are:
 - a. Almost entirely from the neighborhood
 - b. Mostly from the neighborhood
 - c. Equally from the neighborhood and school
 - d. Mostly from school
 - e. Almost entirely from school

For items 3-24, use this scale: 1 = Very much, 2 = Somewhat, 3 = A little, 4 = Not at all

	Very much	Somewhat	A little	Not at all
3. Do you want to be the kind of person these people are?	1	2	3	4

4. Do you feel very close to these people?	1	2	3	4
5. Do you enjoy spending time with these people?	1	2	3	4
6. Do these people help you when you need help?	1	2	3	4
7. Would you stick with these people no matter what?	1	2	3	4
8. Do these people do things that get them into serious trouble with teachers?	1	2	3	4
9. Have these people tried beer, wine, or liquor when their parents didn't know about it?	1	2	3	4
10. Do these people smoke cigarettes or use other tobacco products?	1	2	3	4
11. In the past year, have these people used marijuana or other drugs?	1	2	3	4
12. Do these people try to do well in school?	1	2	3	4
13. Do your parents approve of these people?	1	2	3	4

14. Have these people done anything that could have gotten them in trouble with the police?	1	2	3	4
15. Have these people stolen something?	1	2	3	4
16. Have these people ever damaged or destroyed something that didn't belong to them?	1	2	3	4
17. Have these people ever asked or expected you to do things that could get you into trouble with your parents, the school, or the police?	1	2	3	4

18. Have you ever done things together that might have gotten you into trouble with the police?	No	Yes
19. Have you ever stolen something together?	No	Yes
20. Have you ever damaged or destroyed something that didn't belong to you together?	No	Yes
21. Have you ever smoked cigarettes or used other tobacco products together?	No	Yes
22. Have you ever been around alcohol or drugs together?	No	Yes
23. Have you ever drunk beer, wine, or liquor together?	No	Yes
24. Have you ever used drugs together?	No	Yes

Things That You Have Done

Please indicate the number of times you have done the things described in the following items. **If you have never done them, write "0" for the number of times.** Think about how many times you have done each thing **in the last 6 months.**

In the past six months, how many times have you...

1. Tried to keep others from liking another kid by saying mean things about him/her?
Number of times: _____
2. Spread a false rumor about someone?
Number of times: _____
3. Left another kid out on purpose when it was time to do an activity?
Number of times: _____
4. Hit, slapped, or shoved other kids or gotten into a physical fight?
Number of times: _____
5. Threatened to hit someone in order to get something?
Number of times: _____
6. Gone into somebody's garden, backyard, house, or garage or some other place when you were not supposed to be there?
Number of times: _____
7. Taken something from a store without paying for it that cost under \$5?
Number of times: _____
8. Snuck into something without paying, such as movies, onto a bus or subway?
Number of times: _____
9. Run away from home?
Number of times: _____
10. Purposely set fire (or tried to) to a house, building, car, or other property?
Number of times: _____

11. Taken some money at home that did not belong to you like from your mother's purse or your parents' dresser?
Number of times: _____
12. Skipped classes or school without an excuse?
Number of times: _____
13. Taken anything at school from the teacher or other kids that did not belong to you?
Number of times: _____
14. Carried a weapon?
Number of times: _____
15. Attacked someone with the intent to hurt them?
Number of times: _____
16. Purposely damage or destroyed property that didn't belong to you?
Number of times: _____
17. Stolen something or tried to steal something worth between \$5 and \$50?
Number of times: _____
18. Taken or tried to take a car or truck or motorcycle that didn't belong to you for a ride?
Number of times: _____
19. Thrown objects such as rocks or bottles at people?
Number of times: _____
20. Been suspended or expelled for bad behavior at school?
Number of times: _____
21. Been involved in a gang fight?
Number of times: _____
22. Written things or sprayed paint on walls or sidewalks or cars where you were not supposed to?
Number of times: _____

23. Stolen something or tried to steal something worth more than \$50?

Number of times: _____

24. Sold or carried illegal drugs for anyone?

Number of times: _____

25. Been in trouble with the police for something you did?

Number of times: _____

Teacher Behavioral Checklist

Please circle the appropriate number that corresponds to how this child acts in school.

	Never True	Rarely True	Sometimes True	Often True
1. This student uses physical force, or threatens to use physical force, in order to dominate other kids	1	2	3	4
2. This student acts silly or immature.	1	2	3	4
3. This student is timid about joining other children and usually stays just outside the group without joining in.	1	2	3	4
4. When this student is mad at a peer, (s)he gets even by excluding the peer from his/her clique or group.	1	2	3	4
5. This student is very good at understanding other people's feelings.	1	2	3	4
6. This student is a leader, and can tell others what should be done but is not too bossy.	1	2	3	4
7. This student makes things work well in a group.	1	2	3	4

8. This student joins in with others in an appropriate and positive manner.	1	2	3	4
9. This student resolves conflicts with peers.	1	2	3	4
10. This student performs poorly in reading.	1	2	3	4
11. This student gets picked on or teased by other kids.	1	2	3	4
12. When a peer accidentally hurts this student (such as bumping into her), this student assumes that the peer mean to do it, and then overreacts with anger and fighting.	1	2	3	4
13. This student worries about what other children think of him/her.	1	2	3	4
14. This student threatens or bullies others in order to get his/her own way.	1	2	3	4
15. This student does things that other children think are strange or inappropriate.	1	2	3	4
16. This student listens carefully to others	1	2	3	4

17. This student spreads rumors or gossips about some peers.	1	2	3	4
18. This student is very aware of the effects of his/her behavior on others.	1	2	3	4
19. This student doesn't seem to enjoy things.	1	2	3	4
20. This student is kind to peers who want to join a group.	1	2	3	4
21. This student easily joins the activities of others.	1	2	3	4
22. This student can resolve disagreement with friends.	1	2	3	4
23. This student performs poorly in math.	1	2	3	4
24. This student is bullied by other children.	1	2	3	4
25. This student tries to tell other children how things should be done.	1	2	3	4

26. This student worries that other children don't like her.	1	2	3	4
27. This student tries to dominate classmates and pushes self into existing play or work groups.	1	2	3	4
28. This student makes a lot of comments that are not related to what the group is doing; many of these comments are self-related.	1	2	3	4
29. This student is anxious and insecure in social situations.	1	2	3	4
30. When angry at a peer, this student tries to get other children to stop playing with the peer or stop liking the peer.	1	2	3	4
31. This student says supportive things to peers.	1	2	3	4
32. This student initiates group activities with peers.	1	2	3	4
33. This student seems sad and unhappy.	1	2	3	4
34. This student enters peers' ongoing activities without difficulty and without disrupting them.	1	2	3	4

35. This student doesn't carry a grudge.	1	2	3	4
36. This student is left out of things on purpose by other children.	1	2	3	4
37. This student gets angry easily and strikes back when she is threatened or teased.	1	2	3	4
38. This student worries about doing something in front of other children.	1	2	3	4
39. This student gets impatient when other children do not do things the way (s)he thinks they should be done.	1	2	3	4
40. This student makes odd noises or unusual comments.	1	2	3	4
41. This student is self-conscious and easily embarrassed.	1	2	3	4
42. When mad at a peer, this student ignores the peer or stops talking to the peer	1	2	3	4
43. Other children follow this student 's example and suggestions.	1	2	3	4

44. This student makes sure anyone who wants to join in a game or activity is included.	1	2	3	4
45. This student is effective in making new friends.	1	2	3	4
46. This student tries to resolve arguments in a calm and friendly way.	1	2	3	4
47. This student has had mean things said about her behind her back.	1	2	3	4
48. This student cries a lot.	1	2	3	4
49. This student starts fights with peers.	1	2	3	4
50. This student feels shy even with kids she knows well.	1	2	3	4
51. This student says mean things to peers, such as teasing or name calling.	1	2	3	4
52. This student bothers other kids when they are trying to work.	1	2	3	4

53. This student usually plays or works alone.	1	2	3	4
54. This student tries to exclude certain peers from group activities.	1	2	3	4
55. This student can stand up for his/herself in a non-offensive way.	1	2	3	4
56. This student girl is comfortable joining a group of children (s)he doesn't know.	1	2	3	4
57. This student is cooperative and shares.	1	2	3	4
58. This student blames his/herself for things that are not his/her fault. 59. This student always claims that other children are to blame in a fight and feels that they started the trouble.	1	2	3	4
60. This student includes other children in group activities.	1	2	3	4
61. This student usually wants to be in charge and set the rules and give orders.	1	2	3	4
63. This student sometimes ignores peers or gives them the "silent treatment."	1	2	3	4

64. This student expresses her opinions persuasively.	1	2	3	4
65. This student takes turns, plays fair, and follows the rules of the game.	1	2	3	4
66. This student seems tired and sits around and does nothing.	1	2	3	4
67. This student shows positive leadership in groups of peers.	1	2	3	4
68. This student tries to cheer up peers when they are sad or upset about something.	1	2	3	4

69. What proportion of this student's peers, male and female, like and accept him/her? Would you say:

Very Few Less than 25%	Some About 25%	About Half 50%	Most About 75%	Almost All, More than 75%
1	2	3	4	5

70. What proportion of this student's peers dislike or reject him/her? Would you say:

Very Few Less than 25%	Some About 25%	About Half 50%	Most About 75%	Almost All, More than 75%
1	2	3	4	5

71. What proportion of this student's peers ignore him/her or are simply neutral about him/her? Would you say:

Very Few Less than 25%	Some About 25%	About Half 50%	Most About 75%	Almost All, More than 75%
1	2	3	4	5

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Biography

Kristen Foster Peairs was born on May 9, 1982 in San Diego, California. She received a B.A. with Highest Honors in Psychology from the University of North Carolina at Chapel Hill in 2004. In the fall of 2004, Kristen began her doctoral studies and training at Duke University in Child Clinical Psychology and received her M.A. in 2009. She was awarded the Sulzberger-Levitan Social Policy Graduate Research Fellowship through the Center for Child and Family Policy at Duke University during the 2007-2008 academic year. Additionally, during the 2009-2010 academic year, Kristen was awarded the Esther Katz Rosen Fellowship from the American Psychological Foundation. Kristen was accepted into the University of California, San Diego's Predoctoral Clinical Internship program in 2010. Kristen is a student member of the Society of Research on Child Development, Society for Research on Adolescence, American Psychological Association, and National Association for Gifted Children.