# FINDING NEW FRIENDS OR FALLING BACK ON FAMILIAR FACES: THE PEER AFFILIATIONS OF AGGRESSIVE STUDENTS DURING THE TRANSITION TO MIDDLE SCHOOL

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ABSTRACT

BRYAN C. HUTCHINS: Finding new friends or falling back on familiar faces: The peer affiliations of aggressive students during the transition to middle school (Under the direction of Jill Hamm, Ph.D.)

This study investigated the school-based peer affiliations of youth during the transition to middle school. One-hundred seventy one participants were followed over the first three semesters of middle school to examine students' affiliation patterns with previously familiar peers who attended the same elementary school. A series of univariate and repeated measures ANOVAs were used to detect changes in peer affiliations. Overall, students were more likely to affiliate with a greater proportion of previously familiar peers when they arrived at middle school, but there was a linear decline in the proportion of familiar peers within peer groups over time. Boys showed little change in affiliations with familiar peers, while girls showed a steady decline in the proportion of familiar peers within their peer groups. Students rated as physically aggressive by teachers and peers did not affiliate with a significantly different proportion of familiar peers than non-aggressive students at all time points. However, students rated as socially aggressive by peers, but not teachers, affiliated with a greater proportion of familiar peers than non-aggressive students during the first two semesters of middle school.

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# CHAPTER I

## INTRODUCTION

The transition to middle school is a major milestone in the lives of many adolescents. This transition can be difficult because it often requires a student to move from a smaller elementary school to a larger middle school that can be overwhelming at times. When students enter middle school they are faced with a variety of new experiences that are far different from their elementary school experiences (Eccles, Midgley, Wigfield, Buchanan, Rueman, et al., 1993). For the majority of students, elementary school is smaller and more intimate. Students often have the same teacher and interact with the same classroom of peers throughout the year. However, as students transition to middle school they typically have more than one teacher and move from classroom to classroom throughout the day. In addition, middle school students typically come into contact with a larger pool of peers, usually during unstructured and unsupervised activities such as class change or lunch (Hardy, Bukowski, & Sippola, 2002).

The peer relational research suggests that during any time of transition there is a disruption in peer relationships (Cairns & Cairns, 1994; Farmer, Xie, Cairns, & Hutchins, 2007). This is especially true during the transition to middle school (Bukowski & Newcomb, 1984; Hardy et al., 2002). A variety of factors contribute to this disruption. First, middle school students come into contact with new and unfamiliar peers who attended different feeder schools. Second, because middle school students typically move from

classroom to classroom and have greater freedom to move around (e.g., during class change or lunch), there are fewer restrictions on students' ability to seek out and establish relationships with peers of their own choosing (Cairns, Xie, & Leung, 1998; Eckert, 1989). The disruption of peer relations during the transition to middle school gives rise to considerable reshuffling and reorganization of peer networks (Farmer, et al., 2007).

Although there is considerable reshuffling and reorganization during this transition, several factors influence how students reorganize their peer groups. Gifford-Smith and Brownell (2003) suggest that peer group formation is influenced by three distinct yet interconnected factors: propinquity or physical proximity, similarity, and familiarity. Propinquity refers to the finding that students are more likely to form peer groups with those who are closer or more readily available than those with whom there are fewer opportunities for contact. Similarity refers to the finding that students are more likely to affiliate with those who are similar to themselves on a variety of demographic and behavioral characteristics. Familiarity refers to the fact that when students are put into new situations where they are faced with familiar and unfamiliar peers they are often more likely to affiliate with those whom they know or have had some prior contact (Cairns et al., 1998).

While considerable attention has been given to how propinquity and similarity influence peer group formation, few studies have examined how familiarity may impact peer affiliations (Gifford-Smith & Brownell, 2003; Hardy et al., 2002; Neckerman, 1996). Cairns et al. (1998) suggest that familiarity may play an especially important role during the transition to middle school. For example, during the beginning of the school year students come into contact with a large pool of peers, many of whom are most likely unfamiliar. Until the students have a chance to meet new peers and determine if their beliefs, goals, and

interests are compatible, students may be more likely to affiliate with those whom they are more familiar with even if they share few other similarities. In the case of the middle school transition students who attended the same elementary school are more likely to be familiar as it is less likely that incoming students have had contact with students from other elementary schools prior to the transition (Hardy et al., 2002). Most would agree that affiliating with familiar peers during times of transition makes intuitive sense, yet few studies have focused on the role of familiarity in peer relations during this transition.

The current investigation is a longitudinal study of the role that familiarity may play in peer affiliations during the first year and a half of middle school. This study will investigate whether or not students will take advantage of opportunities to affiliate with new and unfamiliar peers upon entering middle school or whether or not they will seek out those who are more familiar. Additionally, the longitudinal nature of this investigation will make it possible to examine possible trends in affiliations with familiar peers.

The current investigation is unique in that it will examine how aggressive students may differ from non-aggressive students with regards to affiliations with familiar peers. There is evidence that adolescents with higher levels of antisocial or aggressive behaviors are more likely to affiliate with peers who are more familiar or live within close proximity (Dishion, Andrews, & Crosby, 1995; Eckert, 1989). However, the few studies that have examined peer familiarity within the school context have failed to consider the role that interpersonal behavioral characteristics may play in peer affiliations (Hardy et al., 2002). This study is the first to examine how aggressive students may differ from non-aggressive students in their affiliations with familiar and unfamiliar peers during the middle school transition. The literature reviewed in this investigation suggests that different affiliation

patterns are likely to emerge when aggression is considered. More specifically, aggressive students may be more likely to affiliate with familiar peers across the first year and a half of middle school, while non-aggressive students may be more likely to affiliate with new and unfamiliar peers.

Most studies of aggressive behavior focus on physical forms of aggression. This investigation will explore the relationship between peer familiarity and both social and physical aggression. A distinction has emerged in the literature between physical aggression and aggression that has been referred to as relational, social, or indirect aggression (Xie, Cairns, & Cairns, 2002). Current scholarship is beginning to focus attention on the development and function of social aggression, particularly among adolescent girls (Sippola, Paget, & Buchanan, 2007; Xie, Cairns, & Cairns, 2005). This investigation will explore the possibility that different affiliation patterns will emerge between socially and physically aggressive students.

Finally, this investigation is unique because it will use both teacher and student reports to identify aggressive students. All of the studies cited in this review relied on teacher reports to identify aggressive students. While this is an established practice in the developmental literature, there is evidence to suggest that student reports of aggressive peers may be equally informative, especially at middle school when teachers have limited contact with students and are less likely to observe more subtle forms of aggression (Pellegrini & Bartini, 2001). Peers may provide a more reliable and valid means of identifying aggressive students because aggressive students are less likely to hide misdeeds from their peers as they would from adults (Coie & Dodge, 1998). Furthermore, using students as informants provides a greater number of raters whereas students identified by teacher reports are often

done so using one teacher as a rater (Huesmann, Eron, Guerra, & Crawshaw, 1994). It will be beyond the scope of this investigation to provide extensive evidence to support using either teacher or student reports. However, this investigation will use both reports and include a discussion of the correspondence between teachers and students.

# CHAPTER II

# LITERATURE REVIEW

## *Peer Group Formation*

The developmental literature suggests that children and adolescents seek out playmates, friends, and groups of peers[1] who are similar on a variety of dimensions. Peer group members tend to have a high degree of similarity on characteristics such as levels of aggression and deviant behavior, popularity, social status, academic motivation, maturation, leadership, athleticism, and attractiveness for example (Adler & Adler, 1998; Cairns & Cairns, 1994; Cairns, Cairns, Neckerman, Gest, & Gariépy, 1988; Farmer & Farmer, 1996; Gifford-Smith & Brownell, 2003; Hamm, 2000; Kindermann, 1993; Neckerman, 1996; Ryan, 2001). Peers also tend to affiliate based on demographic similarities. For example, boys and girls tend to form same-sex friendships and peer groups. This gender segregation intensifies during childhood and into adolescence (Maccoby, 2000; Maccoby & Jacklin, 1987). Also, beginning in the early elementary grades, the number of friendships that are cross-race (i.e., among friends of a different racial backgrounds) begin to decrease such that by middle and early high school, peers increasingly maintain friendships with peers of similar racial backgrounds (Aboud, Mendelson, & Purdy, 2003; Hamm, Brown, & Heck, 2005; Shrum, Cheek, & Hunter, 1988).

[1] There are clear conceptual, theoretical, and methodological distinctions made between friend and peer affiliates in the peer relational literature, however there is considerable similarity in the way friendships and peer groups form. Thus, this review will focus on the similarity in how friendships and peer groups form while recognizing that a discussion of the distinctions between the two is beyond the scope of this review.

The propensity for individuals to affiliate with similar peers is known as *homophily* (Kandel, 1978). Kandel suggests that there are three stages to homophily: *selection*, *socialization*, and *exclusion*. First, individuals select and affiliate with friends or peers based on perceived similarity. Second, during the process of socialization similarities in behaviors, attitudes, and beliefs among friends augment over time. If members continue to share similar characteristics, the friendship or peer group will remain stable. If members do not conform to the socialization pressures of friends or peers they are likely to be excluded or ostracized from the group or the friendship might dissolve (Adler & Adler, 1998).

There are several reasons why individuals may affiliate with similar peers. Youniss (1980) suggests that unlike parent-child relationships, peers come to social situations on an equal footing. As children and adolescents attempt to fulfill their own goals or exert their own will upon others, they must also learn to adapt to the goals and needs of others. Choosing similar peers may offer children and adolescents an opportunity to achieve their own goals when surrounded by like-minded peers. Affiliating with peers who share similar beliefs, values, or customs may help an individual avoid resistance that could be encountered from those who may have conflicting goals.

*Peer Group Stability*

The process of homophily implies that when like-minded individuals come together stability is maintained as long as peers continue to perceive themselves as similar to each other and continue to synchronize their behaviors (Farmer & Farmer, 1996). As children move into adolescence they experience a variety of biological and cognitive changes (often at different time points) that may alter their interests, goals, or behaviors, which in turn may put them at odds with the other members of the peer group. Also, external forces such as school

organization and practices or the transition from one school level to the next can influence the stability of peer groups (Cairns et al., 1998).

Peer groups are relatively stable over short intervals. For example, Cairns, Leung, Buchanan, and Cairns (1995) found that 66 to 100 percent of 4th and 7th grade peer groups retained at least half of their members over a three to six week period. On the other hand, Kindermann (1993) found that over a 1 year period, 4th and 5th grade peer groups had only modest stability (i.e., 50% turnover). Over longer periods of time it appears that school institutional practices impact propinquity, which in turn affects peer group stability. For example, Neckerman (1996) found that over a one year period, 4th and 7th grade peer groups remained more stable (i.e., retained 50% of members) when the school promoted the classroom as a unit. Fifty-five percent of groups remained stable in classrooms that were promoted as a unit compared to 7% from classrooms that were not promoted together.

While the literature on peer group stability highlights the relatively high degree of reshuffling that occurs over time, this literature often overlooks other factors that imply a degree of stability or continuity in peer networks. For example, while Kindermann (1993) found only modest stability in peer group members over a one-year period, he found that characteristics of the group as a whole remained stable even as members entered and left the group. Kindermann found that groups that were high on academic achievement lost several members, but these members were often replaced with other high academic achieving students. This study suggests that there may be opportunities to find continuity in the midst of change when examining peer groups. In another example, Nash (1973) followed a group of boys as they transitioned to middle school. Over the course of the transition there was a high degree of turnover in peer group membership. However, several of the newly formed

groups were comprised of peers who attended the same elementary school, but were not actually friends during elementary school. In several cases boys chose to affiliate with others from the same elementary school even when they had greater levels of dissimilarity on motivation, academic competence, and socioeconomic status.

The fact that some students affiliated with familiar peers despite having little in common supports the hypothesis that familiarity may play an important role in peer affiliations. However, this finding points to another consideration. While these boys may have befriended familiar peers despite a lack of similarity, the fact that they attended the same elementary school could be a source of perceived similarity. Although these boys were not friends in elementary school it stands to reason that they were likely to have known each other in elementary school. Even if they were unfamiliar with each other in elementary school, learning that they attended the same elementary school during middle school may have the same impact. That is, while they may have viewed themselves as different on some factors, the fact that they attended the same elementary school and therefore shared similar experiences may have lead some to view themselves as more similar even if this was not apparent to others. This situation could be seen as analogous to the formation of friendships or acquaintances among alumni from the same college or university. While these individuals may be dissimilar in many ways, attending the same school may create a sense of similarity based on a shared experience of attending the same college. This perceived similarity at one level may counter other areas where there is greater dissimilarity.

*Peer Familiarity and the Transition to Middle School*

Only two studies to date have focused on the role of peer familiarity in peer group formation during the transition to middle school. As previously mentioned, Nash (1973)

found that in many cases middle school students chose to affiliate with peers who attended the same elementary school even if they were not previously friends. Also, several students chose to affiliate with familiar peers even if they shared few similarities. In a recent study Hardy et al. (2002) examined both the stability of friendships among students making the transition from several small elementary schools to a larger middle school and the degree to which peers reported friendships with previously familiar versus previously unfamiliar peers.

In the second study, Hardy et al. (2002) used reciprocated and unreciprocated friendship nominations to assess changes in friendships across the school year. A unique feature of this study was that it took place in a rural setting in which the elementary schools served all of the students in their respective community. When these students transitioned to middle school it was unlikely that they had prior contact with students who attended other elementary schools. Consistent with previous findings, Hardy et al. found that across the transition to middle school there was a significant decline in the number of friendship nominations (including reciprocated nominations) among peers who were old friends from elementary school. In addition, Hardy et al. found that there was not a significant change in the number of friendship nominations of previously familiar peers across the first year of middle school, but there was a significant increase in the number of nominations of previously unfamiliar peers. Additionally, girls were more likely to nominate previously unfamiliar peers than boys. These findings suggest that girls were more likely to take advantage of the opportunity to affiliate with the entire pool of new and unfamiliar peers. Boys continued to affiliate with the same amount of familiar peers and were less likely than girls to seek out friendships with unfamiliar peers.

Both Nash (1973) and Hardy et al. (2002) provide insight into how familiarity may play a role in peer group formation. The findings from Nash suggest that coming from the same elementary school may be no small matter when students are forming peer groups in middle school. Students might consider which elementary school their peers attended as a type of shared similarity or they may seek out familiar faces as a way to find stability during this transition. However, findings from Hardy et al. suggest that while boys and girls show little change in their reports of friendships with previously familiar peers, girls were more likely to form new friendships with unfamiliar peers than boys, but that over time both boys and girls increasingly developed friendships with peers who did not attend the same elementary school.

An important consideration that is missing from both studies is the role that behavioral characteristics may play in adolescents' affiliations with familiar peers. For example, Nash (1973) found that some groups were comprised of familiar peers from the same elementary school while others were not. Nash did not explore possible behavioral characteristics that may have explained why some peers affiliated with previously familiar peers while others did not. Several studies, including empirical and ethnographic studies, suggest that peers with higher levels of antisocial behavior may be more likely to form and retain friendships with familiar peers than their prosocial counterparts (Dishion, et al., 1995; Eckert, 1989; Kiesner, Kerr, & Stattin, 2004).

*Antisocial Students and Peer Familiarity*

A growing body of evidence from the developmental and community psychology literature suggests that youth who have higher levels of aggressive or antisocial behavior may be more likely to affiliate with familiar peers. In fact, the findings that will be covered in this

review suggest that aggressive youth are more likely to form friendships with neighborhood and community peers. Such youth may affiliate with peers whom they know from their neighborhood and community while at school instead of taking advantage of opportunities to affiliate with new and unfamiliar peers.

Eckert (1989) observed and interviewed high school students in an ethnographic study of social identity over a two year period. Eckert suggests that beginning in middle school and continuing into high school that most individuals fit into one of two categories: those who are considered high academic achievers and engaged with school activities such as sports, clubs, or student government and those who are antisocial, more likely to use drugs, and engage in delinquent or criminal activities. Eckert refers to the first group as "jocks" and the second group as "burnouts". For Eckert, jock is not a negative term as these individuals were often considered to be well rounded students. Eckert points out that several types of burnouts. Some burnouts used substances such as tobacco, alcohol, or drugs and engage in delinquent or criminal behavior, while others did not use drugs, but still engaged in antisocial behavior or resisted conforming to the institutional practices of the school.

Eckert (1989) made a number of interesting observations about school peer networks that are important for the current investigation. One overarching finding was the divergent views that jocks and burnouts had regarding school. For jocks, school was an important place to make friends and seek positions of status and power through involvement in school activities. Eckert suggests that for jocks, school presents an opportunity to practice being a competent member of society on a small scale. Burnouts on the other hand, generally did not have an interest in becoming an integral part of the school. She found that burnouts often entered the school environment with aims and goals that were inconsistent with the values of

the school. For example, Eckert suggests that many burnouts came from working middle class families and may not plan to attend college after high school. Because this particular school placed more emphasis on preparing students for college, many burnouts felt that their interests in seeking vocational training or cultivating relationships with future employers in the community were often overlooked by teachers and administrators.

Eckert (1989) found that burnouts' lack of interest or engagement in school also had an impact on school peer networks. For example, jocks tended to seek out friendships with other students in the school. Friendships were often strategically cultivated in order to increase one's standing within the school social hierarchy. Jocks were also more likely to befriend school personnel in order to further their social standing. Burnouts were less likely to view the school as a place to form friendships. Burnouts tended to form friendships within their neighborhood or community, usually during activities such as sporting events at community parks. During school, burnouts chose to affiliate with those who were from the same community or neighborhood. Jocks tended to avoid forming friendships with peers from outside of school because their goals were directed at increasing their status within the school. Making friends outside of school would do little to further these goals. Burnouts on the other hand were often dissatisfied with, and rebelled against school. This attitude in turn led many burnouts to avoid contact with unfamiliar peers in the school. Most burnouts did not want to be associated with those who wanted to climb the school social hierarchy.

Eckert's (1989) ethnographic work presents an interesting take on peer relationships inside and outside of the school yet few empirical studies have followed up on this work by examining affiliation patterns of antisocial youth. The few studies that have examined this relationship confirm many of Eckert's observations. For example, Dishion et al. (1995)

examined the relational characteristics of antisocial boys in a sample of 186 13-14 year-old boys and their best friend. As an aspect of the study, students were asked where they met (school or neighborhood) and how far they lived from one another (within 2-3 blocks or greater than 2-3 blocks). The investigators found that dyads with higher levels of antisocial behavior were more likely to have met outside of school and to live within the same neighborhood. This finding is consistent with Eckert's findings and suggests that adolescents with higher levels of antisocial behavior may choose to affiliate with neighborhood peers while at school instead of forming new friendships from the available pool of classmates.

Kiesner et al. (2004) reported similar findings in a sample of 1242 Swedish adolescents ranging from $7^{th}$ to $10^{th}$ grade. Students in this study were asked to nominate four "Very Important Persons" (VIPs) with whom they talked with, hung around with, or engaged in other activities. Students could nominate peers from within or outside of school. In addition, participants were asked about the nature of their relationship with each VIP, including how they met and where they spent their time together. This study found that individuals with the highest levels of antisocial behavior were more likely to nominate VIPs with whom they met in their neighborhood (instead of school), and with whom they interacted with regularly outside of school.

While all three studies suggest that antisocial students (particularly boys) are more likely to form friendships with neighborhood friends, the findings from Eckert (1989) and Dishion et al. (1995) suggest that antisocial peers not only meet outside of school, but they also tend to affiliate with these peers during school. However, the work of Kiesner et al. (2004) suggests that students with higher levels of antisocial behavior report meeting and interacting outside of school instead of during school. Also, there is some disagreement

between Eckert and Dishion et al. as to why antisocial students are more likely to affiliate with familiar neighborhood and community peers during school. Eckert suggests that antisocial students chose to affiliate with familiar neighborhood peers during school because their goals were at odds with the goals of the school which in turn made them less willing to use the school as a place to establish friendships. However, Dishion et al. argue that affiliating with familiar peers is not due to a lack of school engagement; rather antisocial students may have greater difficulty forming new and meaningful friendships. Dishion et al. suggest that students with higher levels of antisocial or deviant behavior may have trouble forming new friendships when they transition to new situations, such as middle school. Therefore they may seek out arbitrary friendships with familiar peers even if they do not have as much in common. The findings from Nash may support this conclusion because this study found that boys who formed peer groups with familiar peers often did so even when there was little similarity between the members of the group.

Although there are some differences in the findings across these studies (possibly due to different methodological approaches), these findings suggest that something has been overlooked in the study of peer familiarity, particularly how antisocial or deviant youth may differentially affiliate with familiar and unfamiliar peers. If students with higher levels of aggressive or antisocial behavior are more likely to affiliate with familiar peers this may explain why some boys in the Nash (1973) study were more likely to affiliate with previously familiar peers while others became friends with new and unfamiliar peers. Unfortunately, this study did not explore the possibility that antisocial behavioral characteristics may have played a role in this observed difference between the two groups of boys. This limitation was also seen in the Hardy et al. (2002) study. Hardy et al. found that students generally nominate

the same number of familiar peers from elementary school as friends across the first year of middle school. However, they only explored gender differences and the impact of elementary school size, but not behavioral characteristics such as levels of aggression or antisocial behavior. The findings from Eckert (1989), Dishion et al. (1995), and Kiesner et al. (2004) suggest that if Hardy et al. included antisocial behavioral characteristics in their model, they may have detected differences between antisocial and non-antisocial students on friendship nominations of familiar and unfamiliar peers.

Although there is a clear need to address the relationship between aggression and affiliation with familiar peers, there is also a need to address a distinction that has emerged in the developmental literature between physical or overt forms of aggression and more subtle forms of aggression referred to as indirect, relational, or social aggression (Xie, Cairn, et al., 2002). Social aggression, unlike physical aggression, is almost always non confrontational or involves concealed actions. These actions include such behaviors as gossiping, social ostracism, spreading rumors, or character defamation (Xie, Swift, Cairns & Cairns, 2002). One limitation of the studies cited in this review is that aggression was defined as a physical act without consideration of the more covert forms of aggression.

During the transition to middle school there is an initial increase in levels of physical aggression, particularly among boys (Pellegrini & Bartini, 2001; Pellegrini & Long, 2002). Over time there is a decrease in acts of physical aggression. Pellegrini and colleagues suggest that this increase in aggression at the beginning of middle school may be an attempt on the part of students to reestablish one's status or to establish dominance in the peer hierarchy. Once issues of dominance and status are reconciled, there is a decline in aggressive acts as peers attempt to maintain ties with one another. Others have argued that because there is a

strong relationship between social aggression and peer status, particularly perceived popularity, peers may also use social aggression to obtain a higher standing in the new school social hierarchy (Cillessen & Mayeux, 2007).

Although there is a substantial body of literature documenting the relationship between physical aggression (including perpetrators and victims of physical aggression) and peer relationships, only recently has attention been given to social, relational, or indirect aggression (Underwood, 2003). Within this developing body of literature there are several contradictory findings that have yet to be resolved. For example, there is considerable disagreement on gender differences and social aggression. Some studies have found that girls are more relationally aggressive than boys (e.g., Crick & Grotpeter, 1995), some found no gender differences (e.g., Pakaslahti & Keltikangas-Järvinen, 2000), and still others found that boys are more socially aggressive than girls (e.g., Tomada & Schneider, 1997). These contradictions may have more to do with the proportional use of physical and social aggression (Putallaz, Grimes, Foster, Kupersmidt, Coie, et al., 2007). Putallaz et al. suggest that girls are more likely to use social aggression alone whereas boys use physical and social aggression more equally. These findings highlight one of the controversies within the developing field of social aggression as well as reaffirm the need to explore both physical and social aggression and the extent to which boys and girls use both forms of aggression.

An additional contradiction within the literature directly relevant to the current study has to do with the peer relationships of socially aggressive peers. On the one hand, there is a positive relationship between social aggression and perceived popularity. Girls who use social aggression are more likely to be perceived as popular (Xie, Cairns, et al., 2002). This is not to say that they are liked more by their peers (i.e., Parkhurst & Hopmeyer, 1998).

However, they are more likely to be more prominent members of the peer network or have high status among peers (Cillessen & Mayeux, 2004). This finding is complicated by the fact that socially aggressive peers are also more likely to be rejected by classmates (Underwood, 2003). Taken together, these findings suggest that socially aggressive students may use covert methods at increasing their social standing, but in the end they may be rejected by many of the peers they are trying to coerce or control (Archer & Coyne, 2005).

These ongoing contradictions and unanswered questions within the developing area of social aggression research make it especially important to consider physical and social aggression separately in the current investigation. If students do in fact use physical and social aggression to establish peer status or dominance within the peer hierarchy it is possible that each form of aggression may differentially impact peer group affiliations, particularly affiliations with familiar peers. For example, both physically and socially aggressive adolescents are more likely to be rejected by peers (Dodge, Coie, & Lynam, 2006). It is possible that both socially and physically aggressive students are most likely to be rejected by new and unfamiliar peers that they encounter at middle school. These students may avoid being rejected by unfamiliar peers by affiliating with the more familiar peers that they knew prior to the transition.

If aggressive students affiliate with familiar peers early in the transition to middle school, the type of aggression used could impact these affiliations over time. For example, socially aggressive students may use gossip, threats of ostracism, or other socially aggressive tactics to maintain the cohesion of the group. The nature of gossip, particularly when it is leveled against peers outside of the group, may help maintain the group (Eder & Enke, 1991). That is, gossiping about peers outside the group may create an 'us against them' mentality

(Eckert, 1990; Gottman & Mettetal, 1986). This position is supported by evidence that socially aggressive students tend to have more exclusive friendships and enjoy a greater level of intimacy and personal disclosure among these friends (Grotpeter & Crick, 1996). Although no studies to date have examined peer familiarity among socially aggressive students, the evidence presented in this review suggests that if socially aggressive students affiliate with familiar peers at the beginning of middle school, these students may attempt to secure relationships with these familiar peers. That is, they will use covert tactics to keep these familiar peers from leaving the group.

## The Present Study

The current investigation will provide a number of improvements over previous studies examining the role of familiarity and the transition to middle school. The present study will replicate certain aspects of previous studies, particularly Hardy et al. (2002), which was the only investigation to focus on the role of familiarity and the transition to middle school. However, there are three important features of this investigation which are unique and can add to the peer affiliation literature: First, this study will be the first to examine the relationship between familiarity and peer networks instead of looking at friendships. Nash (1973) was the only study that examined peer groups while Dishion et al. (1995), Hardy et al., and Kiesner et al. (2004) used some form of friendship nomination procedure. Two potential limitations arise from studies based on friendship nomination procedures: First, students may nominate peers with whom they would like to be friends, but are not actually friends (Cairns & Cairns, 1994). One way to reduce this bias is to only include reciprocal friendship nominations. This provides greater validity for identifying dyadic friendships, yet this information is limited because friendships are often embedded within a larger network of

peer affiliations. The current investigation will consider all of the peers with whom an individual affiliates with, not just one or two close friends. This does not suggest that friendship studies are not a valid source of information for investigators, rather, the peer network perspective can add to this investigation because it addresses group level processes salient to adolescent peer dynamics (Cairns & Cairns, 1994).

A second innovative feature of this study is that extends the work of Hardy et al. (2002) by examining peer affiliation patterns among students who are either physically or socially aggressive. The literature in this review suggests that behavioral characteristics, particularly aggression and antisocial behavior, are related to where peers meet and the level of affiliation within and outside of school. The work of Eckert (1989), Dishion et al. (1995), and Kiesner et al. (2004) all point to possible differences between antisocial and more prosocial students on affiliation patterns with familiar peers. However, none of these studies examined this pattern across the transition to middle school. The two studies that did examine affiliation patterns with familiar peers across the transition to middle school (i.e., Nash (1973) and Hardy et al.), failed to explore the possible role that these behavioral characteristics may play in these peer affiliations, A third innovation of this investigation will be the use of both teacher and student reports to identify aggressive peers, which is an important feature of this investigation given that teachers and students often view aggressive acts from different vantage points (Pakaslahti & Keltikangas-Järvinen, 2000).

*Hypotheses*

This investigation will use existing data from two rural middle schools to address the following questions:

**1) Are students more likely to affiliate with familiar peers (those who attended the same elementary school) during the fall semester of the first year of middle school (6th grade) than during the spring (6th) and fall semester of 7th grade?**

Overall, it is expected that students will be more likely to affiliate with a higher proportion of familiar peers at the beginning of middle school, but as the school year progresses there will be a general decline in affiliations with familiar peers.

**2) Is there a difference between girls and boys on affiliation patterns with familiar peers and does this pattern change across the first year and a half of middle school?**

It is hypothesized that boys will affiliate with a higher proportion of familiar peers at the beginning of the semester, but that over time the proportion of familiar peers within peer groups among boys will remain relatively stable, while girls will experience a significant decline in affiliations with familiar peers over time.

**3) Are students with higher levels of physical or social aggression more likely to affiliate with familiar peers than unfamiliar peers and does this change across the first year and a half of middle school?**

It is hypothesized that both aggressive and non-aggressive students will affiliate with the same proportion of familiar peers during the first semester of middle school because both groups will be more likely to seek out familiar faces early in the semester before they have had opportunities to assess the new and unfamiliar peers around them. However, it is expected that as the year progresses, those students who are identified as aggressive will continue to affiliate with a higher proportion of familiar peers than non-aggressive students.

**4) Is there a relationship between gender, physical and social aggression, and affiliation with familiar peers across the transition to middle school?**

At this time there is insufficient research data to generate a hypothesis on whether there is a relationship between gender and aggression with regards to affiliations with familiar peers. However, this investigation will explore the possibility of a relationship between these two factors across the first year and a half of middle school.

# CHAPTER III

# METHODS

This investigation used data from an ongoing longitudinal study examining the behavioral, academic, and the social adjustment of rural youth as they transition from childhood to adolescence. Participants were followed as they made the transition from six smaller feeder elementary schools (grade 5) to two larger middle schools (grade 6). Data used in the current analysis were collected at three time points: Time 1 collection occurred during the fall semester of the participants' 6th grade year. Time 2 collection occurred near the end of the spring semester of the participants' 6th grade year. Time 3 collection occurred in the middle of the fall semester of the participants' 7th grade year.

## *Participating Schools*

Participating schools were situated in rural communities in the Appalachian region of the U.S. Data were collected in two rural middle schools that participated in the study at all three time points. Each middle school served as a hub for three feeder elementary schools. There was considerable variability in the size of each feeder elementary school in the study. Two of the participating elementary schools had only one 5th grade class, one elementary school had two 5th grade classes, one had three 5th grade classes, one had five 5th grade classes, and the largest elementary school had six 5th grade classes (Table 1).

Three sources of publicly available data were used to provide additional background information on the middle schools in this study. These sources were: the U.S. Census Bureau, the U.S. Department of Education's Institute of Education Sciences Common Core of Data

(CCD), and the state department of education for the schools in this study. If data were not available at the school level then district or county level data were reported. Although each school served a different community, both schools were located within the same county.

The two schools in this study were designated as located in small towns (Nation Center for Education Statistics, 2008). Every school in the U.S. has a locale code designation based on geographic location and population attributes such as density for the area in which the school is located. The total population of both communities was 17,798 according to the 2000 U.S. Census. There are several notable characteristics of the communities in this study. The median age of this county was 40.2 years which is slightly higher than the U.S. median (35.3). In addition, this county was largely European American or White compared to the national average (92.6% vs. 75.1%). Residents of this county also had a lower percentage of high school graduates than the national average (72.1% vs. 80.4%) as well as a lower percentage of college graduates (13.8% vs. 24.4%). Also, the median family income for this county was well below the national average (33,524 vs. 50,046).

Data from the U.S. Department of Education's Common Core of Data were used to compare the study middle schools to all other middle schools within the U.S. Schools were included in this sample if they shared two characteristics with the study schools: 1) served students in grades 6-8 and 2) were considered regular education school (i.e., not alternative schools or schools that provide specialized services). Results indicate that the two study schools had slightly smaller enrollments than the national average (579 vs. 679), had fewer minority students (15.9% vs 39.4%), and had a greater percentage of students receiving free and reduced lunches (60.2% vs. 43.6%). The schools in this study had an average student to teacher ratio that was slightly lower than the national average (12.9 vs. 16.2). The study

schools were also compared to a restricted sample of middle schools that were also designated as located within a small town. Results indicate that the study schools also had a lower percentage of minority students, greater percentage of students receiving free and reduced lunch, as well as a slightly lower student to teacher ratio than other small town schools. However, the schools in this study were slightly larger than other small town schools (579 vs. 487).

State department of education statistics were used to examine school achievement scores. No data were available to compare study schools to a national sample. These schools were compared to all other middle schools within the state on end of course state tests in English, mathematics, science, and social studies taken at the end of 2005 and 2006 school years. The study schools had scores similar to the state average on English (79.6 vs. 80.5) and science (82 vs. 82.7) and slightly lower scores on mathematics (68.7 vs. 73.4) and social studies (67.1 vs. 71). No school discipline records were available to compare these schools to other schools in the state or to national averages.

*Participants*

The sample included 171 participants (75 boys and 96 girls). Participants were included if they were consented, were members of a peer group throughout the study, and had available teacher or student reported data. Informed consent was obtained from 60% of the parents and students who were invited to participate. In addition to student data, schools provided student enrollment information to track the students. Teachers were asked to complete behavioral measures for consented participants. Teacher surveys and peer behavioral characteristic measures at Time 1 (fall of $6^{th}$ grade) were used to identify

aggressive students. Teacher surveys were obtained for 88% of the consented participants at Time 1. Students without teacher surveys at Time 1 were dropped from the analysis.

*Procedure*

Student surveys were conducted in a group administration format. Students were separated as much as possible to reduce the likelihood that they would share answers. Before completing the survey, participants were told that their answers would be kept confidential. Participants were also informed that participation was voluntary and that they could stop at any time. During the survey an administrator read all instructions and questions aloud while trained assistants provided mobile monitoring to assist participants as needed. Participants were asked to complete questions about themselves, their peers, and their school. During student surveys, questionnaires were distributed to teachers. Teachers were asked to complete measures about the social, emotional, and behavioral functioning of each participant. Students were given a small school item for completing the survey. Teachers received monetary compensation for completing a survey for each consented participant.

*Measures*

*Peer group networks.* Peer group affiliations were assessed using the Social Cognitive Mapping (SCM) procedure (Cairns, Perrin, & Cairns, 1985). This procedure is based on the assumption that each participant is able to observe and understand his or her social world even if he or she is not an active participant. For this procedure participants were asked, “Are there kids in your grade who hang around together a lot? If so, who are they?” Students were told to nominate from free recall as many groups as they could think of from within their grade. Also, they were told that they could include themselves in a group if they were members of a group. Three-week test-retest reliability is for this measure was high ($\alpha = .90$),

suggesting that the measure yielded similar results over a short interval. Validity has been established through observational studies that have found that students interact four times as frequently with members of their SCM generated group as compared to peers outside of their SCM group (Cairns, et al., 1985; Gest, Farmer, Cairns, & Xie, 2003).

Information gathered from the survey was analyzed using the SCM 4.0 computer program (Leung, 1996) following the procedures outlined by Cairns, Gariépy, Kindermann, and Leung (1996). This program aggregated the data from the aforementioned probe by constructing three matrices. First, a *recall matrix* was generated by listing all of the groups named by each participant. From the recall matrix a second *co-occurrence matrix* was generated. The co-occurrence matrix listed the number of times that each student was named to a peer group with every other student. This matrix provided an affiliative profile for each student. It was expected that students who are in the same peer group would have similar profiles, that is, they affiliate with the same people. Therefore, a third matrix, a *correlational matrix*, was generated. The correlational matrix correlated the affiliative profile of each student with the profile of every other student. Students whose profiles were significantly correlated ($r \geq .40$) with at least 50% of the members of a group were considered to be in the same group. To ensure reliability and validity, a 50% participation rate has been established as a standard for using this procedure (Cairns, Leung, Buchanan et al., 1995).

*Aggression.* Ratings of student aggression were obtained from both teacher and student reports. Teachers completed several Likert-type questions about each participant's use of physical and social aggression. Students were given descriptions of physically and socially aggressive acts and asked to nominate peers who fit these descriptions.

*Teacher-Reported Aggression.* To obtain physical aggression information, teachers completed the Interpersonal Competence Scale – Teacher (ICS-T) for each consented student. The ICS-T is an 18-item questionnaire consisting of 7-point Likert scales (Cairns, Leung, Gest, & Cairns, 1995). The ICS-T yields composite scores on the numerous subscales. The aggression subscale includes the following items: "always argues," "gets in trouble," and "always fights". Three-week test-retest reliability coefficients for the ICS-T are moderately high (i.e., .80-.92), and median test-retest reliability across the factors is .81 for girls and .87 for boys. One-year coefficients are moderately strong (i.e., .40-.50) (Cairns, Leung, Gest, et al., 1995). The ICS-T has convergent validity with direct observation, student records (i.e., grades, discipline reports), and peer nomination measures (Cairns & Cairns, 1994; Cairns, Leung, Buchanan, et al., 1995; Rodkin, Farmer, Pearl, & Van Acker, 2000). Composite factor scores are the unweighted average rating across items forming each subscale. Items are positively coded so that a higher score reflects increased levels of aggression.

To obtain social aggression information, teachers also completed the Teacher Ratings of School Adjustment Scale (TASS). This is an 8-item questionnaire consisting of 7-point Likert scales. This measure included one item that was used to identify socially aggressive students: "Frequently manipulates friends".

*Student-Reported Aggression.* Peer interpersonal ratings were used to determine classmates' perception of peers' social and behavioral characteristics, including characteristics related to physical and social aggression. Students were asked to nominate, from free recall, up to three students who best fit descriptors for specific items. They were told that they could nominate themselves and that they could nominate the same person for more than one item. Four descriptors were used for physical aggression: *Disruptive:* This

person has a way of upsetting everything when he or she gets into a group—doesn't share and tries to get everyone to do things their way. *Starts fights.* This person starts fights. This person says mean things to other kids or pushes them, or hits them. *Bully.* This person is always hurting or picking on others. *Gets in trouble.* This person doesn't follow the rules, doesn't pay attention, and talks back to the teacher. One item was used for social aggression. That item is: *Starts rumors.* This person gossips and says things about others. This person is good at causing people to get mad at each other.

Three-week test-retest reliability with individual items ranged from .72-.93. These items are identical with, or similar to, peer assessments used by other investigators (e.g., Cantrell & Prinz, 1985; Coie, Dodge, & Coppotelli, 1982; Masten, Morison, & Pellegrini, 1985). The total number of nominations that participants received on each peer-assessment item was divided by the total number of possible nominators (i.e., all participants in the grade). Because the denominator was the total number of participants in the grade, the resulting proportions were small. In order to make mean differences more interpretable, these proportions were multiplied by 1000.

*Data Preparation*

*Aggressive Participants.* The current investigation used the aggression subscale from the teacher-reported ICS-T to identify physically aggressive students. Socially aggressive students were identified using the individual item: "Frequently manipulates friends" from the teacher-reported TASS. Teacher-reported aggressive students were identified following procedures from previous studies (Farmer, Leung, Pearl, Rodkin, Cadwallader, & Van Acker, 2002). The aggression subscale from the ICS-T and the individual TASS item was standardized in two ways: (a) within gender and (b) within gender and rater. Participants

were classified as *physically aggressive* if their gender Z-score was greater than or equal to +.50, and their gender and classroom Z-score were greater than or equal to +.0. Participants who did not meet these criteria were classified as *non-physically aggressive*. These procedures were repeated to identify socially aggressive students and non-socially aggressive students. Although particular raters might have a tendency toward one end of the scale or other, simply standardizing within rater may mask genuine differences across classrooms. The goal of this classification scheme was to retain between-rater differences in aggression while taking into consideration within-rater biases.

Physically and socially aggressive students were identified from the peer reported behavioral descriptions in a way similar to the teacher measures. The physical aggression items from the peer reported behavioral descriptions were averaged. This score was standardized by gender. Participants were classified as physically aggressive if their gender Z-score was greater than or equal to +.50. This procedure was repeated to identify socially aggressive student. One item was used for those students, thus the scores were not averaged.

*Familiarity.* Each member of the middle school peer group was coded for previous familiarity with the other members of the peer group using procedures outlined in previous studies (Hardy et al., 2002). Those participants who attended the same elementary school prior to middle school were coded as *previously familiar peers*. Those participants who attended different elementary schools, and presumably did not have contact prior to middle school, were coded as *previously unfamiliar peers*.

*Peer Group Composition.* In order to assess the degree of within-group familiarity, data were prepared for analysis in three steps: First, peer groups were identified using the SCM procedure. Second, each participant was assigned two values based on the composition

of his or her respective peer group: *number of previously familiar peers* and *number of previously unfamiliar peers*. Next, an *observed peer group familiarity proportion score* was calculated for each participant. This score is the proportion of individuals within a participant's peer group who attended the same elementary school as the participant. This score was calculated by dividing the *number of previously familiar peers* by the sum of the *previously familiar peers* and *previously unfamiliar peers* (i.e., total number of members of the peer group). For example, if a participant was a member of a peer group with five members, three of whom were from the same elementary school, this participant's *observed peer group familiarity proportion score* would be 0.6 (3/5).

*Dependent Variable.* In order to determine whether the observed peer group familiarity proportion score was significantly greater than expected by chance, one additional piece of information was required: the number of students in the peer network who attended the same elementary school as the participant. If the participant was surrounded by a large number of familiar peers it would be expected that his or her peer group would contain a larger proportion of familiar peers due to the availability of a larger pool of familiar peers. If on the other hand, the participant had few familiar peers in the peer network it would be expected that his or her peer group would contain fewer familiar peers. An *expected peer group familiarity proportion score* was created for each participant. This score would indicate the proportion of familiar peers one would expect to observe within a student's peer group given the number of available familiar and unfamiliar peers for that individual. For example, if a participant attends a grade in middle school that is composed of 30 familiar peers and 70 unfamiliar peers, his or her expected peer group familiarity proportion score

would be 0.30 (30/100). That is, it would be expected that one-third of the members of his or her peer group would have attended the same elementary school as the participant.

Because each participant will had a unique observed and expected score, the dependent variable was a ratio of the observed score to the expected score. For example, if a participant had an observed peer group familiarity proportion score of 0.6 and an expected score of 0.3 the dependent variable for this participant would be a ratio of 2:1 (0.6/0.3). If the ratio equaled 1 then the expected value was equal to the observed value. If the ratio was greater than 1 then the observed value was greater than expected. If the ratio was less than 1 then the observed score was less than expected.

The ratio of the observed to expected familiarity score served to ensure that changes in group familiarity proportion scores were not influenced by changes in the availability of peers. However, there was one limitation associated with this ratio. If there were significant increases or decreases in this familiarity ratio over time it will be important to account for this change. For example, if there was a decrease in the peer familiarity ratio it could be due to familiar peers leaving the peer group or an increase in the number of unfamiliar peers entering the peer group. Either scenario would create a decrease in the peer familiarity ratio. If significant differences were found either between groups or over time, follow-up analysis were conducted using the number of familiar peers within group and number of unfamiliar peers within group as dependent variables.

# CHAPTER IV

# RESULTS

## *Overview*

The results of this investigation are presented in five sections. The first section examines descriptive statistics including: number and size of peer groups, composition of the groups with regards to gender, and the overall proportion of familiar peers within each group. This section will also contain student and teacher reported aggression information. Each subsequent section will address the three hypotheses put forth for this investigation. The second section will address the first hypothesis that students will affiliate with a significantly greater proportion of familiar peers than expected at the beginning of middle school, but that there will be a decline in affiliations with familiar peers over the three semesters. The third section will explore gender differences in peer affiliation patterns with familiar peers across the transition to middle school. The fourth section will address differences among physically and socially aggressive students in peer affiliation patterns. The fifth section will explore the relationship between gender and aggression on affiliations with familiar peers.

The specific hypotheses put forth in this investigation were explored using two analytic strategies. First, because the dependent variables in this analysis were quantitative in nature and were equally spaced across the three semesters, trends that may emerge over time were analyzed. In this case it is more appropriate to use repeated measures analysis of variance with polynomial contrasts than paired-samples *t* tests to detect significant trends

over time (Green & Salkind, 2005; Howell, 2003). However, because there are hypotheses regarding gender differences and differences among aggressive and non-aggressive students at particular time points, it was necessary to employ a series of univariate and multivariate ANOVAs to test for significant group differences at the various time points.

*Descriptive Statistics*

*Peer Groups.* Participants in this study included 171 students who were members of a peer group at all three time points (fall 6th, spring 6th, and the fall 7th grade). Fifty-nine students were not members of a peer group (isolate) at some point during the study (27 at Time 1, 13 at Time 2, 16 at Time 3). Two students were classified as isolated students at Times 1 and 2 while one student was classified as isolated at Times 2 and 3.

The Social Cognitive Map (SCM) procedure yielded 48 groups at Time 1, 42 groups at Time 2, and 44 groups at Time 3. On average, participants in this investigation had 5.29 members in their peer group (not including the participant), however results of a one-way repeated measures ANOVA indicate a significant time effect for group size, Wilk's $\Lambda = .96$, $F(2,169) = 3.18$, $p = .04$, multivariate $\eta^2 = .04$. Follow-up polynomial contrasts indicated a non-significant linear trend, but higher-order polynomial contrasts indicated a significant quadratic trend, $F(1,170) = 6.39$, $p < .01$, partial $\eta^2 = .04$. These results and an inspection of the mean peer group size at each time point (Table 2) suggest that there was a slight increase in peer group size from fall of 6th grade to spring of 6th grade and then slight decrease between spring of 6th grade and fall of 7th grade.

*Aggression Groups.* Teachers completed peer aggression items for 126 participants. Based on the classification system described, 31 physically aggressive students and 95 non-physically aggressive students were identified. Thirty-seven socially aggressive students and

89 non-socially aggressive students were also identified. Students rated as physically aggressive by teachers had a mean aggression score of 3.73 (SD = 1.05) whereas non-aggressive students had a mean aggression score of 1.33 (SD = .49). Students rated as socially aggressive by teachers had a mean aggression score of 4.65 (SD = .98) whereas non-aggressive students had a mean aggression score of 1.60 (SD = .69).

Students provided peer behavioral characteristic nominations for 171 peers. Application of the classification procedure resulted in 25 physically aggressive students and 146 non-physically aggressive students as well as 28 socially aggressive students and 143 non-socially aggressive students. On average, students rated as physically aggressive by peers received 3.75 (SD = 2.86) nominations as being physically aggressive. The majority of non-physically aggressive students received zero nominations. On average, students rated as socially aggressive by peers received 4.77 (SD = 2.72) nominations as being socially aggressive. The majority of non-socially aggressive students received zero nominations.

Table 3 provides a comparison of student aggression status by nomination method (teacher vs. peer report). Inspection of this table suggests that there is only moderate overlap between those identified as physically or socially aggressive by the teacher versus peers. This finding is not surprising given that other studies have found a moderate to high correlation between teacher and student reports of aggressive students (Huesmann, et al., 1994).

*Hypothesis 1: Affiliations with Familiar Peers Across the Middle School Transition*

The first hypothesis was that students would be more likely to affiliate with previously familiar peers at the beginning of middle school, but that there would be a decline in affiliations with familiar peers over time. A series of one-sample *t* tests were conducted to evaluate whether the peer familiarity ratio scores were significantly different from 1 at each

time point. In a one-sample *t* test the dependent variable is compared to a constant. The constant typically represents a midpoint on a test variable or the value that would be expected by chance (Green & Salkin, 2005). In this case the dependent variable is a ratio of the observed peer familiarity proportion score to the expected peer familiarity proportion score. If there is no difference between the observed score and the expected score then the ratio would be 1. Results of the first one-sample *t* tests at Time 1 indicated that the peer familiarity ratio of 1.74 (SD = 1.26) was significantly greater than 1, $t(170) = 7.68$, $p < .01$. Additionally, the peer familiarity ratio at each subsequent time point was significantly greater than expected by chance, Time 2, $t(170) = 5.03$, $p < .01$, Time 3, $t(170) = 3.61$, $p < .01$.

Although it was found that students were more likely to affiliate with a greater proportion of familiar peers than expected by chance at all three time points, visual inspection of the means suggest that there was a steady linear decline in peer affiliation with familiar peers (Figure 1). Results of a one-way repeated measures ANOVA indicated a significant time effect, Wilk's $\Lambda = .95$, $F(2,169) = 4.68$, $p < .01$, multivariate $\eta^2 = .05$. Follow-up polynomial contrasts indicated a significant linear trend with the peer familiarity ratio score decreasing over time, $F(1,170) = 9.41$, $p < .01$, partial $\eta^2 = .05$. Higher order polynomial contrasts were not significant.

In order to explore whether this linear decline was associated with an increase in the number of unfamiliar peers entering the group or an increase in the number of familiar peers leaving the group, a series of one-way repeated measures ANOVAs were conducted using number of familiar and unfamiliar peers within peer group as the dependent variable. Results of these one-way repeated measures ANOVAs revealed a significant linear decline in the number of familiar peers within peer groups over time, $F(1,170) = 6.94$, $p < .01$, partial $\eta^2$

= .04. Results also indicated that there was an increase in the number of unfamiliar peers within peer groups over time. Polynomial contrasts revealed that this trend was both linear and quadratic, Linear: $F(1,170) = 13.72$, $p < .01$, partial $\eta^2 = .08$; Quadratic: $F(1,170) = 9.46$, $p < .01$, partial $\eta^2 = .05$. Inspection of the means (see Table 2) suggest that there was a large increase in the number of unfamiliar peers entering peer groups between Time 1 and Time 2, but from Time 2 to Time 3 there was a slight decline in the number of unfamiliar peers within peer groups.

*Hypothesis 2: Gender Differences and Affiliations with Familiar Peers*

It was hypothesized that boys would affiliate with a significantly greater proportion of familiar peers than girls at Time 1, but that girls would show a greater decline in affiliations with familiar peers over time. Contrary to the hypothesis, there was not a significant difference between the proportion of familiar peers within peer group for boys and girls at Time 1, $F(1,169) = .82$, $p = .37$. While there was not a significant difference between boys and girls on the peer familiarity ratio, inspection of Table 2 suggests that boys had a greater number of unfamiliar peers within peer group than girls at Time 1. This difference between boys and girls was found to be statistically significant, $F(1,169) = 13.43$. $p < .01$. Trend analysis using a one-way repeated measures ANOVA indicated a significant time and gender interaction, Wilk's $\Lambda = .92$, $F(2,169) = 7.76$, $p < .01$, multivariate $\eta^2 = .09$. Trend analysis supported the hypothesis that girls experienced a greater decline in the proportion of familiar peers within peer groups than boys. For girls, polynomial contrasts revealed a significant linear decline in the proportion of familiar peers within peer group across the three time points, $F(1, 95) = 26.01$, $p < .01$, partial $\eta^2 = .22$. Higher-order polynomial contrasts revealed a significant quadratic trend, $F(1,95) = 8.19$, $p < .01$ partial $\eta^2 = .08$. These results indicated

that although there was a linear decline among girls, the decline was greatest between Time 1 and Time 2, and was followed by a slight decline between Time 2 and Time 3. Although Figure 2 suggests that there was a slight increase for boys at Time 2 followed by a decline at Time 3, trend analysis indicated that there was not a significant trend for boys, Wilk's $\Lambda = .95$, $F(2,73) = 2.05$, $p = .14$, multivariate $\eta^2 = .05$

Follow up analysis for girls found that this decline in the peer familiarity ratio was associated with both a linear decline in the number of familiar peers within peer group, $F(1,95) = 5.17$, $p = .03$, partial $\eta^2 = .05$, as well as a linear and quadratic increase in the number of unfamiliar peers entering peer groups over time, Linear: $F(1,95) = 27.38$, $p < .01$, partial $\eta^2 = .22$; Quadratic: $F(1,95) = 22.98$, $p < .01$, partial $\eta^2 = .20$ (Figure 3). These findings suggest that girls not only tended to lose familiar peers over time, but that from Time 1 to Time 2 they experienced a significant increase in the number of unfamiliar peer affiliates. This increase in unfamiliar peers resulted in girls having more unfamiliar peers than boys at Time 2, however the difference was not significant, $F(1,169) = 2.94$, $p = .088$ (See Figure 3). Between Time 2 and Time 3 there was a decline in the number of unfamiliar peers within group for girls that was significant.

*Hypothesis 3: Aggression Group Differences on Affiliations with Familiar Peers*

It was hypothesized that both aggressive and non-aggressive students would affiliate with a comparable proportion of familiar peers during the first semester of middle school, but that those identified as physically or socially aggressive would continue to affiliate with a higher proportion of familiar peers than non-aggressive students. The results of this hypothesis are presented in four sections. The first two sections examined physical and social aggression as reported by teachers. The last two sections examined physical and social

aggression as reported by peer nomination procedures. The degree of correspondence between teacher and peer reported results will be considered later.

*Teacher Reported Physical Aggression.* Consistent with hypothesis, both physically aggressive and non-aggressive students (M = 1.81 vs 1.72) affiliated with a comparable proportion of familiar peers at Time 1, $F(1, 125) = .08$, $p = .78$ (Figure 4). Results of a one-way repeated measures ANOVA suggested that there was a significant time effect for non-physically aggressive students, Wilk's $\Lambda = .82$, $F(1,94) = 9.91$, $p < .01$, multivariate $\eta^2 = .18$. Follow-up polynomial contrasts suggest that there was a linear decline in the peer familiarity ratio for non-aggressive students, $F(1, 94) = 19.60$, $p < .01$, partial $\eta^2 = .17$. No significant time effect was found for physically aggressive students, Wilk's $\Lambda = .96$, $F(1,30) = .60$, $p = .55$, multivariate $\eta^2 = .04$. While no significant time effect was found for physically aggressive students, a series of one-way ANOVAs at Time 2 and 3 suggest that there is not a statistically significant difference between physically aggressive and non-aggressive students at Time 2, $F(1,125) = .05$, $p = .83$, or Time 3, $F(1,125) = .44$, $p = .51$.

*Teacher Reported Social Aggression.* Consistent with hypothesis, both socially aggressive and non-aggressive students (M = 1.58 vs 1.81) affiliated with a comparable proportion of familiar peers at Time 1, $F(1, 125) = 3.2$, $p = .08$ (Figure 5). Results of a one-way repeated measures ANOVA suggest that there was a significant time effect for non-socially aggressive students, Wilk's $\Lambda = .91$, $F(1,88) = 4.33$, $p = .02$, multivariate $\eta^2 = .09$, but not for socially aggressive students, Wilk's $\Lambda = .88$, $F(1,36) = 2.34$, $p = .11$, multivariate $\eta^2 = .12$. Follow-up polynomial contrasts suggest that there was a linear decline in the peer familiarity ratio for non-aggressive students, $F(1, 88) = 8.75$, $p < .01$, partial $\eta^2 = .09$. While no significant time effect was found for socially aggressive students, a series of one-way

ANOVAs at Time 2 and 3 suggest that there is not a statistically significant difference between socially aggressive and non-aggressive students at Time 2, $F(1,125) = .041$, $p = .52$, or Time 3, $F(1,125) = 1.93$, $p = .17$.

*Student Reported Physical Aggression.* Consistent with hypothesis, both physically aggressive and non-aggressive students (M = 1.86 vs 1.72) affiliated with a comparable proportion of familiar peers at Time 1, $F(1, 170) = .25$, $p = .62$ (Figure 4). Results of a one-way repeated measures ANOVA suggest that there was a significant time effect for non-physically aggressive students, Wilk's $\Lambda = .96$, $F(1,145) = 3.41$, $p = .04$, multivariate $\eta^2 = .05$. Follow-up polynomial contrasts suggest that there was a linear decline in the proportion of familiar peers within peer group for non-aggressive students, $F(1, 145) = 6.82$, $p < .01$, partial $\eta^2 = .05$. No significant time effect was found for physically aggressive students, Wilk's $\Lambda = .89$, $F(1,24) = 1.41$, $p = .27$, multivariate $\eta^2 = .11$. While no significant time effect was found for physically aggressive students, a series of one-way ANOVAs at Time 2 and 3 suggest that there was not a statistically significant difference between physically aggressive and non-aggressive students at Time 2, $F(1,125) = .054$, $p = .82$, or Time 3, $F(1,125) = 1.67$, $p = .20$.

*Student Reported Social Aggression.* Contrary to the hypothesis, socially aggressive students affiliated with a significantly greater proportion of familiar peers than non-aggressive students at Time 1 (M = 2.19 vs. 1.65), $F(1,170) = 7.56$, $p < .01$ (Figure 5). At Time 2 socially aggressive students continued to affiliate with a significantly greater proportion of familiar peers than non-aggressive students, $F(1, 170) = 4.29$, $p = .04$, but by Time 3 this difference was not significant, $F(1, 170) = .57$, $p = .45$. While socially aggressive students affiliated with a significantly greater proportion of familiar peers at Times 1 and 2,

these students experienced a significant linear decline across the three time points, $F(1, 27) = 5.98$, $p = .02$, partial $\eta^2 = .18$. No time trend was found for non-socially aggressive students, Wilk's $\Lambda = .97$, $F(1,142) = 1.26$, $p = .11$, multivariate $\eta^2 = .03$.

Follow up analysis were performed to determine if these significant findings for socially aggressive students at Time 1 and 2 were due to these students having fewer unfamiliar peers within group or a greater number of familiar peers within group. A series of ANOVAs at Times 1 and 2 failed to find a significant difference between socially aggressive students and non aggressive students on number of familiar or unfamiliar peers within group.

*Gender and Aggression Interactions*

The following analysis examined all gender and aggression interactions that were found. No hypotheses were put forth for this analysis. If interactions were found, follow-up interaction comparisons were performed. The first section addresses findings from teacher reported measures while the second section addresses findings from peer reported measures.

*Gender and Teacher Reported Aggression Interactions.* A series of two-way ANOVAs were conducted at each time point to determine if there was a significant interaction between aggression and gender. The first series of two-way ANOVAs examined the interaction between gender and physical aggression. Results from the teacher reports indicated a gender and physical aggression interaction that was significant at Time 1 only, $F(1,122) = 4.58$, $p = .03$. Follow-up interaction comparisons revealed that there was no difference between non-aggressive boys and girls on affiliation with familiar peers, $F(1, 93) = 1.024$, $p = .31$. However, there was a significant difference between physically aggressive boys and girls, $F(1, 93) = 7.33$, $p < .01$. These results suggest that physically aggressive girls

were more likely to affiliate with a greater proportion of familiar peers than physically aggressive boys at Time 1.

A second series of two-way ANOVAs examined the interaction between gender and social aggression at each time point. Results from the teacher reports indicated a gender and social aggression interaction that was significant at Time 1 only, $F(1,122) = 5.14$, $p = .03$. Follow-up interaction comparisons revealed that there was no difference between non-aggressive boys and girls on affiliation with familiar peers, $F(1,87) = .62$, $p = .43$. However, there was a significant difference between socially aggressive boys and girls, $F(1, 35) = 11.52$, $p < .01$. These results suggest that socially aggressive girls were more likely to affiliate with a greater proportion of familiar peers than socially aggressive boys at Time 1.

*Gender and Student Reported Aggression Interactions.* Parallel analyses were conducted using student reported measures to examine gender and aggression interactions. The first series of two-way ANOVAs examined the interaction between gender and physical aggression at each time point. Results from the students identified as physically aggressive by peers indicated that there was no significant interaction between gender and physical aggression at any time point. Because no significant interactions were found, no follow-up analyses were conducted.

A second series of two-way ANOVAs examined the interaction between gender and social aggression at each time point. The results of these analyses must be interpreted with caution due to the low number of socially aggressive boys (N = 5) that were identified from peer reports. Results from the peer reports suggested a gender and social aggression interaction that was significant at Time 1, $F(1, 167) = 4.01$, $p = .05$, and Time 2, $F(1, 167) = 5.018$, $p = .03$. A significant interaction was not detected at Time 3. Follow-up interaction

comparisons at Time 1 revealed that there was no difference between non-aggressive boys and girls on affiliation with familiar peers, $F(1, 141) = 1.75$, $p = .19$. Also, there was no significant difference between socially aggressive boys and girls at Time 1, $F(1, 26) = 1.05$, $p = .31$. Additional follow-up analysis revealed that there was a significant difference between socially aggressive and non-aggressive boys at Time 1, $F(1, 73) = 5.70$, $p = .02$. These results suggest that socially aggressive boys affiliated with a greater proportion of familiar peers than non-socially aggressive boys (M = 1.54 vs. 3.07). The difference between socially aggressive and non-aggressive girls was not significant at Time 1, $F(1, 95) = .83$, $p = .37$. Follow-up interaction comparisons at Time 2 revealed that there was a significant difference between non-aggressive boys and girls on affiliation with familiar peers, $F(1, 141) = 4.89$, $p = .03$. These results suggest that non-aggressive boys affiliated with a greater proportion of familiar peers than non-aggressive girls at Time 2. There was also a significant difference between socially aggressive boys and girls on affiliations with familiar peers at Time 2, $F(1, 26) = 6.40$, $p = .02$. These results suggest that socially aggressive boys are more likely to affiliate with familiar peers than socially aggressive girls.

# CHAPTER V

## SUMMARY OF RESULTS

The results of this study provide both support and counterevidence for the hypotheses put forth. In addition, these results are further complicated because two parallel analyses were conducted. One set of analyses used teacher reported aggressive students to explore peer familiarity. The second set of analyses used peer reported aggressive students. This section will provide a brief summary of the results of this study. This section will also highlight the correspondence between teacher and student reports of aggressive students. The next chapter will provide an in depth discussion of these findings as well as the limitations of this study and future directions.

The first hypothesis was that students would affiliate with a greater proportion of peers who attended the same elementary school than expected by chance. It was also hypothesized that there would be a decline in affiliations with familiar peers as students were exposed to new and unfamiliar peers. These results supported both hypotheses. This study found that students were nearly twice as likely to affiliate with former schoolmates during the first semester of middle school as indicated by the peer familiarity ratio score. Students showed a significant linear decline in the proportion of familiar peers within peer group over time. This was associated with both a linear decline in the number of familiar peers within peer group as well as an increase in the number of unfamiliar peers entering the group. The influx of unfamiliar peers was greatest between Time 1 and Time 2, followed by a slight decline between Time 2 and 3.

The second hypothesis was that boys would affiliate with a higher proportion of familiar peers than girls at the beginning of middle school, but that boys would experience little change over time. Girls were expected to experience a significant decline in affiliations with familiar peers over time. Contrary to the hypothesis there was no difference between boys and girls at Time 1 on the peer familiarity ratio. In addition, an investigation of the number of familiar and unfamiliar peers within peer group for boys and girls revealed that both boys and girls had the same number of familiar peers within group at Time 1, but girls had a significantly lower number of unfamiliar peers within peer group than boys at Time 1. Consistent with hypothesis, boys did not experience a significant change in affiliations with familiar peers over time. Also consistent with hypothesis, girls experienced a decline in their proportion of familiar peers within peer group. This decline was due to a linear decline in the number of familiar peers within peer group as well as an increase in the number of unfamiliar peers entering the peer group. Girls showed the largest increase in unfamiliar peers within group between Time 1 and Time 2. Between Time 2 and 3 there was a decline in this trend.

The third hypothesis was that both aggressive and non-aggressive students would affiliate with a comparable proportion of familiar peers during the first semester, but that over time aggressive students would continue to affiliate with a higher proportion of familiar peers than non-aggressive students. Both teacher and student reported physically aggressive students affiliated with a comparable proportion of familiar peers at Time 1. Contrary to the hypothesis, follow up analysis revealed that there was not a statistically significant difference between physically aggressive and non-aggressive students at Time 2 or 3. This result was found for both teacher and student reported physically aggressive students.

Inconsistencies did emerge when examining socially aggressive students using teacher and student reports to identify aggressive students. Teacher reported socially aggressive and non-aggressive students had a comparable proportion of familiar peers within peer group at all three time points. However, peers reported that socially aggressive students had a significantly greater proportion of familiar peers within peer group than non-socially aggressive students at Time 1 and 2. Follow up analysis failed to determine whether this significant finding was due to either the number of familiar or unfamiliar peers within peer group.

A final objective of the analysis was to test for gender and aggression interactions at each time point. No interaction was found for gender and students rated as physically aggressive by peers. An interaction between gender and students rated as physically aggressive by teachers was found at Time 1 only. Girls rated as physically aggressive by teachers had a greater proportion of familiar peers within group than boys at Time 1. Several interactions were found for gender and social aggression using student and teacher reports. An interaction was found between gender and students reported as socially aggressive by teachers at Time 1 only. Girls rated as socially aggressive by teachers had a greater proportion of familiar peers within group than boys at Time 1. Students however, reported a significant gender and social aggression interaction at Time 1 and Time 2. There was no difference between peer reported socially aggressive boys and girls at Time 1. However, within gender, boys rated as socially aggressive by peers had a higher proportion of familiar peers within group than non-socially aggressive boys. At Time 2 there was a significant difference between socially aggressive boys and socially aggressive girls on the peer familiarity ratio. Boys rated as socially aggressive by peers had a greater peer familiarity

ratio score than socially aggressive girls at Time 2. The student reported gender and aggression interactions should be interpreted with caution given that there were only five socially aggressive boys.

# CHAPTER VI

# DISCUSSION

## *Discussion of Findings*

The transition from elementary school to middle school can present challenges as well as opportunities for youth as they attempt to establish new friendships, maintain old friendships, and integrate themselves into the school social network. Students who have difficulty making friends or finding a supportive peer group during the first year of middle school can experience a variety of negative outcomes, such as emotional distress or academic problems (Wentzel, Barry, & Caldwell, 2004). Because peer relations play an important role in the lives of adolescents, especially during this transition, it is important to consider what factors impact peer group formation and maintenance. Several investigations have considered how peer similarity or school contextual factors impact peer relations, yet few have considered the role that peer familiarity may play in peer group formation, particularly during times of school transition (Gifford-Smith & Brownell, 2003). Some have argued that peer familiarity may play an especially important role during the transition to middle school, yet few empirical studies have examined this position (Cairns et. al., 1998).

Results of this investigation support the hypothesis that students are more likely to affiliate with familiar peers during this transition. Students were nearly twice as likely to affiliate with former elementary school peers during the fall of 6$^{th}$ grade than would be expected. Additionally, there was a steady decline in the proportion of familiar peers within peer group over the first three semesters of middle school. Interestingly, the proportion of

familiar peers within peer group remained significantly greater than expected at all time points despite the decline. These findings support the suggestion that affiliations with familiar peers during the middle school transition could serve the purpose of providing adolescents with some level of continuity and comfort as peer groups undergo considerable reshuffling and reorganization (Cairns, et al. 1998).

These results also point to another possibility. The suggestion that students will seek out familiar peers to find comfort and continuity implies that peers, in the short term, are willing to sacrifice forming more meaningful relationships with similar peers. That is, students are willing to affiliate with those who are familiar, even if they are dissimilar. This would imply that there is a breakdown in the process of homophily during times of transition. It is possible that familiar peers come together because of homophily. Middle school students may share common interests, beliefs, or hobbies with former elementary school students or they may perceive themselves as having similar backgrounds or shared experiences (i.e., attended the same school or are from the same community).

If these findings are a function of homophily, what brings about the decline in affiliations with familiar peers across middle school? There are several possible explanations. First, adolescents are undergoing a wide range of biological and cognitive changes (often at different times) that may alter their believes, interests, or goals which in turn can put peers at odds with one another (Cairns et al., 1998). Second, over time students may shift attention away from the similarity they once knew. They may find that the middle school context provides a wider range of new experiences as well as a larger pool of potential peer affiliates. For example, middle school students may have the opportunity to take part in a variety of extracurricular activities not available in elementary school. Students may develop new

interests based on these new opportunities. This in turn may put new socialization pressures on peer group members who affiliate based on past similarities (Kandel, 1978).

These findings must also be interpreted in relation to other investigations. This investigation both supports the findings of Hardy et al. (2002) as well as adds to their work. Hardy et al. found an overall increase in the number of friendship nominations of unfamiliar peers across middle school. The results from this study indicate that the number of unfamiliar peers within peer groups also increased over time. However, Hardy et al. found no significant change in friendship nominations of familiar peers over time while this study revealed a decline in the actual number of familiar peers within peer group over time. These findings may have more to do with the nature of relationships between friends versus peer group affiliates. Taken together, these findings suggest that there is considerable stability in friendships based on familiarity. However, students may be more willing to shed familiar peers within their peer group. This may be due to the fact that after the transition, students are in a better position to evaluate the characteristics of their peers and in so doing are more willing to dissolve affiliations with familiar group members, but not close friends, and replace them with those who are more similar or have similar interests (Cairns et al., 1998).

*Gender*

The findings from this investigation also expand on previous findings that girls are increasingly more likely to nominate unfamiliar peers as friends than boys across the transition (Hardy et al., 2002). Using peer network analysis, this investigation found unique trends for boys and girls as they transitioned to middle school. For example, at Time 1 there was not a significant difference between boys and girls on the peer familiarity ratio. However, girls had significantly fewer unfamiliar peers within peer group than boys at Time 1. Boys

showed no significant change in the number of familiar or unfamiliar peers within peer group at Time 2 or Time 3. Girls on the other hand showed a significant increase in the number of unfamiliar peers within peer group at Time 2 followed by a slight decline at Time 3. Girls also showed a steady decline in the number of familiar peers within peer group over the three time points. This finding is important because it demonstrates that as girls transition to middle school they not only seek out new and unfamiliar peers as close friends as Hardy et al. found, but they also increasingly surround themselves with unfamiliar peers in the larger peer group as evidenced by the large increase in the number of unfamiliar peers within peer group between the fall and spring of $6^{th}$ grade. One difference in the finding between Hardy et al. and the current investigation was that the former investigation found that girls did not show a significant change in affiliations with familiar friends. This investigation found that girls experience a decline in affiliations with familiar peers. Hardy et al. (2002) found that boys report a slight increase in friendship nominations with unfamiliar peers, but not to the same degree as girls. This investigation found no significant change in affiliations with familiar or unfamiliar peers over time for boys.

Taken together, these two studies suggest that in general girls and boys demonstrate different affiliations patterns when they enter middle school. Girls may be initially reluctant to form peer affiliations with unfamiliar peers, but that over time they surround themselves with greater numbers of unfamiliar friends and peer group affiliates than boys. Boys on the other hand generally maintain friendships and peer group affiliations with a more consistent proportion of familiar and unfamiliar peers.

*Aggression*

It was hypothesized that both physically and socially aggressive students would not differ from non-aggressive students at the beginning of middle school, but that over time only non-aggressive students would show a decline in affiliates with familiar peers. Contrary to the hypothesis, students rated as physically aggressive by peers as well as students rated as physically aggressive by teachers did not differ significantly non-physically aggressive students on the proportion of familiar peers within peer group at all three time points. The fact that this was confirmed for students rated as physically aggressive by both students and teachers provides strong counterevidence to the hypothesis. One possible explanation for this finding has to do with the underlying assumption that if aggressive students were more likely to affiliate with familiar peers, they would do so within the school. Previous studies suggest that physically aggressive peers meet and form friendships with familiar peers who are from the same neighborhood or community, but these studies came to different conclusions on whether these affiliations occur during or outside of school. Eckert (1989) suggests that aggressive students affiliate with familiar peers during school, whereas Kiesner et al. (2004) found that aggressive students affiliate with familiar peers outside of school. Results from this investigation provide greater support for the findings of Kiesner et al. that aggressive peers may be more likely to affiliate with familiar peers, but that this occurs primarily outside of school.

Although students rated as physically aggressive by teachers or peers did not differ from non-aggressive peers, differences were found between students rated as socially aggressive by teachers versus students rated as socially aggressive by peers. Students rated as socially aggressive by teachers did not differ from non-socially aggressive students. However,

students rated as socially aggressive by peers had a greater proportion of familiar peers within peer group than non-socially aggressive students at both the fall and spring of 6th grade.

The discrepancy in findings between the teacher and student reports of socially aggressive students is not unique to this investigation. Investigations that have compared teacher and student reports of physical aggression have found that teachers and students have moderate to high agreement when reporting on physically aggressive students (Huesmann et al., 1994). This may be due to the fact that physically aggressive acts are more public in nature and thus more observable to teachers and students alike. However, students and teachers have lower levels of agreement when reporting on socially aggressive students (Pakaslahti & Keltikangas-Järvinen, 2000). The literature suggests that this contradiction may arise from the relative vantage point of the respondent. For example, students are in a better position to view and report on the more subtle socially aggressive acts because students are embedded in the peer network. Middle school teachers may not be in a position to observe these covert behaviors because they have less contact with students (especially during unsupervised and unstructured activities) and thus cannot observe many peer group interactions and exchanges (Crick & Grotpeter, 1995).

If peers are in a better position to observe socially aggressive acts then the question remains as to why socially aggressive students are more likely to affiliate with a greater proportion of familiar peers during the first year of middle school. This is difficult to answer given that the literature on peer familiarity is based on physically aggressive and antisocial adolescents. Further complicating the matter is the fact that although socially aggressive students may use different forms of aggression, they face many of the same peer relational

problems as physically aggressive youth. For example, socially aggressive youth have problems forming and maintaining relationships, are at risk for peer rejection (Crick, 1996; Werner & Crick, 2004), and may be viewed as prominent members of the peer network while being disliked by peers (Cillessen & Mayeux, 2004; Crick, & Grotpeter, 1995). Given these general similarities between physically and socially aggressive students it is somewhat surprising that both groups show different patterns regarding affiliations with familiar peers.

The different pattern of findings for adolescents identified as physically aggressive and adolescents identified as socially aggressive may reflect several distinctions in the relational experiences of physically and socially aggressive youth. In this investigation physically aggressive students showed no difference in affiliations with familiar peers. This could reflect the fact that physically aggressive students are content to affiliate with familiar peers outside of school if they have difficulty forming friendships at school (Kiesner et al., 2004). Socially aggressive students may be more likely to affiliate with a greater proportion of familiar peers during school because socially aggressive acts require that the aggressor is engaged in, or has some level of understanding of the school social dynamics. If students engage in socially aggressive acts at school they may face place themselves at risk for being rejected or having other peer related problems. Unlike physically aggressive students, socially aggressive students may not be content to affiliate with familiar peers outside of school. Socially aggressive students may affiliate with familiar peers during school as a way to be involved in the peer network without facing rejection from new and unfamiliar peers.

One interesting question centers on why socially aggressive peers had a greater peer familiarity ratio score at Times 1 and 2. This ratio score is partially derived from the number of familiar and unfamiliar peers within peer group. Follow up analysis were conducted to

determine if socially aggressive students had a higher familiarity ratio score because they affiliated with a greater number of familiar peers or smaller number of unfamiliar peers. This analysis would have provided greater information, but the results were inconclusive. No differences were found between socially aggressive and non aggressive students on the number of affiliations with familiar and unfamiliar peers. This finding is not entirely surprising. Although examination of the raw number of peer affiliates within group makes intuitive sense, these numbers can be deceiving given that they are an observed value that have not undergone correction for what would be expected, given the availability of familiar peers from the various feeder elementary schools. For example, of the 28 socially aggressive students that were identified by peers 9 were from small feeder schools that send less than 20 students to the middle school. The remaining 18 were from large elementary schools that sent a much larger number of students. While it was possible to conduct this follow up analysis when examining gender differences, it becomes more problematic with this smaller sub-sample of socially aggressive students.

*Limitations*

The current study provides insight into peer affiliations with familiar peers during the transition to middle school however, these results should be interpreted in light of certain methodological limitations. The first limitation was the relatively small sample size. The sample size was sufficient to examine gender differences and differences between aggression groups, but it became more difficult to interpret interactions between gender and aggression. For example, only five boys were identified as socially aggressive by peers. Future investigations with larger samples may provide a better understanding of how gender and aggression interact to impact affiliation patters with familiar peers.

A second limitation was the uneven size of the elementary schools that fed into the middle school. Some elementary schools contributed two or three times as many students to their respective middle school as others. This in turn impacted the number of familiar peers available to a given student. To correct for this the dependent variable was transformed into a ratio score to compare the observed proportion of familiar peers within peer group to what would be expected based on the number of available familiar peers. Although this provided necessary and adequate correction for this methodological issue, it made the dependent variable less intuitively clear and interpretable.

A final limitation of this study involves the identification and analysis of aggressive students. Socially aggressive students were identified using one student-reported item as well as one teacher-reported item. Greater construct validity could be achieved by increasing the number of items used to identify socially aggressive peers. However, it was of greater importance to make the distinction between socially and physically aggressive peers without complete measures of social aggression given that physically and socially aggressive students may have different peer relational experiences during the transition to middle school. Further noteworthy is that students who were identified as aggressive by both peers and teachers received relatively low aggression scores. Students identified as aggressive may have been so relative to peers, but overall most had only low to moderate levels of aggression. Although it is important to investigate those who are aggressive relative to their peers, this may have limited the findings of this investigation because the aggressive adolescents cited in other studies tended to engage in more deviant or delinquent behaviors (Dishion et al., 1995; Kiesner et al., 2004). The findings from this study may have been different had the sample size been large enough to focus exclusively on the highly aggressive and deviant subjects.

*Future Directions*

The results of this study suggest several areas for further investigation. Three areas that warrant particular attention are: better identification and exploration of aggressive students, greater attention and focus on the school context, and investigating affiliations with familiar peers as a protective or risk factor for student outcomes.

*Identification of Aggressive Students.* The results of this investigation suggest that two considerations should be made for future investigations: First, this investigation demonstrated clear differences between physically and socially aggressive students regarding affiliations with familiar peers. These findings reinforce the need to explore other similarities or differences between physically and socially aggressive youth on peer affiliation patterns. Second, larger samples should be used to identify a larger pool of aggressive peers. The current analysis included a small sample in which only a small number of peers were identified as aggressive. These peers had high levels of aggression relative to peers, but overall their aggression levels were low. It is difficult to compare these results to other studies that use highly aggressive and/or antisocial youth for analysis. Future work should include larger samples, or samples that specifically target highly aggressive youth. For example, those who fight regularly, engage in destruction of school property, or engage in other violent acts. Examination of highly aggressive students may reveal differences between aggressive and non-aggressive students that were not found in this study.

*Greater Attention and Focus on the School Context.* The focus of the current investigation was on the role of aggression and peer affiliations in middle school. Few studies to date have examined how the middle school context impacts student adjustment, particularly for those who are at risk (Gutman, Sameroff, & Eccles, 2002). Little attention

was given to how school contextual factors may have influenced the current findings. Students may have experienced a decrease in affiliations with familiar peers because of exposure to unfamiliar peers through new opportunities presented to middle school students, such as involvement in extra curricular activities. Greater attention should be given to school contextual factors (such as extracurricular opportunities) and how these factors may impact peer affiliations. For example, low income schools like those in this study often face challenges in providing extracurricular and after school programs. This occurs for a variety of reasons including less financial support, higher cost of transportation, faculty and staff recruitment and retention problems, and fewer opportunities to partner with community businesses and industries (Save the Children, 2002). Also, there is evidence to suggest that rural students differ from urban students in their choice of extracurricular activities (Blackwell & McLaughlin, 1999). Any future investigations that consider the role of extracurricular activities on peer affiliation choice should consider what unique opportunities are available in a particular school context.

In addition, any exploration of the school context should also include an examination of how boys and girls are differentially impacted by the middle school context. For example, the nature of middle school may place greater constraints on peer affiliations for girls than boys. Boys tend to have larger and more loosely connected networks of friends and peer affiliates. Girls on the other hand tend to have smaller clusters of friends and affiliates (Gifford-Smith & Brownell, 2003). Boys' groups may be more resistant to school practices that may impact propinquity while girls' groups may be more sensitive to the same practices as these practices may be more disruptive to smaller groups. Also, the middle school context may impact the peer status of boys and girls differently. For example, girls and boys may

take part in many of the same extracurricular activities at middle school, but these activities may enhance the reputation of one gender over the other (Eder & Kinney, 1995).

*Affiliations with Familiar Peers as a Risk or Protective Factor.* The findings from this study, in conjunction with research from other studies (e.g., Nash, 1973) indicate that affiliating with familiar peers is something students do during the transition. A next step is to address whether affiliation with familiar peers during a time of transition is an adaptive strategy, or a strategy that can place an adolescent at risk for negative outcomes. Future investigations could examine relational qualities of those who affiliate with a greater proportion of familiar peers, such as their satisfaction with friends and peers or other factors that may indicate whether this strategy is adaptive or problematic.

Exploration of this topic was not directly considered in this investigation however, results from secondary analysis may provide a clue as to whether affiliation with familiar peers is a sign of maladjustment. The literature suggests that those who are both socially and physically aggressive are most likely to experience the greatest negative outcomes (Crick, Nelson, Morales, Cullerton-Sen, Casas, & Hickman, 2001). Using data from this investigation, those students who were both physically aggressive and socially aggressive were found to have the highest proportion of familiar peers within their peer group (above non-aggressive, physically aggressive, or socially aggressive students) based on student reports. If individuals who are socially and physically aggressive have difficulty making new friendships with unfamiliar peers at the beginning of middle school, they may retreat and regroup around old friends and familiar classmates from elementary school.

*Conclusion*

The current study was the first to use peer network analysis to investigate whether or not students seek out familiar peers when they arrive at middle school. These results suggest that peers do in fact surround themselves with a much greater proportion of familiar peers than expected at the beginning of middle school. Over time, students surround themselves with a smaller proportion of familiar peers. This is possibly due to the fact that given enough time students will explore the peer network, take stock of the new and unfamiliar peers, and then shift their affiliations away from familiar peers who served a more crucial role during the initial transition. It is also possible that familiar peers perceive themselves as similar at the beginning of middle school, but expanded opportunities at school coupled with biological and cognitive changes during adolescence may change these perceptions of similarity.

Although these findings add to our understanding of peer affiliation patterns that occur over the course of the middle school transition, this investigation also generated a series of new questions for future investigations. A key question that remains is whether or not affiliating with familiar peers is an adaptive strategy during the transition. It is possible that this is a naturally occurring developmental process that is adaptive. However, heavy reliance on, or prolonged affiliations with familiar peers may be problematic for some students. This investigation failed to find significant differences between physically aggressive and non-aggressive students on affiliations with familiar peers. Although significant differences where not found, findings from this study and others (e.g. Dishion et al., 1995) suggest that aggressive and non-aggressive students may affiliate with familiar peers for different reasons. Non-aggressive students may affiliate with familiar peers based on actual or perceived similarity while aggressive peers affiliate with familiar peers as a way

to avoid isolation or rejection. Future studies should explore the possibility of a more qualitative difference between aggressive and non-aggressive peers on affiliation patterns with familiar peers.

Table 1: Participating Schools Descriptive Statistics

| Participating School | Feeder School | Classrooms | Number of Students | Percent within Middle School |
|---|---|---|---|---|
| Middle School 1 (n = 78) | Elementary A | 6 | 55 | 70.5 |
| | Elementary B | 2 | 19 | 24.4 |
| | Elementary C | 1 | 4 | 5.1 |
| Middle School 2 (n = 93) | Elementary D | 1 | 5 | 5.4 |
| | Elementary E | 5 | 69 | 74.2 |
| | Elementary F | 3 | 19 | 20.4 |

Table 2: Peer Group Descriptive Statistics

| Gender | n | Variable | Time 1 | | Time 2 | | Time 3 | |
|---|---|---|---|---|---|---|---|---|
| | | | M | (SD) | M | (SD) | M | (SD) |
| Boys | 76 | Group Size | 5.72 | (2.81) | 5.28 | (2.08) | 5.49 | (3.28) |
| | | Number Unfamiliar | 1.69 | (2.23) | 1.53 | (1.80) | 1.93 | (2.20) |
| | | Number Familiar | 4.03 | (2.92) | 3.75 | (2.09) | 3.56 | (2.42) |
| | | Percent Familiar | 0.72 | (0.34) | 0.72 | (0.31) | 0.64 | (0.35) |
| | | Peer Familiarity Ratio | 1.64 | (1.43) | 1.85 | (1.86) | 1.56 | (1.80) |
| Girls | 95 | Group Size | 4.61 | (2.64) | 5.94 | (3.46) | 4.82 | (1.98) |
| | | Number Unfamiliar | 0.72 | (1.20) | 2.20 | (2.95) | 1.55 | (1.87) |
| | | Number Familiar | 3.90 | (2.78) | 3.74 | (2.35) | 3.26 | (2.01) |
| | | Percent Familiar | 0.83 | (0.26) | 0.66 | (0.35) | 0.68 | (0.34) |
| | | Peer Familiarity Ratio | 1.82 | (1.11) | 1.27 | (0.69) | 1.19 | (0.57) |
| Total | 171 | Group Size | 5.10 | (2.76) | 5.65 | (2.95) | 5.12 | (2.64) |
| | | Number Unfamiliar | 1.15 | (1.79) | 1.91 | (2.53) | 1.72 | (2.02) |
| | | Number Familiar | 3.95 | (2.83) | 3.74 | (2.23) | 3.39 | (2.20) |
| | | Percent Familiar | 0.78 | (0.30) | 0.69 | (0.33) | 0.66 | (0.34) |
| | | Peer Familiarity Ratio | 1.74 | (1.26) | 1.52 | (1.36) | 1.35 | (1.28) |

Table 3: Student Versus Teacher Reported Aggression

| Student | Aggression Status: Teacher | | |
|---|---|---|---|
| | *Physical* | | Grand Total: |
| | Non-aggressive | Aggressive | |
| Non-aggressive | 87 | 22 | 109 |
| Aggressive | 8 | 9 | 17 |
| Grand Total: | 95 | 31 | 126 |
| | *Social* | | Grand Total: |
| | Non-aggressive | Aggressive | |
| Non-aggressive | 76 | 27 | 103 |
| Aggressive | 13 | 10 | 23 |
| Grand Total: | 89 | 37 | 126 |

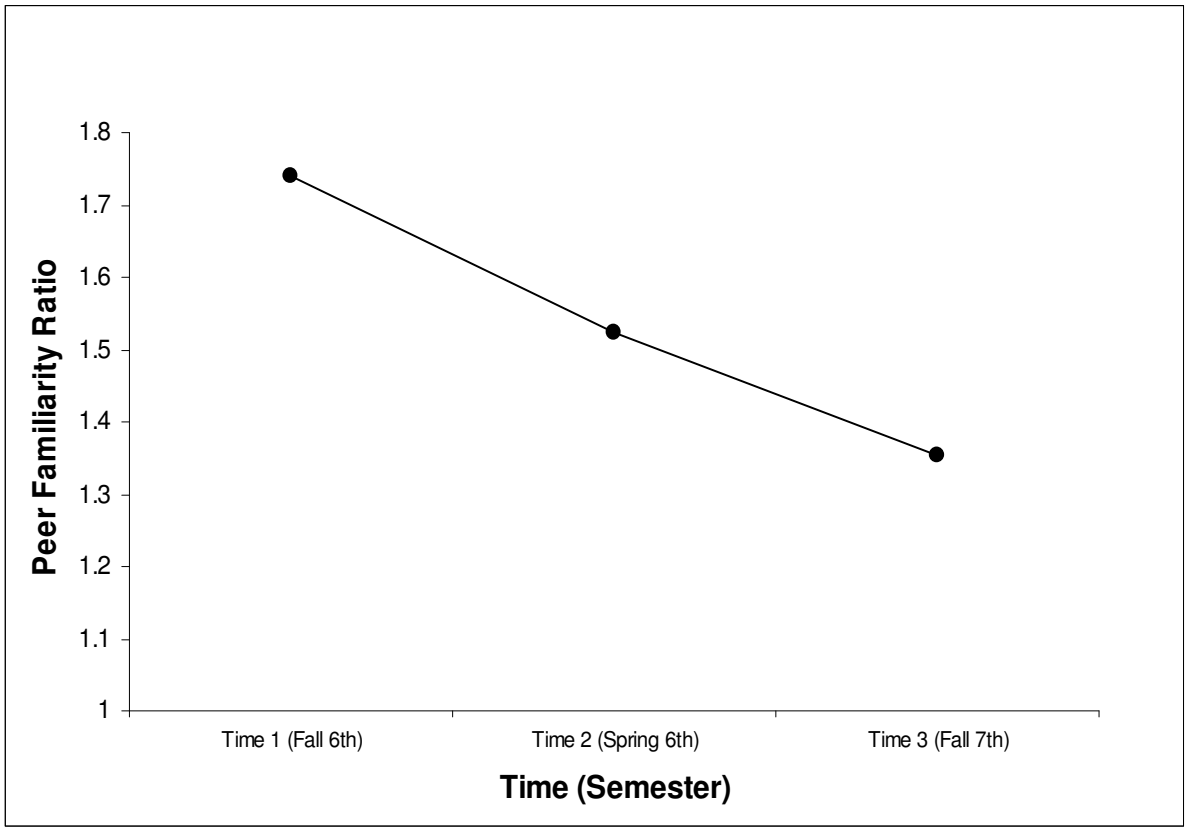



*Figure 1*: Peer Familiarity Ratio Over Time

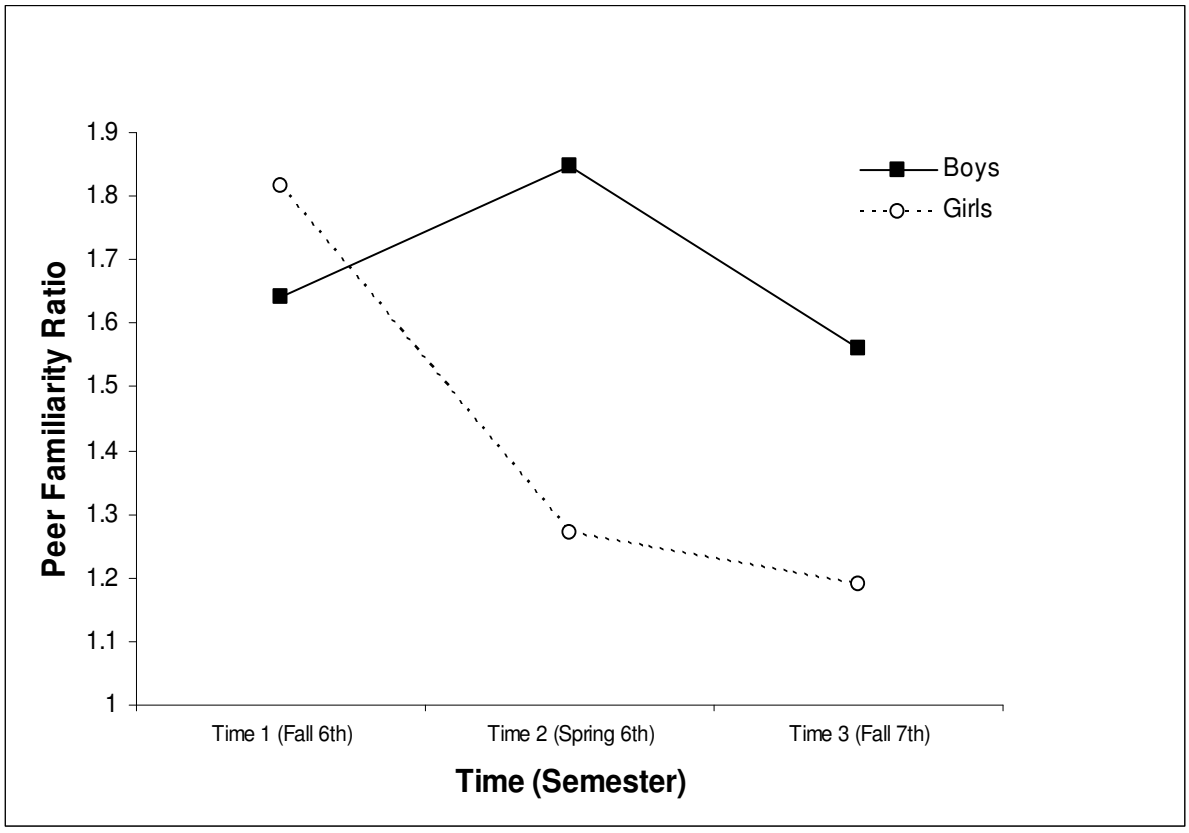



*Figure 2*: Gender and Peer Familiarity Ratio Over Time

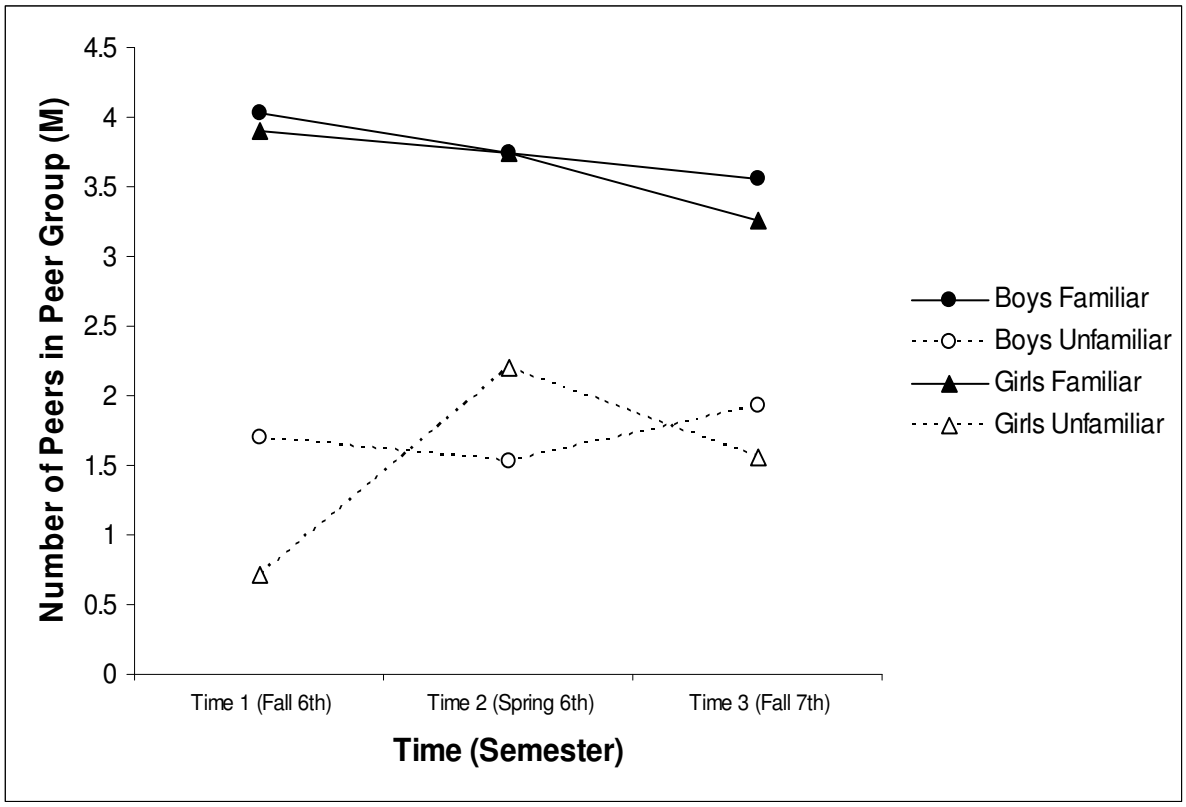



*Figure 3*: Affiliations with Familiar and Unfamiliar Peers by Gender

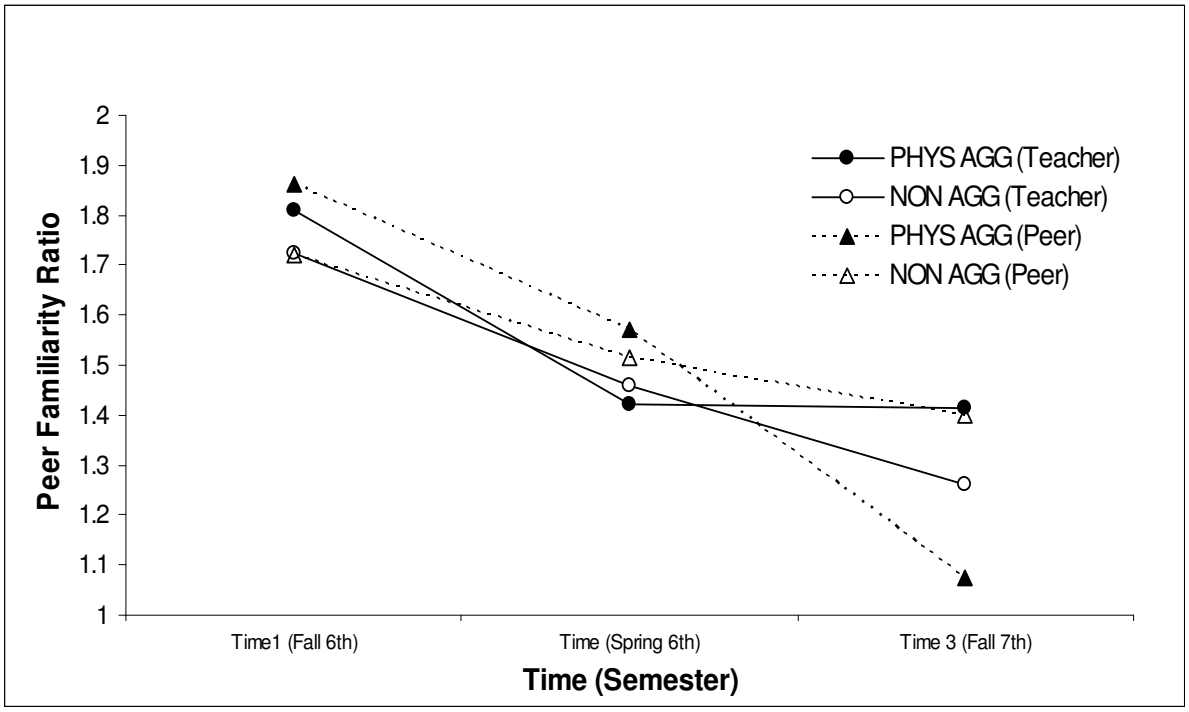



*Figure 4*: Teacher and Student Reported Physical Aggression

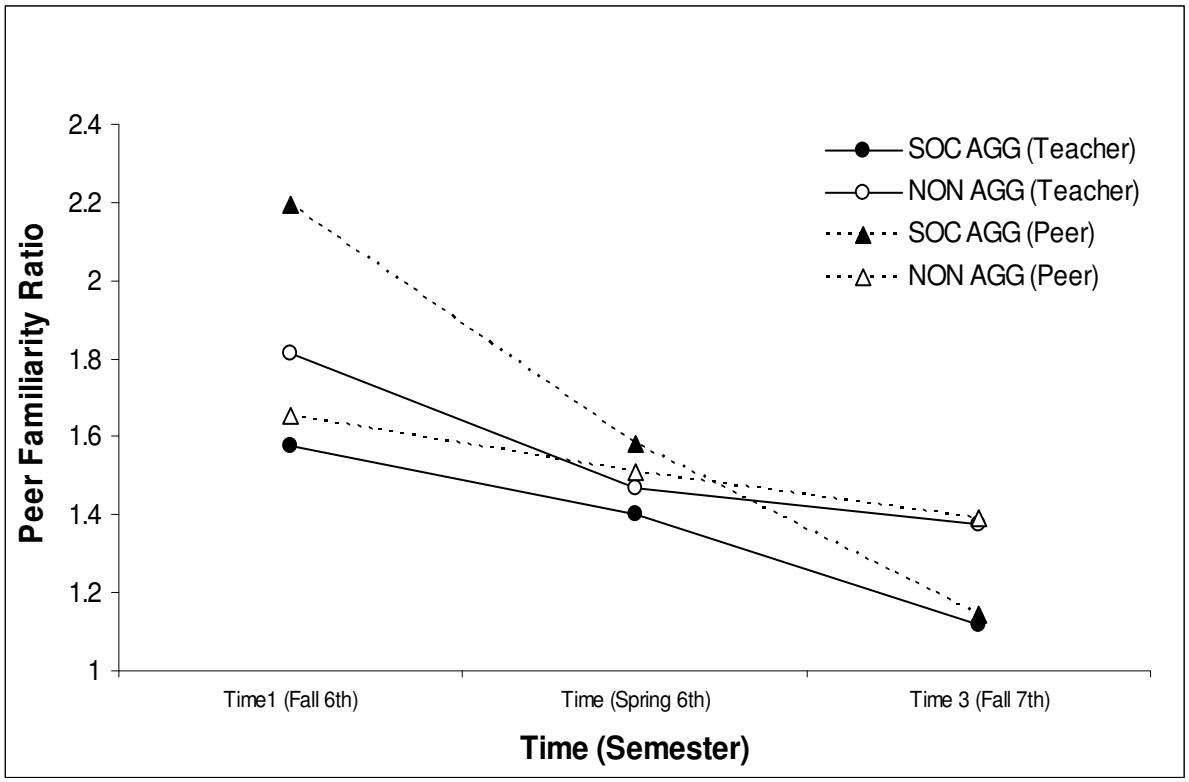



*Figure 5*: Teacher and Student Reported Social Aggression

APPENDIX I:

## Friends and Groups

Are there any kids in your 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 that you can think of.

**Group 1:** _____

_____

_____

**Group 2:** _____

_____

_____

**Group 3:** _____

_____

_____

**Group 4:** _____

_____

_____

**Group 5:** _____

_____

_____

Are there some kids who don't seem to have a particular group, who tend to stay by themselves a lot?

_____

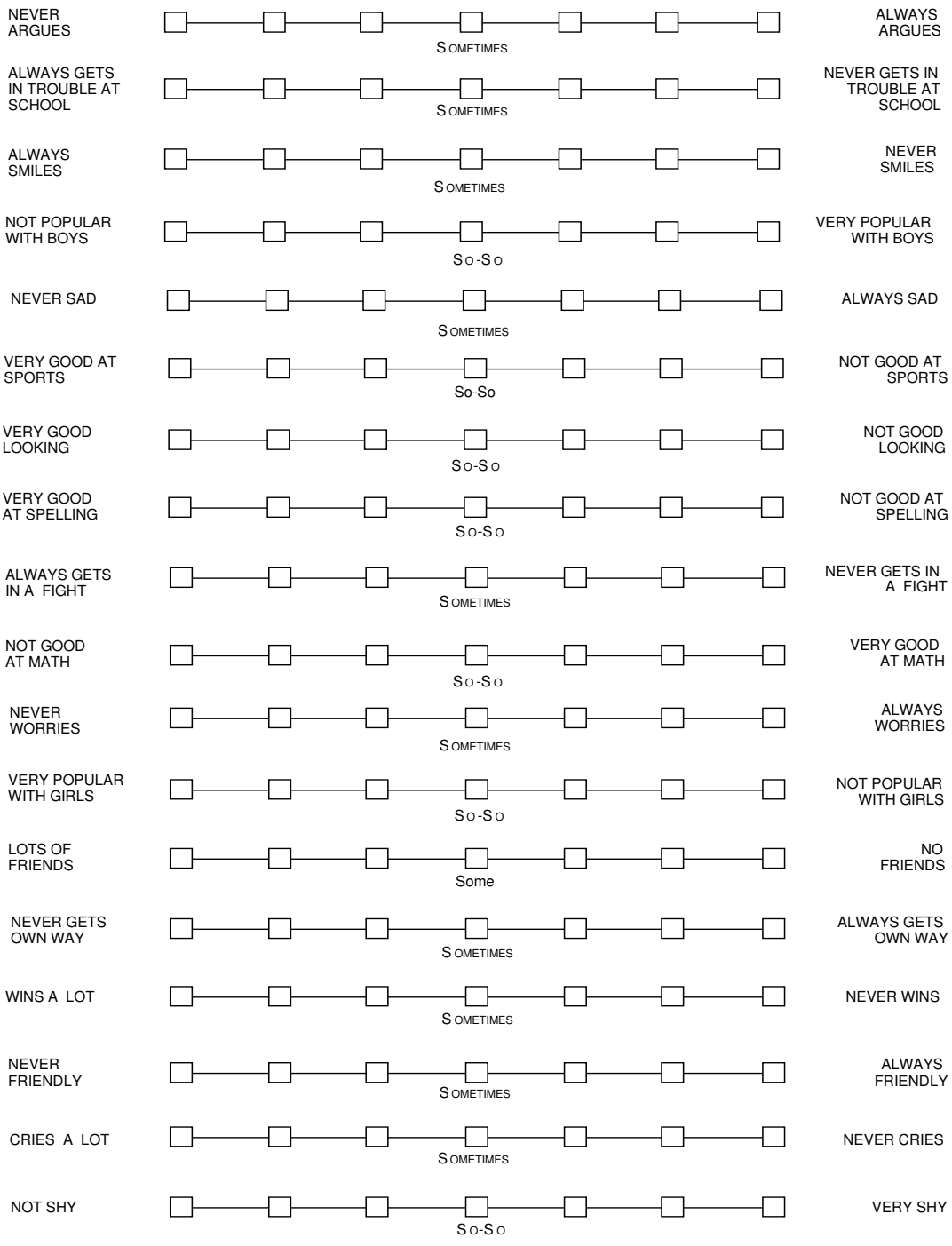
_____

_____

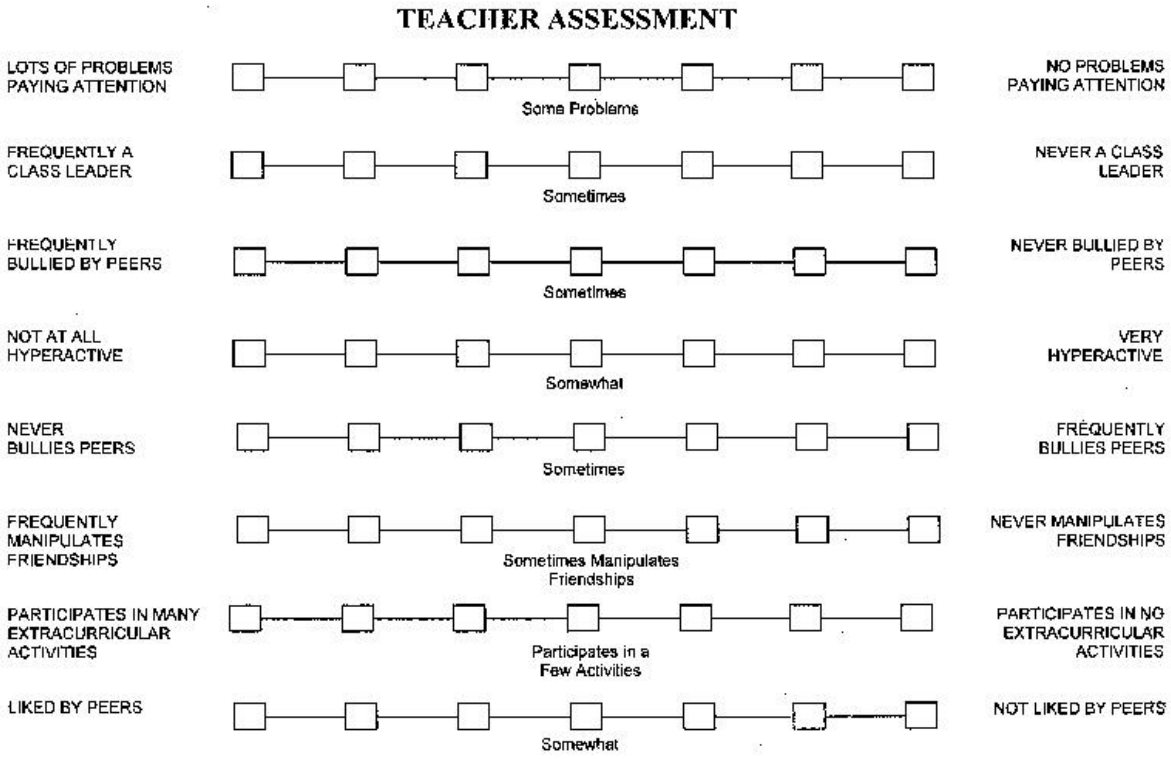
**IF YOU NEED MORE SPACE, TURN THE PAPER OVER. REMEMBER, YOU DON'T HAVE TO FILL IN ALL THE LINES.**

APPENDIX II:

# The Interpersonal Competence Scale



APPENDIX III:



# APPENDIX IV:

## Peer Nomination Measure

**For the following, name the three kids in your grade who best fit the description.**

1) **Cooperative**. "Here is someone who is really good to have as part of your group, because this person is agreeable and cooperative – pitches in, shares, and gives everyone a turn."

_____ _____ _____

2) **Disruptive**. "This person has a way of upsetting everything when he or she gets into a group – doesn't share and tries to get everyone to do things their way."

_____ _____ _____

3) **Acts Shy**. "This person acts very shy with other kids. It's hard to get to know this person."

_____ _____ _____

4) **Starts Fights**. "This person starts fights. This person says mean things to other kids or pushes them, or hits them."

_____ _____ _____

5) **Seeks Help**. "This person is always looking for help, asks for help even before trying very hard."

_____ _____ _____

6) **Leader**. "This person gets chosen by others as the leader. Other people like to have this person in charge."

_____ _____ _____

7) **Athletic**. "This person is very good at many outdoor games and sports."

_____ _____ _____

8) **Gets in trouble**. "This person doesn't follow the rules, doesn't pay attention, and talks back to the teacher."

_____ _____ _____

9) **Good student**. "This person makes good grades, usually knows the right answer, and works hard in class."

_____ _____ _____

**Do not name more than three persons for each question.**
Remember, you don't have to fill in all the lines

10) **Cool**. "This person is really cool. Just about everybody in school knows this person."

_____ _____ _____

11) **Sad**. "This person often seems sad."

_____ _____ _____

12) **Starts rumors**. "This person gossips and says things about others. This person is good at causing people to get mad at each other."

_____ _____ _____

13) **Popular**. "Some kids are very popular with their peers. That is, many classmates like to play with them or do things with them."

_____ _____ _____

14) **Trend setter.** "This person sets the styles. Other people copy or imitate the way this person looks, dresses or acts."

_____ _____ _____

15) **Picked on**. "This person is picked on by others."

_____ _____ _____

16) **Friendly**. "This person is usually friendly to others."

_____ _____ _____

17) **Bully**. "This person bullies others. This person is always hurting or picking on others."

_____ _____ _____

18) **Gets their way**. "Other kids do what this person wants. This person always gets their way."

_____ _____ _____

19) **Name the three classmates you like the most.**

_____ _____ _____

20) **Name the three classmates you like least.**

_____ _____ _____

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