CLIQUE CHARAHCERISTICS AND CHILDREN'S SELF-REPORTED SOCIAL

ADJUSTMENT

by

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(Under the Direction of A. Michele Lease)

ABSTRACT

In middle childhood, children's affiliation-based groups, or cliques, provide an important context for their social development. The overall goal of the study, which consists of two manuscripts, was to examine the contribution of clique characteristics to children's social and emotional adjustment. The first manuscript presented different types of cliques based on aggregated behavioral characteristics of clique members. It was also found that average levels of clique members' social status and children's social adjustment outcomes differ across types of cliques. In the second study, the interaction between clique type to which a child belongs and perceived cohesion of the clique on his or her social adjustment was examined. The results indicated that the degree to which clique members are perceived to be similar (i.e., perceived cohesion) moderates the link between type of clique and children's social adjustment. The thesis concludes with a summary of findings and suggestions of future directions.

INDEX WORDS: Social Networks, Types of Cliques, Perceived Similarity, Perceived
                 cohesion, Adjustment

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CHAPTER 1

THESIS INTRODUCTION

The Significance of Children's Social Networks

Social network approaches of children's peer relations has emphasized that children's development cannot be fully understood without considering their social context (Cairns, Xie, & Leung, 1998). That is, individuals' self-concept, behaviors, and social values are shaped through interaction with others in their social group (Cairns, Leung, & Cairns, 1995). Specifically, children tend to form rather exclusively connected social groups, or 'cliques,' as they enter middle childhood (Crockett, Losoff, & Petersen, 1984). Cliques are well-defined networks in which clique members are often friends with each other (Hallinan, 1980). Research has suggested that children form cliques based on same gender and race, and clique size ranges from three to nine children (see review by Gifford-Smith & Brownell, 2003). By the late elementary school years, most children report that they are a part of a clique, suggesting that cliques serve as an important context where the majority of children's peer interactions occur (Crokett et al., 1984).

Despite the recognition of importance of peer context, peer group affiliations have been less extensively studied than children's social status and friendships probably because measuring peer networks are conceptually and methodologically complex. Definition of peer networks also varies depending on the focus of age group and methods of measurement. For example, some researchers have examined adolescents' reputation-based crowds (e.g., brains, nerds, jocks) (Brown, 1990), whereas others focused on friendship networks determined by self-report of friendships (e.g., Haynie, 2001).

In this study, the Social Cognitive Map (SCM) approach was employed developed by Cairns and colleagues (1985). In this method, children are asked to list a group of children who 'hang out together a lot' including themselves. The primary goal of this approach is to identify

children's peer affiliation patterns within the peer group (e.g., classroom). In addition to identification of discrete cliques, researchers have addressed questions regarding the specific position (i.e., central, secondary, and peripheral, etc) the child holds in the network, structural characteristics of cliques (e.g., size, stability), the process of group formation (e.g., similarity, proximity), and the influence of group membership on children's developmental outcomes (e.g., aggression, motivation, achievement) (Cairns et al., 1985; see review by Gifford-Smith & Brownell, 2003).

Peer Group Homophily and Perceived Similarity

Group homophily refers to the phenomenon that individuals within a group tend to be more similar to each other than to non-group members (Kandel, 1978). In fact, numerous studies have demonstrated similarities among clique members in aggression levels (Cairns, Cairns, Neckerman, Gest, & Gariépy, 1988), rates of school dropout and early parenthood among adolescents (Xie, Cairns, & Cairns, 2001), and school grades, externalizing problems, and discipline referrals (Henrich, Kuperminc, Sack, Blatt, & Leadbeater, 2000).

The literature suggests two processes that underlie peer group homophily: selection and socialization. Selection effect suggests that children tend to choose to be friends with those who have similar attributes. Socialization, or mutual influence, refers to the tendency for children to influence each other in a manner that increases their similarities. For example, two studies have demonstrated that academic attributes of children's peer affiliates at one time point in time predict children's own change across time, indicating socialization processes. Kindermann (1993) has demonstrated that motivation for school engagement increased across the school year for children who were affiliated with other highly motivated children, whereas the opposite was true for children who were affiliated with less motivated children at the beginning of the school

year. Ryan (2001) also has reported a similar finding with seventh grade students: Clique affiliation was found to account for changes in members' achievement over time, even after controlling for the initial selection.

The phenomenon of group homophily likely contributes to the establishment of clique reputation and differentiation of one clique from another. That is, behavioral reputations of cliques might naturally emerge based on members' shared attributes. As a consequence, a child's social reputation might be determined by his or her own characteristics as well as characteristics of cliques to which he or she belongs. Social cognitive processes also play a role in children's perception of individuals in a group and attitudes toward them. Rogosch and Newcomb (1989) explained that social reputations regulate children's social interaction with a perceived child, and the child's social experiences are, in turn, constrained by his or her social reputations. In the case of cliques, salient behavioral characteristics of clique members might form the basis of a clique's reputation. For example, cliques are sometimes characterized by certain labels, such as 'bullies' or 'athletes.' It is possible that a clique's behavioral characteristics are so salient, as compared to an individual clique member's characteristics, that it could overshadow the way in which the individual is perceived and treated by peers.

Whereas similarities of clique members have been primarily studied with regard to specific characteristics, it is also of interest the perceptual or cognitive aspects of similarities between group members. Simon, Pantaleo, and Mummendey (1995) explained that similarities are not only the basis of one's construal of social groups but also an outcome of understanding of a person as a group member. That is, as long as a person is identified as a group member, he or she is perceived to be similar to others in the group. Self-categorization theory (SCT; Turner, 1987) also suggests that similarities between individuals and their group members become intensified

as they are identified as part of a group. This often leads to suppression of individual characteristics and accentuation of group characteristics. Social categorization process may also be applied to children's cliques. That is, in so far as a child is identified as a clique member, peers may perceive him or her to be similar to others in the clique. Yet, the degree to which members are perceived to be similar is likely to vary across cliques. When clique members are perceived to be highly similar, or cohesive, the prevailing clique characteristics or reputation may overshadow individual characteristics to a greater extent. For example, a child's aggression may be overestimated when he or she is in an aggressive group which is also perceived to be highly cohesive. Depending on the characteristics or behavioral reputations of the clique to which a child belong, perceived cohesion might affect children's satisfaction either positively or negatively.

Overview of the manuscripts

This thesis is comprised of two manuscripts: The first manuscript is under peer review for publication, and the second manuscript will be submitted for peer review and publication. One theme that runs through the two studies was to identify social and psychological characteristics of cliques and to examine contribution of clique characteristics to children's social and emotional adjustment.

The first manuscript had three goals. First, types of cliques were determined based on a broad spectrum of behavioral characteristics, including *athletic, bully, reactive aggression, prosocial, fun, smart, and social withdrawal*. Because clique members have been demonstrated to be similar to one another in many characteristics, clique types might be meaningfully characterized by members' shared attributes. Second, clique members' average scores on social status indicators (i.e., likeability and perceived popularity) were compared across clique types. Given

that clique types were determined on the basis of behavioral characteristics and that social status is related to certain behavioral characteristics, high status children would be more likely to be found in cliques whose members also demonstrate behaviors associated with high status. Third, the study aimed to examine the contribution of types of cliques on children's social-emotional adjustment after taking into account individual social status. The type of a clique to which a child belongs could affect how he or she is perceived and treated by others, which, in turn, likely contribute to social satisfaction, above and beyond individual social status.

The second manuscript extended the first study about the contribution of the clique type to which children belong to their social and emotional adjustment by looking at the interaction between clique type and perceived cohesion on their adjustment. First, clique characteristics were examined in terms of perceived cohesion as well as types of cliques. Perceived cohesion of a clique was defined as the degree to which cliques are perceived to be a cohesive unit so that children in a highly cohesive clique are perceived to be similar to one another. Perceived cohesion of a clique was assessed based on children's implicitly-held (unconstrained) similarity judgments using a multidimensional scaling (MDS) technique. Second, the study aimed to examine the interaction between type of clique to which a child belongs and perceived cohesion of the clique on his or her social and emotional adjustment. It was hypothesized that the effect of perceived cohesion on a child's adjustment varies depending on the type of the clique to which he or she belongs.

Finally, the thesis is concluded with a summary of the findings of the two manuscripts and suggestions for future research.

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CHAPTER 2

CLIQUE MEMBERSHIPS AND SOCIAL ADJUSTMENT: THE CONTRIBUTION OF THE

TYPE OF CLIQUE TO CHILDREN'S SELF-REPORTED ADJUSTMENT[1]

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[1] Kwon, K. and A. M. Lease. Revised and Resubmitted to Merrill-Palmer Quarterly, 2/5/2006

Abstract

The effect of the type of a clique to which a child belongs on his or her social and emotional adjustment was examined in a sample of 473 fourth and fifth grade elementary school students. A cluster analysis identified five types of cliques based on clique members' aggregated scores on seven behavioral characteristics (i.e., prosocial, bully, reactive aggression, athletic, withdrawn, bright, fun): *Average, Withdrawn, Tough, Incompetent/aggressive, and Competent* cliques. On average, children in *Competent* and *Tough* cliques were more liked and more popular than children in other cliques. Self-reported adjustment in several domains was compared across clique types after controlling for individual status. Overall, children in *Competent* and *Average* cliques displayed higher levels of adjustment (e.g., high interpersonal competence, low anxiety, and low dissatisfaction with network participation) than children in *Withdrawn* and *Incompetent/aggressive* cliques. Children in *Tough* cliques endorsed lower levels of dissatisfaction with peer influence than those in and *Incompetent/aggressive* cliques.

Key words: clique profile, social status, adjustment, cluster analysis

Introduction

Research on children's peer relations has suggested that children's peer experiences at different levels of the peer system (i.e., individual, dyadic, group) make unique contributions to their overall social and emotional well-being (Rubin, Bukowski, & Parker, 1998). First, social status research focuses on the degree to which a child is accepted by peers (e.g., Coie, Dodge, & Coppotelli, 1982). The association between peer acceptance and psychological adjustment has been widely cited, particularly with regard to children who are disliked, or rejected, by peers (see review by Deater-Deckard, 2001; Kupersmidt, Coie, & Dodge, 1990). Second, dyadic approaches are concerned with children's friendships. Evidence suggests that a child's ability to form friendships is fairly distinct from his or her acceptance by peers. That is, Parker and Asher (1997) found that some highly accepted children have no close relationships, whereas over half of low-accepted children were found to have a reciprocated friendship.

More recently, developmental researchers have argued that attempts to understand the complexity of children's social lives are incomplete without the consideration of the social network in which children are embedded (Cairns, Xie, & Leung, 1998; Haynie, 2001; Kindermann, 1998; Ryan, 2001). Specifically, children begin to form social groups, or cliques, as they enter middle childhood (Crockett, Losoff, & Petersen, 1984). By definition, cliques are well-defined, rather exclusively connected, networks in which clique members are often friends with each other (Hallinan, 1980). Cliques usually consist of same-gender and same-race children, ranging in size from three to nine children (see review by Gifford-Smith & Brownell, 2003). By the late elementary school years, most children report that they are a part of a clique, and cliques appear to be an important context where the majority of a child's peer interactions occur (Crokett et al., 1984). In this study, the terms "peer groups" and "cliques" are used interchangeably.

Group approaches are conceptually and methodologically complex but, arguably, provide important information that may be missed by individual or dyadic approaches of peer relations. For example, from a status approach, aggressive children are often viewed as socially unsuccessful in that many of them are rejected by peers. Employing a social network approach, however, Cairns and colleagues (1988) have shown that aggressive children tend to be included in networks with other aggressive children, perhaps leading to acceptance of and support for aggressive behaviors. Thus, research on children's peer relations that neglects the peer context provides only a partial outlook on a child's peer experience (Cairns et al., 1998).

Previous studies have shown that measures of group membership predict children's developmental outcomes beyond measures of individual and dyadic adjustment in the peer system. However, little is known about behavioral configurations, or types, of cliques, and whether membership in a particular type of clique affects children's adjustment. In this study, we attempted to identify different types of cliques based on members' aggregate behavioral characteristics. The primary goal was to examine the association between children's clique membership and self-perceived social satisfaction and emotional adjustment above and beyond children's individual social status (e.g., likeability, popularity).

Cliques and Self-concept

As affiliation-based social clusters, cliques differ from other types of peer groups. For example, cliques are different from adolescents' reputation-based crowds (e.g., brains, nerds, jocks), whose members do not necessarily associate with each other (Brown, 1990), and friendship networks, determined by self-reported friendships (e.g., Haynie, 2001). In contrast, cliques have been defined as a small group of children who demonstrate frequent social interactions, as determined by peer-reports (Cairns, Perrin, & Cairns, 1985; Kindermann, 1993).

In the current study, cliques were identified with the Social Cognitive Map procedure (SCM, Cairns et al., 1985) using a paper-and-pencil format. Specifically, children listed groups of peers who "hang around together a lot."

Although children's cliques are not primarily reputation-based groups, behavioral reputations of cliques may naturally emerge based on members' shared attributes. The phenomenon of "birds of a feather flock together" has been widely cited to suggest similarity among group members (Rubin, Lynch, Coplan, Rose-Krasnor, & Booth, 1994). Social cognitive processes also play a role in children's perception of individuals in a group. According to Rogosch and Newcomb (1989, p. 597), "social reputations may regulate the types of social interaction that peers engage in with a perceived child, and reputation may constrain the social experiences available to individual children." In the case of cliques, salient behavioral characteristics of clique members might form the basis of a clique's reputation. For example, cliques are sometimes characterized by certain labels, such as 'bullies' or 'athletes.' In fact, a clique's behavioral characteristics might be so salient, as compared to an individual clique member's characteristics, that it could overshadow the way in which the individual is perceived and treated by peers.

The overall reputation of a clique and the manner in which a child is perceived by others, in turn, may contribute to the child's self-perceived functioning. According to symbolic-interaction theories, social interaction facilitates the formation and development of an individual's self-concept (James, 1890; Mead, 1934). Cooley (1902) argued that individuals' interpretations of how they are perceived by others significantly contribute to their self-image, or the "looking-glass self." As a result, a child's internalization of others' perceptions becomes the basis of self-perception. For example, Brown and Lohr (1987) demonstrated that adolescents who belonged to a crowd with a prestigious reputation displayed higher self-esteem and expressed higher interest

in and valuing of belonging to a group than those who belonged to less regarded groups. Similarly, it is likely that children who belong to a clique with positive social characteristics may feel more satisfied and successful than those who belong to a clique with a negative reputation.

Group Homophily and Clique Reputation

Group homophily refers to the phenomenon that individuals within a group tend to be more similar to each other than to non-group members (Kandel, 1978). As a "selection effect" might suggest, children tend to choose to be friends with those who have similar attributes. Also, at least two studies have demonstrated that specific characteristics of children's peer affiliates at one time point in time predict children's own change across time, indicating socialization processes. A study by Kindermann (1993) has demonstrated that motivation for school engagement increased across the school year for children who were affiliated with other highly motivated children, whereas the opposite was true for children who were affiliated with less motivated children at the beginning of the school year. Ryan (2001) also has reported a similar finding with seventh grade students: Clique affiliation was found to account for changes in members' achievement over time, even after controlling for the initial selection.

Numerous studies have demonstrated behavioral similarities between friends and clique members, including similarities in aggression levels (Cairns, Cairns, Neckerman, Gest, & Gariépy, 1988), rates of school dropout and early parenthood among adolescents (Xie, Cairns, & Cairns, 2001), and school grades, externalizing problems, and discipline referrals (Henrich, Kuperminc, Sack, Blatt, & Leadbeater, 2000). Although less studied, similarities in internalizing behaviors between clique members also have been found among high school students (Hogue & Steinberg, 1995). In turn, similar characteristics among clique mates likely facilitate the establishment of clique reputation and differentiation of one clique from another.

<u>Measurement of Behavioral Characteristics of Cliques</u>

Kindermann (1996) has discussed different ways to create an index of a 'composite psychological profile' of peer groups. Those methods include averaging group members' scores on characteristics of interest, summing group members' scores to reflect their cumulative effect, and using the variance of group members' scores when diversity of certain characteristics of group members is of interest. Each method has advantages and disadvantages. For example, averages may be misleading when peer groups consist of children with heterogeneous characteristics. However, Kindermann argued that averages are reasonable estimates of clique properties for homogeneous groups and generally provide the simplest and most comparable index. Given research showing that clique members tend to be similar to one another, the strategy of using average scores appears to be appropriate.

In previous studies, group homophily has often been determined based on discrete variables, such as achievement, aggression, or academic motivation (Cairns et al., 1988; Kindermann, 1993; Ryan, 2001). In the current study, in contrast, we employed a person-oriented, "holistic" approach to identify types of cliques. With a person-oriented approach (Bergman & Magnusson, 1997), variables of interest are analyzed simultaneously, and assessment of functioning is based on patterns, or profiles, of characteristics across multiple domains. Similar to person-oriented studies of individuals, clique types can be identified on the basis of patterns of characteristics as opposed to one discrete variable. To identify profiles of cliques across multiple domains, cliques - instead of individuals - served as the unit of analysis.

Identification of peer group profiles using a person-oriented approach has been reported in several recent studies. For example, Crosnoe and Needham (2004) have identified four types of adolescent friendship groups based on four behavioral characteristics (i.e., achievement, alcohol

use, emotional distress, and extracurricular participation). Different configurations of the four variables produced four types of friendship groups: Maladjusted (above average on alcohol use and emotional distress), disengaged (below average on all variables), engaged (above average on all variables), and high-functioning (above average on achievement and school participation). Crosnoe and Needham also have found that characteristics of friendship groups are dependent on the interplay of different behavioral characteristics. For example, friends' drinking was less problematic for engaged than disengaged friendship groups, probably because the former also displayed positive characteristics (i.e., achievement, extracurricular participation).

Estell, Farmer, Cairns, and Cairns (2002) have identified profiles of individuals as well as cliques among young elementary school children based on three variables: Popularity, aggression, and academics. In the cluster analysis for cliques, which was conducted separately for boys and girls, each clique's average scores for each of the three variables were cluster analyzed. They found the same cluster solutions for both individuals and cliques. That is, four individual and clique profiles were chosen as an optimal cluster solution for boys: High competence (low aggression, high popularity, and high academics), aggressive-competent (high aggression, high popularity, and high academics), low academics (lowest academics), and risk (high aggression, lowest popularity, and low academics). All types, except for 'risk', were found for girls. Estell and colleagues also explained that the correspondence between the individual profile and clique profile to which a child belongs supported the idea that children affiliate with peers who are similar to themselves.

<u>Current study</u>

Our interest in this study was threefold. First, we were interested in exploring types of cliques based on a broad spectrum of behavioral characteristics, including *athletic, bully, reactive*

aggression, prosocial, fun, smart, and social withdrawal. Previous research has suggested that

these social and behavioral characteristics play an important role in children's reputations among

peers and social status (e.g., Cairns, Leung, Gest, & Cairns, 1995; Lease, Musgrove, & Axelrod,

2002b; Masten, Morison, & Pellegrini, 1985; Rodkin, Farmer, Pearl, & Van Acker, 2000). As

discussed above, group homophily suggests that children form cliques in a non-random manner;

clique members tend to have similar behavioral characteristics, attitudes, and beliefs. Thus,

clique types might be meaningfully characterized by members' shared attributes. Specifically,

for each of the seven behavioral characteristics, average scores for each clique were calculated to

summarize the overall characteristic of the clique. The seven mean scores, in turn, were

submitted to a cluster analysis to identify clique profiles.

The cluster analysis used in this study differs from that of Estell et al.'s (2002) in two ways.

First, in the current study, both male and female cliques were simultaneously cluster analyzed

instead of doing a separate analysis for each gender, although behavior variables were

standardized by gender. Second, whereas Estell et al. included both behavioral and social status

(e.g., popularity) variables in their cluster analysis, we only included behavioral variables. Our

rationale was that behavioral characteristics and social status represent differing levels of

analysis. That is, behavioral characteristics often contribute to an individual's social status,

although the relation between particular behaviors and status is likely to vary across development

and social context. Therefore, we believed that less confounded profiles would be obtained by

utilizing variables at only one level of analysis (i.e., behavioral characteristics).

Second, clique members' average scores on social status indicators (i.e., likeability and

perceived popularity) were compared across clique types given the expected relationship

between individual social status and membership in a particular clique. For example, prosocial

skills are often positively related to peer acceptance, whereas social withdrawal tends to be negatively related to peer acceptance and popularity (Lease, Kennedy, & Axelrod, 2002a). Because clique types were determined on the basis of behavioral characteristics and clique members tend to be similar, higher status children would be more likely to be found in cliques whose members also demonstrate behaviors associated with higher status.

Our third, and primary, goal was to examine the association between types of cliques and children's social-emotional adjustment. Thus far, the extent to which children are liked by or popular among peers has often been used as an index of social success in peer groups. Of course, social status or individual characteristics may be the major contributor to children's social functioning. However, it was hypothesized that children's perception of social adjustment is also determined by clique membership. That is, the type of a clique to which a child belongs could affect how he or she is perceived and treated by others, which, in turn, could contribute to social satisfaction, above and beyond individual social status. To examine the unique role of clique membership in children's adjustment, we controlled for levels of individual social status when examining the relation between clique types and outcome variables. This was done by using social status variables as covariates.

Method

Participants

The participants were 473 elementary school students from 10 fourth-grade and 16 fifth-grade classrooms, between the ages of 9 and 12, from six rural elementary schools in the southeastern region of the United States. Of the six participating schools, two were majority-White (i.e., 79.4% White, 17.7% Black, and 2.8% from other backgrounds) and four were majority-Black (i.e., 80.6% Black, 16.2% White, and 3.1% other). Overall, the sample was, according to school

records, 54 % White, 43 % Black, and 3% some other ethnicity; 52 % were girls and 48% were

boys.

Procedure

　　Parental consent forms that included separate places for parents to sign whether they were

granting or denying consent to participate were sent home with students in participating

classrooms. Both parental consent and child assent were required for participation in the study.

Parental consent and child assent were obtained for 88.7% of possible participants.

　　As part of a larger study on children's peer relations, the questionnaires used in this study

were group administered and instructions for each measure were read aloud in the classroom by

one of the researchers while a second research team member circulated in the classroom to help

with individual questions. Due to the university's Institutional Review Board (IRB) guidelines,

only the names of students whose parents consented to their participation were included on the

peer nomination rosters. Thus, participants were not able to nominate non-participants on any of

the measures. Participants completed questionnaires in two one-hour sessions. Participants were

told that their responses to the questionnaire items would be confidential and were provided with

an index card to cover their answers. During data collection, nonparticipating students were

asked to read or draw quietly at their desks. All children in the participating classroom were

given a small gift to thank them, and class, for their time.

Measures

　　Social Cognitive Maps (SCM). The SCM method was originally developed as an interview

procedure based on children's free recall of which children "hang around together a lot" (Cairns

et al., 1985). As an alternative, a paper-and-pencil method was used in this study as has been

implemented in other studies (e.g. Kindermann, 1996). To identify cliques, children were asked

"Think about your classmates during school days, recess, and lunch. Are there some kids in your classroom who hang around and spend time together a lot? Who are they?" Children were asked to list as many groups as they could think of in their classroom, including their own group. Children were told that they could report peer groups of any size, including groups of two. Also, children were allowed to list peers as belonging to more than one group. The detailed SCM procedures to identify cliques have been discussed in previous studies (e.g., Cairns et al., 1985). Cairns, Leung, Buchanan, and Cairns (1995) reported test-retest reliabilities ranging from .74 to .84. Many studies have demonstrated the validity of the SCM method. For example, students have been observed to interact more frequently with their own group members (Cairns et al., 1985; Gest, Farmer, Cairns, & Xie, 2003) than nongroup members, and a high consensus rate has been reported (up to 96 %) regarding clique membership (Cairns et al., 1985).

Social Status. Two aspects of social status were assessed. First, sociometric social status was assessed by *like-most* nominations, whereby participants were asked to nominate three peers they "like to play with the most" (Coie et al., 1982). Second, perceived popularity was assessed by asking children to nominate their three classmates "who are the most popular at school" (Lease et al., 2002b; Parkhurst & Hopmeyer, 1998). Numbers of like-most and most-popular nominations received by each participant were standardized, within classroom and gender, to a mean of *0* and a standard deviation of *1*. Standardization by classroom allows for comparisons between classrooms of different sizes.

Behavioral Characteristics. As part of the larger study, children were asked to nominate up to three participating classmates who best fit 34 behavioral and social descriptors: 11 items were chosen for use in the present study. Most items were based on previous studies of children's peer relations (e.g., Lease et al., 2002a; Masten et al., 1985; Rodkin et al., 2000). Children were

instructed that they could nominate a person for more than one role. The numbers of behavioral nominations were summed and standardized, within classroom and gender, to a mean of *0* and a standard deviation of *1*, to be consistent with the standardization process for the social status variables. The items used in the study included: (a) *athletic* ('good at sports that are rough, like soccer, basketball, and football'), (b) *bully* ('tries to get what he or she wants by hitting, shoving, pushing, or threatening other'), (c) *reactive aggression* ('even when others *don't mean* to make them mad, this type of person overacts and is easily pushed to anger'), (d) *prosocial* was the average of two items ('cheers up peers when they are sad or upset about something'; 'cooperates, shares, and gives everyone a turn'), (e) *fun* ('fun to hang around, has a good sense of humor and has good ideas for things to do'), (f) *smart* ('makes good grades, is smart, and knows the right answer'), (g) *social withdrawal* was the average of two items ('looks like they want to play with others or join in a game, but seems afraid or shy'; 'seems sad or unhappy').

Self-reported Social-emotional Adjustment. A modified version of the Peer Network and Dyadic Loneliness Scale (PNDLS; Hoza, Bukowski, & Beery, 2000) was used to assess children's social satisfaction and loneliness. In a factor analysis of the original scale, conducted by Hoza et al., 2 factors were identified (i.e., network loneliness and dyadic loneliness), with 8 items loading on each factor. The top 7 loading items were selected for use in our modified version of the PNDLS. An additional subscale of 7 items was created to measure children's dissatisfaction associated with the perceptions of their influence on peers. Those items are listed in the appendix. All three subscales were administered, but only network loneliness and influence subscales were of interest in the current study and thus reported. An example item from the network loneliness subscale is 'some kids feel like they really fit in with others.' The response format of the PNDLS has pairs of sentences that contrast in terms of the choice of

interest (e.g., some kids feel like most kids like them vs. other kids feel hardly any kids like them). Children were first asked to choose one of the two sentences that better described themselves and then to specify whether the chosen sentence was *sort of true* or *really true* for them. To prevent response sets, sentences which describe more loneliness or dissatisfaction were sometimes placed first, and other times they were placed second in each pair of sentences. Participants completed a sample item before completing PNDLS subscales.

The scoring system for this type of scale is the same as a 4-point scale; for the two subscales used in this study higher scores indicate greater loneliness or dissatisfaction (i.e., 1 for very low loneliness or dissatisfaction and 4 for very high loneliness or dissatisfaction). Individuals' scores were computed by averaging the item responses on each subscale unless children missed more than three items of a subscale. The Cronbach alphas of the network loneliness and dissatisfaction with peer influence subscales were .80, and .76, respectively.

The Behavioral Assessment System for Children, Self-Report of Personality (BASC-SRP, Reynolds & Kamphaus, 1992) was used to measure self-reported social-emotional adjustment. The child form includes 152 items and produces 12 scales; four subscales – social stress, interpersonal relations, depression, and anxiety – were used in this study. The BASC-SRP scores are in the form of T-scores with a mean of 50 and a standard deviation of 10. Participants completed the child form (ages 8-11). For each item on the form, participants are asked to respond either "True" or "False" as to whether a statement accurately describes them. Higher scores on social stress, depression, and anxiety subscales indicate greater distress, whereas higher scores on the interpersonal relations subscale reflect more positive social interactions. Reliability evidence is available from the BASC-SRP manual including internal consistency,

test-retest reliability, and interrater reliability (see Reynolds & Kamphaus, 1992). The manual

also provides evidence for construct validity based on factor analytic results.

<div align="center">Results</div>

The results are presented in three sections. In the first section, we reported descriptive

characteristics of the cliques identified by the SCM method, in addition to the results of the

cluster analysis used to determine types of cliques based on the seven behavioral dimensions. In

the second section, average or mean levels of the social status (i.e., likeability and perceived

popularity) of clique members were compared across clique types. Finally, we examined whether

children's clique membership contributed uniquely to their social and emotional well-being after

controlling for individual-level social status.

Description of Cliques

Children's social network patterns were analyzed with the SCM 4.0 computer program (1998,

Center for Developmental Science of the University of North Carolina at Chapel Hill). The

output of the SCM program includes discrete cliques; the SCM procedure identified 94 groups

with 441 students. The size of the cliques ranged from 2 to 10 members ($M = 5.5$). On average,

male cliques had 6 members, whereas female cliques had 5.11 members. This difference was

statistically significant, t (398) = 4.39, $p < .01$. A total of 18 cliques (19 %) were dyadic and 76

cliques (81%) consisted of three or more members. There were 17 (3.7 %) students who

belonged to more than one clique, and 4 (.3 %) students who did not belong to any clique. The

majority of cliques were homogeneous in terms of gender (n=87, or 93%) and ethnicity (n=61, or

65%). From the total sample, children with multiple group memberships, isolates, and gender-

heterogeneous cliques were excluded in the following analyses. Inclusion of children with

multiple group memberships was avoided; otherwise, the characteristic profiles of two different

cliques would affected by the same child who belongs to both cliques. Also, despite the wide acknowledgement that older elementary school children primarily associate with same-gender peers (Graham & Cohen, 1997; Maccoby, 2000), the literature is unclear as to the characteristics of children who participate in mixed-gender cliques compared to those who belong to same-gender cliques. Thus, children who belong to mixed-gender cliques might need a separate investigation. As a result, the final sample for the analyses consisted of 87 cliques of 400 children.

Types of Cliques

Types of cliques were determined in two steps. First, a clique's average or mean score on each of seven behavioral dimensions was calculated. Second, the 87 cliques were submitted to a cluster analysis, with the seven mean behavioral scores serving as clustering variables. Choice of clustering procedure was based on the recommendations of Blashfield and Aldenderfer (1988) and others (Huberty, DiStefano, & Kamphaus, 1997; Kamphaus, Huberty, DiStefano, & Petoskey, 1997). A two-step procedure, consisting of hierarchical (i.e., Ward) and partitioning (i.e., K-means) methods, was used. The initial cluster solution was identified by the Ward method, a hierarchical agglomerative technique that minimizes within-cluster variances. The Ward solution (i.e., cluster seeds) became the basis of a K-means procedure, which is an iterative partitioning technique. An optimal solution is found after multiple passes are made through the data. Euclidean distance was used as the similarity index to determine the distance between each unit.

Given the number of variables and our hypotheses, four, five, and six cluster solutions were run and evaluated. Five clusters were retained over four and six cluster solutions because the five cluster solution was most consistent with previous findings and the literature on children's peer

group characteristics (e.g., Rodkin et al., 2000; Estell et al., 2002; Xie, Cairns, & Cairns, 1999).

Further, the four cluster solution failed to differentiate cliques on the variables of aggression and

athletic skills, which often have been found to be distinctive characteristics among children. The

six cluster solution was similar to the five cluster solution except that the former identified two

types of withdrawn cliques. The five cluster solution was considered more parsimonious than the

six cluster solution, while describing the data adequately. The results of the cluster analyses are

presented in Table 1, including the means and standard deviations across the seven behavioral

dimensions for each clique type, the number of each clique type by gender, and the average

clique size. Each cluster was named based on its overall pattern of scores. For descriptive

purposes, ±.30 was used as a cutoff to distinguish above and below average mean scores.

Cluster 1 was labeled *Average* because scores on all seven dimensions of behaviors were in

the average range (*n*=35, 40%). *Cluster 2* was labeled *Withdrawn* because of mean scores above

average on social withdrawal and average on prosocial skills (*n*=18, 21%). *Cluster 3* was labeled

Tough because of elevations on athletic, bully, and reactive aggression as well as average on fun

(*n* =11, 13%). The label for this cluster was adopted from a previous study where a similar

configuration was found for a cluster of boys (Rodkin et al., 2000). *Cluster 4* was labeled

Incompetent/Aggressive because of mean scores above average on bully and reactive aggression,

below average on prosocial, smart, and fun, and average on social withdrawal (*n* =9, 10%).

Cluster 5 was labeled *Competent* because children in this cluster were perceived to be not only

prosocial but also fun and smart (*n* =14, 16%).

A 5 (clique types) × 2 (clique gender) chi-square test indicated that clique types were equally

represented by gender, χ^2 (4, *n* =87) = 5.96, *p* = ns. However, there was a statistically significant

difference in overall clique size across clique types, F (4, 395) = 75.84, *p* <.01. As reported in

Table 1, the average size of *Average* (*M* = 6.7) cliques was bigger than any other clique type. Interestingly, the standard deviations of the seven behavioral domains were consistently low for the *Average* clique, suggesting that *Average* cliques are not merely large, heterogeneous groupings but consist of members with average levels of behavioral characteristics. The *Withdrawn* (*M* = 3) and *Incompetent/aggressive* (*M* = 3.4) cliques were similar in size and were smaller than other clusters. This is fairly consistent with Bagwell and colleagues' (2000) findings that sociometrically rejected and neglected children belong to smaller cliques than popular, controversial, and average peers; the relatively low social status of children in *Withdrawn* and *Incompetent/aggressive* cliques is discussed in the following section. Finally, the *Tough* and (*M* = 5.2) *Competent* (*M* = 4.9) cliques were similar and moderate in size.

Clique Types and Levels of Social Status

Mean levels of social status (i.e., likeability, perceived popularity) were compared across the five clique types, with the results presented graphically in Figure 1. Analyses of Variance (ANOVA) were conducted to compare the social status, as indicated by continuous likeability and perceived popularity scores, of children across the five clique types. A significant difference was found in average likeability scores across clique types, $F(4, 395) = 6.99$, $p < .01$. Pairwise comparisons indicated that, on average, children in *Withdrawn* cliques (*M* =-.42, *SD* = .78) and in *Incompetent/aggressive* cliques (*M* =-.56, *SD* = .74) were not as well-liked as children in *Competent* (*M* = .27, *SD* = .98), *Average* (*M* =.07, *SD* = .94) and *Tough* (*M* = .11, *SD* =.99) cliques. This is consistent with previous findings that high levels of social withdrawal, aggression, and low levels of prosocial skills, characteristics of children in *Withdrawn* and *Incompetent/aggressive* cliques, are associated with low levels of social acceptance (e.g., Lease

et al., 2002a). Surprisingly, likeability scores did not statistically distinguish *Average, Competent*, and *Tough* cliques from one another.

A statistically significant difference also was found in average perceived popularity scores across clique types, F (4, 395) = 13.15, *p* < .01. Pairwise comparisons indicated that, on average, children in *Tough* (*M* = .34, *SD* = .96) and *Competent* cliques (*M* = .35, *SD* = 1.06) were perceived to be more popular than children in *Average* (*M* = -.01, *SD* = .92), *Withdrawn* (*M* = -.66, *SD* = .42), and *Incompetent/aggressive* (*M* = -.44, *SD* = .46) cliques. The high levels of perceived popularity for *Tough* cliques were not surprising, given the documented association between aggression and perceived popularity (e.g., LaFontana & Cillessen, 2002; Parkhurst & Hopmeyer, 1998; Rodkin et al., 2000). Children in *Average* cliques also were perceived to be more popular than those in *Withdrawn* and *Incompetent/aggressive* cliques.

Comparison of Social Satisfaction and Emotional Well-being across Clique Types

In this set of analyses, we compared children's self-reported social satisfaction and social-emotional adjustment across clique types. Six social outcomes were examined: Interpersonal relations (i.e., perception of having good social relationships with peers), social stress (i.e., feelings of isolation and stress in social situations), depression, anxiety, network loneliness (i.e., loneliness associated with isolation from the peer group), and dissatisfaction with peer influence (i.e., children's perceptions of their own influence on their peers). The means and standard deviations of the variables are reported in Table 2. However, because we were interested in the contribution of clique membership to children's adjustment after taking into account the effect of individuals' social status on outcome variables, we conducted a series of Analyses of Covariance (ANCOVA) with individuals' likeability and perceived popularity serving as covariates. Separate ANCOVAs were conducted for each covariate because using multiple covariates should

be avoided when they are considerably correlated; a moderate correlation was obtained between likeability and perceived popularity ($r = .49$).

The results of ANCOVAs are presented in Table 3 along with adjusted means on the outcome variables. Type of clique had significant effects on all outcome variables, with the exception of social stress, above and beyond children's social status. It should be noted that the ANCOVA was not conducted for *dissatisfaction with peer influen*ce with popularity as a covariate because there was a significant interaction between perceived popularity and clique type. ANCOVA is not appropriate when there is an interaction between the covariate and independent variables (Keppel, 1991). Also, it was found that the covariates had significant effects on only several outcome variables, indicating that the social status variables (i.e., likeability, popularity) explained only a small amount of variance in the outcome variables.

In the next set of analyses, we computed a series of post-hoc, pairwise comparisons to examine differences between clique types on the outcome measures. Given that the two status covariates in the ANCOVAs were not highly related to the dependent variables, we conducted these post hoc tests with the original means (see Table 2) instead of the set of 11 adjusted means (reported in Table 3) to minimize the number of analyses. The results of the Duncan pairwise comparisons are presented in Table 2. The scores of interpersonal competence were higher for children in *Competent* and *Average* cliques than those in *Withdrawn* and *Incompetent/aggressive* cliques. The levels of depression were the lowest for children in *Competent* cliques. The levels of anxiety were higher for children in *Withdrawn* cliques than those in *Average* and *Competent* cliques. The scores for network loneliness were higher for children in *Withdrawn* and *Incompetent/aggressive* cliques than those in *Competent* cliques. Finally, dissatisfaction with

perceived peer influence was lower for children in *Tough* cliques than for children in *Withdrawn* and *Incompetent/aggressive* cliques.

Discussion

In recognition of the significance of the peer context on children's development, the current study aimed to identify different types of cliques and to compare clique types on the basis of peer-reported social status and self-reported adjustment outcomes. The results of this study broaden knowledge of children's cliques in two major ways. First, we determined types of cliques based on a broad range of behavioral characteristics, hoping to capture a more complete picture of the shared attributes among clique members and the clique's 'collective reputation' with peers. That is, we believe that clique type reflects a clique's 'collective reputation' in the eyes of peers, who are likely to attribute clique characteristics to all members in the clique. Thus, a clique's collective reputation is likely to color peers' perceptions, attitudes, and even behavior towards the members of that clique which, in turn, is likely to impact children's self-identity and their social experience. Therefore, the second goal was to examine whether children's levels of self-reported social and emotional functioning differed depending on the type of clique to which they belonged, after controlling for their own individual social status. Overall, the results indicate that knowledge of clique characteristics provides insight into how children's development might be affected by shared peer context that the clique provides.

We applied a person-oriented, or holistic, approach to identifying different types of cliques. The results were also fairly consistent with previous studies that examined types of individuals and groups with diverse populations. For example, Rodkin et al. (2000) identified similar types of behavioral configurations for boys. Specifically, the configurations of *Model*, *Tough,* and *Passive* boys in their study were similar to *Competent*, *Tough*, and *Withdrawn* cliques,

respectively, in the current study. Yet, Rodkin et al.'s study is different from the current one in that individuals in that study, instead of cliques, were clustered on the basis of teacher ratings, instead of peer ratings. Further, with a sample of 4th-7th grade, inner-city, African-American children, Xie et al. (1999) identified *Competent*, *At-Risk*, and *Average* configurations for both individuals and cliques. Similarly, among early elementary school children, *Competent*, *Aggressive-competent*, *Low-academics*, and *Risk* profiles were determined for both individuals and cliques (Estell et al., 2002). It appears that the different configurations reported across studies primarily are the result of the particular variables used in the cluster analyses. Consistently, however, prosocial attributes, aggression, and academic traits (e.g., smart) have been found to play an important role in differentiating clique types.

Given the documented association between behavioral characteristics and social status, it was not surprising to find support for our hypothesis that members' average social status (e.g., likeability, popularity) should differ across types of cliques. Overall, children in *Competent* and *Tough* cliques were more liked by and more popular among peers than those in other cliques. Previous studies have suggested that the high levels of peer acceptance and popularity of children in *Competent* cliques might be attributed to their competency in social and academic skills (LaFontana & Cillessen, 2002; Lease et al., 2002a). However, aggressive behaviors often have been found to be associated with perceived popularity (LaFontana & Cillessen, 2002; Parkhurst & Hopmeyer, 1998). In addition, high levels of athletic skills and other similarly desirable characteristics also seem to contribute to the high levels of perceived popularity of children in *Tough* cliques (Lease et al., 2002a; Parkhurst & Hopmeyer, 1998; Rodkin et al., 2000).

To the contrary, children in *Withdrawn* and *Incompetent/aggressive* cliques were the least liked by and the least popular among peers. Children in *Withdrawn* and *Incompetent/aggressive* cliques were characterized by behaviors that have been found to be associated with low social status. That is, despite their average levels of social skills, children in *Withdrawn* cliques were perceived to be highly withdrawn, not athletic, and not fun. Children in *Incompetent/aggressive* cliques were perceived to be aggressive while lacking in social, academic, and athletic skills. Whereas clique members' mean levels of likeability and popularity were compared in the current study, it could be equally interesting to examine the degree to which clique types are differentiated by mean clique levels of peer dislike.

The results supported that, even with individual social status taken into account, the type of clique a child belongs to contributed to many aspects of self-reported social and emotional adjustment, including competence in interpersonal relations, depression, anxiety, loneliness in network participation (i.e., loneliness associated with isolation from the peer group), and dissatisfaction with peer influence (i.e., children's perceptions of their influence on peers). However, we were surprised to find that the effects of the two covariates (i.e., like-most, most-popular) on outcome variables were not significant for many outcome variables, although popularity was more often associated with outcome variables than likeability.

Overall, children in *Competent* and *Average* cliques were found to be better adjusted than children in other cliques: They reported higher levels of satisfaction in interpersonal relations and lower levels of anxiety and peer group isolation. Children in *Average* cliques endorsed similar levels of adjustment to those in *Competent* cliques across domains except that children in *Competent* cliques endorsed lower levels of depression than children in *Average* cliques. In contrast, children in *Withdrawn* and *Incompetent/aggressive* cliques endorsed low competency in

interpersonal relations, low satisfaction with peer influence, elevated symptoms of anxiety, and high peer group isolation. Interesting patterns of adjustment outcomes were found for children in *Tough* cliques. They reported similar levels of interpersonal competence, depression, and anxiety with children in *Withdrawn* and *Incompetent/aggressive* cliques. However, children in *Tough* cliques appeared to be as satisfied as those in *Average* and *Competent* cliques in terms of peer involvement and their perceived influence on peers. Not surprisingly, children in *Tough* cliques reported lower levels of dissatisfaction with peer influence than those in *Withdrawn* and *Incompetent/aggressive* cliques.

The consistently low levels of adjustment outcomes reported by children in *Withdrawn* cliques warrant further consideration regarding identification and intervention for socially withdrawn children. Whereas social withdrawal has been widely studied at the individual and dyadic level, it has not received as much attention at the group level. For example, social withdrawal has been found to contribute to victimization and peer rejection (Hanish & Guerra, 2000; Rubin, LeMare, & Lollis, 1990), and children tend to be more similar to their friends than to their nonfriends in social withdrawal (Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998). At a group level, the results of this study suggest that social withdrawal might be an important characteristic that distinguishes one type of clique from the others. Also, socializing with other socially withdrawn children is likely to serve to maintain, and even reinforce, the specific interaction pattern of these children. Thus, interventions targeted at helping socially withdrawn children might need to consider clique dynamics in addition to individual behavior characteristics.

Limitations and Future Directions

Potential limitations and cautions should be noted regarding the cluster analysis used for the identification of clique types. First, because the unit of analysis was cliques instead of individuals, the sample size for the cluster analysis was relatively small. However, it is also the case that guidelines have not been set with regard to the number of units needed per clustering variable. Given 87 cliques with 7 clustering variables used in this study, more than 10 'units' were available per clustering variable. This is consistent with the guideline in regression analysis in which 10 cases per variable is often considered reasonable. Second, the cluster solution was not internally cross-validated by splitting samples because of the small number of cliques. As discussed above, however, the clique types determined in this study were fairly consistent with those that have been found in previous studies. Future studies that use a broader range of behavioral characteristics with a larger number of cliques might be useful to further validate the types of cliques found in this study. Third, despite the fairly high active consent rate (88.7 %), there was a considerable number of classrooms where three or more students did not participate in the study (i.e., 14 out of 26 classrooms). This could have affected the results because it is possible that the non-participating students form a clique by themselves. However, independent analyses without those classrooms were not conducted in this study because excluding those classrooms resulted in a significant reduction in sample size.

There remain many further questions to be addressed that would build on the findings of the current study. First, it would be interesting to examine whether the interaction between clique type and individual social status affects children's social adjustment. For example, is it a protective factor for a rejected child to belong to a *Competent* clique? Or, does it place a rejected child at increased risk in he or she belongs to a *Withdrawn* or *Incompetent/aggressive* clique?

Bagwell et al. (2000) have speculated that, for a rejected child, participating in a low status clique might contribute to negative developmental outcomes; opportunities for developing more effective social skills are likely limited for a rejected child who associates primarily with other socially unskilled peers.

Second, among many characteristics and properties of cliques, this study specifically examined the association between "type of clique" and children's social and emotional adjustment. Other clique characteristics are likely to make a difference as well with regard to developmental outcomes, such as reciprocal friendships among members or the degree to which clique members are perceived to be similar. Children in cliques whose members are interconnected with a high density of reciprocal friendships are likely to have different social experiences from those in rather loosely connected cliques. In addition, future research will focus on whether or not it is beneficial for children to belong to a clique whose members are perceived to be similar to each other. The answer to that question is likely to further depend on the type of a clique to which a child belongs. Whereas high perceived similarity might be beneficial for children in cliques with a prestigious reputation, high perceived similarity might adversely affect children's adjustment when they are in a clique with a negative reputation. Examination of such interactions is expected to further reveal the complex interplay of clique properties in their contribution to children's social experiences in the peer system.

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Table 1-1. Means and Standard Deviations of Clustering Variables by Clique Type and for the Overall Sample of Cliques (N=87)

	Average	Withdrawn	Tough	Incompetent /aggressive	Competent	Overall
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Athletic	.07 (.22)	**-.59 (.28)**	**.62 (.57)**	**-.56 (.22)**	-.06 (.42)	-.09 (.50)
Bully	-.02 (.25)	**-.56 (.29)**	**.66 (.43)**	**.31 (.52)**	**-.33 (.38)**	-.06 (.51)
Reactive aggression	-.05 (.25)	**-.47 (.32)**	**.58 (.32)**	**.32 (.49)**	-.19 (.37)	-.04 (.45)
Prosocial	-.05 (.26)	.18 (.56)	**-.31 (.47)**	**-.72 (.24)**	**.46 (.46)**	-.02 (.51)
Fun	-.02 (.25)	**-.38 (.37)**	.14 (.36)	**-.70 (.25)**	**.59 (.29)**	-.05 (.47)
Smart	-.10 (.28)	-.17 (.47)	-.11 (.34)	**-.54 (.20)**	**.79 (.43)**	-.02 (.51)
Withdrawal	-.07 (.19)	**.74 (.40)**	**-.33 (.30)**	.22 (.54)	-.10 (.50)	.09 (.50)
N of male cliques	20	7	4	2	4	37
N of female cliques	15	11	7	7	10	50
Average clique size	6.7	3	5.2	3.4	4.9	5.5

Note. ±3.0 was a cut-off point and values greater than or equal to |3| are bolded.

Table 1- 2. Means and Standard Deviations on Outcome Variables by Clique Type

	Average		Withdrawn		Tough		Incompetent /aggressive		Competent	
	M	SD	M	SD	M	SD	M	SD	M	SD
Interpersonal relations	49.83 a	11.25	44.08b	14.59	48.85a,b	11.20	44.68b	13.74	52.59a	8.77
Social stress	49.13	10.68	52.42	10.84	50.67	9.44	50.89	10.36	47.61	9.64
Depression	52.59a	11.03	55.13a	12.00	54.58a	9.13	54.21a	13.09	48.24b	10.05
Anxiety	48.38b	10.46	53.23a	10.11	51.31a,b	10.20	51.93a,b	10.70	48.22b	9.85
Network loneliness	2.00b,c	.73	2.46a	.91	1.91b,c	.70	2.21a,b	.98	1.71c	.56
Influence dissatisfaction	2.32b,c	.69	2.66a	.79	2.13c	.68	2.44a,b	.82	2.22b,c	.66

Note. Within rows, means with different subscripts differ significantly at p < .05 in Duncan's multiple-range post hoc test. There was not a significant group difference in Social Stress.

Table 1- 3. Adjusted Means of Outcome Variables Across Clique Types

	Average	Withdrawn	Tough	Incompetent/ Aggressive	Competent	F	p
Covariate: Likeability							
Interpersonal Relations	49.67	44.86	48.77	45.71	52.08	$F(4, 377)=3.11$	.02
Social Stress	49.19	52.11	50.70	50.48	47.81	$F(4, 378)=1.32$	.26
Depression	52.65	54.78	54.63	53.75	48.49	$F(4, 376)=2.81$	.03
Anxiety	48.37	53.31	51.30	52.03	48.16	$F(4, 377)=3.10$	.02
Network Loneliness	2.01	2.43	1.92	2.16	1.73	$F(4, 382)=5.88$	.00
Influence Dissatisfaction	2.33	2.65	2.13	2.43	2.22	$F(4, 383)=3.78$	.00
Covariate: Popularity							
Interpersonal Relations	49.77	45.24	48.31	45.44	51.90	$F(4, 377)=2.87$	.02
Social Stress	49.16	51.65	51.05	50.39	48.07	$F(4, 378)=1.10$	.36
Depression	52.62	54.48	54.90	53.79	48.63	$F(4, 376)=2.68$	.03
Anxiety	48.39	53.10	51.38	51.85	48.30	$F(4, 377)=2.85$	.02
Network Loneliness	2.01	2.38	1.96	2.16	1.75	$F(4, 382)=4.49$	.00

Note. Likeability had a significant effect on *interpersonal relations*; perceived popularity had significant effects on *interpersonal relations, social stress, network loneliness,* and *influence dissatisfaction.*
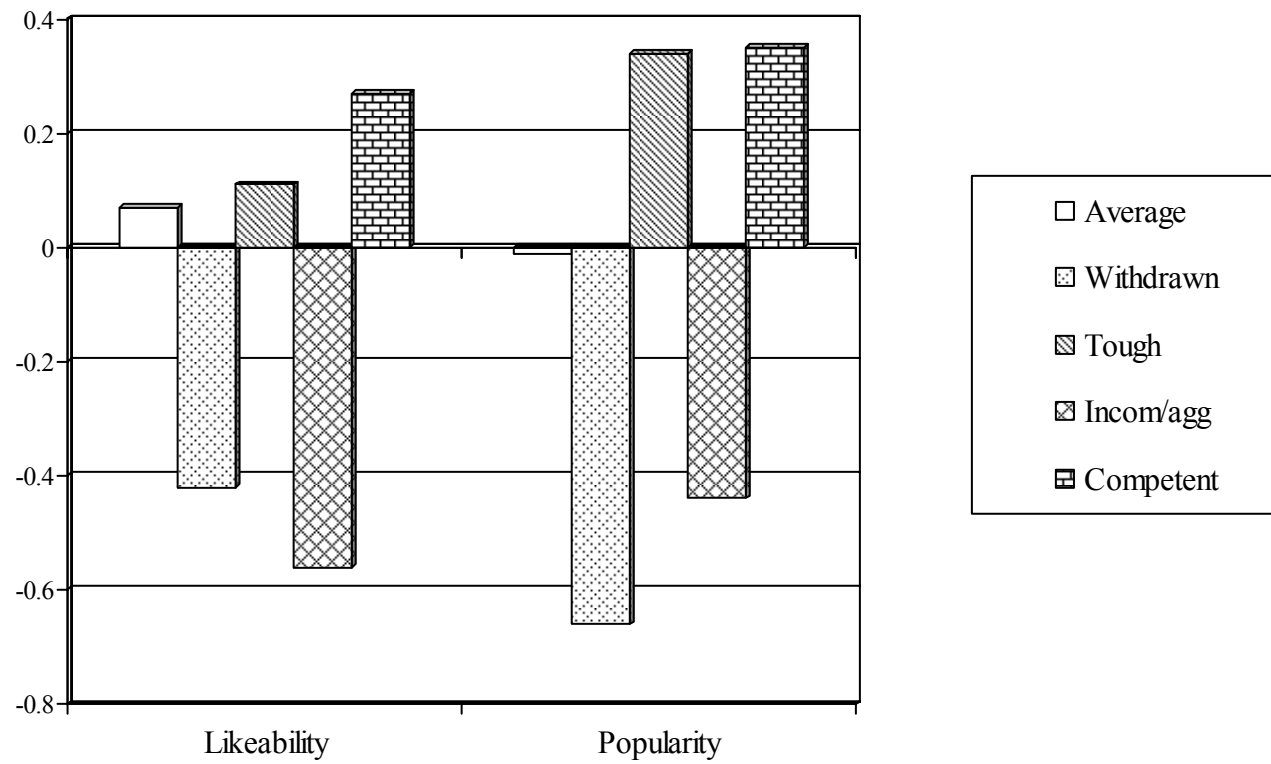
Figure 1 - 1. Scores on Mean Social Status Variables by Clique Type

Appendix

Dissatisfaction with Perceived Peer Influence

Really True for me	Sort of True for me					Sort of True for me	Really True for me
a._____	_____	Some kids would rather play outdoors in their spare time	**BUT**	Other kids would rather watch T.V.		_____	_____
1._____	_____	Some kids often get to choose play which ground/after school activities the group plays.	**BUT**	Other kids don't get to choose the playground/after school activities the group plays.		_____	_____
2._____	_____	Some kids are looked to when the group makes a decision.	**BUT**	Other kids don't feel they are looked to when the group makes a decision.		_____	_____
3._____	_____	Some kids feel peers take their opinions seriously.	**BUT**	Other kids feel peers often ignore their opinions.		_____	_____
4._____	_____	Some kids feel they have influence among their peers.	**BUT**	Other kids do not feel they have influence among their peers.		_____	_____
5._____	_____	Some kids usually get what they want when they are with peers.	**BUT**	Other kids do not get what they want when they are with peers.		_____	_____
6._____	_____	Some kids feel they are popular among their peers.	**BUT**	Other kids wish they were popular among their peers.		_____	_____
7._____	_____	Some kids are thought to be really cool in school.	**BUT**	Some kids just wish they were thought to be cool in school.		_____	_____

CHAPTER 3

THE INTERACTION BETWEEN CLIQUQE TYPE AND PERCEIVED COHESION ON

CHILDREN'S SOCIAL ADJUSTMENT[2]

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[2] Kwon, K. and A. M. Lease. To be submitted to International Journal of Behavioral Development

Abstract

In a sample of 473 fourth and fifth grade elementary school students, the interaction was examined between the type of clique to which a child belongs and the effect of clique's perceived cohesion on his or her social and emotional adjustment. The five different clique types included: *Average, Withdrawn, Tough, Incompetent/aggressive, and Competent*. Perceived cohesion concerned the degree to which clique members were perceived to be similar to each other, using a multidimensional scaling (MDS) approach. Correlation analyses confirmed, as expected, that children who often affiliate with each other are perceived to be similar when the similarity was assessed based on implicitly-held (i.e., unconstrained) judgments. However, the levels of perceived cohesion varied across clique types and sizes. Finally, it was found that perceived cohesion moderates the link between the type of clique to which a child belongs and adjustment outcomes. Whether it is beneficial or not to belong to a highly cohesive clique seems to depend on the type of clique to which a child belongs.

Introduction

Children's peer network approaches have emphasized that the peer context in which a child is

embedded has a substantial influence on his or her social development (Cairns, Xie, & Leung,

1998; Kindermann, 1998). For example, children's social behaviors as well as perceptions of self

and others are shaped through interactions in their peer group (Brown, 1987; Cairns, Leung, &

Cairns, 1995). Beginning in middle childhood, children tend to affiliate with some peers more

often than others, forming peer networks called 'cliques' (Crockett, Losoff, & Petersen, 1984).

Children in the clique tend to share similar social information and experiences, and the

interactions between clique members have been found to be frequent, intense, and exclusive

(e.g., Gest, Farmer, Cairns, & Xie, 2003). Also, numerous studies have demonstrated that clique

members are similar in many social characteristics, including aggression, rates of school dropout

and early pregnancy, grades, externalizing problems, academic motivation, and internalizing

problems (Cairns, Cairns, Neckerman, Gest, & Gariépy, 1988; Henrich, Kuperminc, Sack, Blatt,

& Leadbeater, 2000; Hogue & Steinberg, 1995; Kindermann, 1993; Ryan, 2001; Xie, Cairns, &

Cairns, 2001).

To understand the effect of the clique context on children's development, one important

factor to consider is the clique's composition, such as the social and psychological characteristics

of clique members (Kindermann, 1996). Thus far, examinations of clique members'

characteristics have focused on a single dimension, such as aggression and academic motivation

(e.g., Cairns et al., 1988; Kindermann, 1993). In contrast, several recent studies have attempted

to identify different types of cliques based on multiple domains or dimensions of interest,

employing a person-oriented, or 'holistic,' approach (e.g., Estell, Farmer, Cairns, & Cairns,

2002; Kwon & Lease, 2006; Xie, Cairns, & Cairns, 1999). Specifically, cluster analyses have

been used in which multiple variables are analyzed simultaneously, resulting in clique types

which are based on patterns, or profiles, of characteristics across multiple domains. In one such

study conducted by Kwon and Lease (2006), they demonstrated that the type of clique to which a

child belongs accounts for variability in social and emotional functioning above and beyond the

child's social status. Their results appear to support the notion that social and behavioral

characteristics of the clique to which a child belongs serve as an important context for children's

social development.

The current study extends a previous study about the contribution of membership in a

particular clique type to children's social and emotional adjustment (Kwon & Lease, 2006), by

looking at the interplay between clique type and the 'perceived cohesion' of the child's particular

clique on children's adjustment. For the purpose of this study, perceived cohesion of a clique

was operationally defined as the degree to which clique members were viewed as similar to one

another. According to that definition, members in a highly cohesive clique are perceived to be

very similar to each other. Thus, the definition of perceived cohesion in the current study is

different from the common definition of emotional or affective bonding to one's group (e.g.,

Bollen & Hoyle, 1990). Rather, perceived cohesion in the current study concerns individuals'

conceptions of the clique as a whole, or their cognitive construal of the 'groupness' of the clique.

This is similar to Campbell's (1958) notion of 'entitativity' which is defined as the degree to

which a social group is perceived as a cohesive entity. Intuitively, some cliques are likely viewed

as a more cohesive unit than others, which might serve as an important contextual variable for

children's socialization in the clique. Specifically, we were interested in investigating the

interaction between clique types and perceived cohesion on self-reported psychological

functioning and social dissatisfaction. In other words, whether children feel good about their cliques being perceived to be cohesive might depend on the type of clique to which they belong.

Clique Types and Collective Reputations

As noted above, several studies have demonstrated that different types of cliques exist, based on members' social and behavioral characteristics. However, the types of cliques identified have varied slightly across studies because each study has used different domains of behavioral characteristics. Also, researchers have had different purposes for identifying clique types. The two studies by Estell et al. (2002) and Xie et al. (1999) demonstrated the correspondence between individual behavioral configurations and social network configurations, confirming the group homophily phenomenon. In contrast, Kwon and Lease (2006) demonstrated that the social status of various clique types differs anfd that the clique's social status contributes to well-being, even after controlling for individual levels of social status(i.e., likeability, popularity).

Several social processes have been discussed in the literature to explain the mechanism by which clique membership might affect the perceptions and social functioning of self and others. One's behavior is often predicted based on his or her personality traits, but people might also rely on one's group membership, especially the group's reputation, when trying to understand and predict his or her behaviors (Salzinger, 1982). For instance, as far as one is identified as a group member (e.g., ethnic or religious group), people expect him or her to behave in a way that is typical of the group (Salzinger, 1982). Although children's cliques are fairly informal groups, similar effects might also be expected for children's cliques. More specifically, the 'birds of a feather' phenomenon likely leads to the emergence of a 'collective reputation' of a clique based on members' shared behavioral attributes (Kwon & Lease, 2006). Thus, the clique's composition as well as the child's individual attributes contributes to the child's social reputation.

Importantly, social reputations reflect peer perceptions, which, in turn, partly determine peers'

behaviors and attitudes toward the child (Rogosch & Newcomb, 1989). Again, the child's

interpretation and internalization of others' attitudes toward him or her likely affects the child's

self-perceptions and social functioning, (e.g., Cooley, 1902), in addition to well-being.

Cliques and Perceived Cohesion

It has been suggested that perceptions of individuals are influenced by the characteristics of

the social groups to which they belong. Particularly, perceptual or cognitive aspects of

similarities between group members have been widely studied by social psychologists. For

example, Simon, Pantaleo, and Mummendey (1995) explained that similarities are not only the

basis of one's construal of social groups but also an outcome of understanding of a person as a

group member: As long as a person is identified as a group member, he or she is perceived to be

similar to others in the group. In addition, as the notion of group 'entitativity' suggests, groups

vary in the extent to which the members are perceived as a coherent unit (Hamilton & Sherman,

1996). It is also reasoned that the interchangeability between individuality and group

characteristics depends to some degree on the perceived cohesion of the group. That is, when a

group is perceived to be highly cohesive, the overall impression of the group easily transfers to

all members in the group (Crawford, Sherman, & Hamilton, 2002).

Self-categorization theory (SCT; Turner, 1987) also suggests that similarities between

individuals and their group's membership become intensified as they are identified as part of a

group. This often leads to suppression of individual characteristics and accentuation of group

characteristics. Similarly, as a child is conceived as a member of a particular clique, the

'collective reputation' of the clique might lead his or her peers to perceive the child to be more

similar to other clique members than he or she really is. Erwin (1993) has also argued that

similarity effects likely operate in children's perceptions, so that children give much weight to similarities between friends and network members as they are recognized as such. This indicates that, in addition to actual similarities between clique members, perceptual biases might lead children to perceive clique members to be similar to each other more than they actually are. As such, when clique members are perceived to be highly similar, or cohesive, the prevailing clique characteristics or reputation are more likely to overshadow individual characteristics than when the clique is less cohesive. For example, a child's aggressiveness might be more overestimated when he or she is in a highly cohesive group comprised of aggressive children than if he or she is in an aggressive group characterized by low cohesion.

Perceived cohesion can be measured in different ways. For example, Lickel and colleagues (2000) measured it directly, asking college students to rate the degree of perceived entitativity of different types of social groups (e.g., family, students enrolled in a class, women, doctors). Alternatively, the degree of 'groupness' of a clique might be measured indirectly because clique membership is not known a priori. Thus, we chose to use implicitly-held (unconstrained) similarity judgments, allowing children to "choose" criteria based on a 'gestalt' of features, including demographics, behavior, personality as well as individuals' stereotypes (see Jones, 1982). With this approach, Lease and colleagues (2001; 2003a; 2003b) recently have investigated children's internal perceptions of their peer group's organizational structure using multidimensional scaling (MDS) techniques. MDS is a descriptive statistical technique that uses some type of proximity data, such as similarities, to "uncover" the structure individuals place on a set of given objects (see Davison, 1983; Kruskal & Wish, 1978). The output of an MDS includes an n-dimensional geometric representation of the objects in the set; the geometric distance and orientation between those objects in the MDS solution is interpretable as the

psychological distance between them (Jones & Young, 1972). In turn, the distances between

clique members can become the basis of assessing the perceived cohesion of the clique.

Current Study

The overarching goal of the current study was to examine the interaction between the type of

clique to which a child belongs and the effect of perceived cohesion of his or her clique on social

and emotional adjustment. The first step towards this goal was to identify the discrete cliques

present in each classroom as well as each clique's profile or type, by following the procedure

reported in Kwon and Lease (2006). Specifically, discrete cliques were identified using the

Social Cognitive Map (SCM) procedure (Cairns, Perrin, & Cairns, 1985). Next, five clique types

were identified using cluster analysis with cliques as the unit of analysis. Clique members' mean

scores for each of seven behavioral variables (i.e., *athletic, bully, reactive aggression, prosocial,*

fun, smart, withdrawal) served as clustering variables. The five cluster solution, chosen by Kwon

and Lease as the most optimal, contained the following clusters or clique types: *Average*

(average on all behavioral characteristics), *Withdrawn* (above average on social withdrawal and

average on prosocial), *Tough* (above average on athletic, bully, reactive aggression and average

on fun), *Aggressive/Incompetent* (above average on bully and reactive aggression, and below

average on prosocial, bright, fun), and *Competent* (above average on prosocial, fun, bright).

Descriptive characteristics for each of the five clusters are presented in Table 1.

The second step in the study was to develop a measure of each clique's perceived

cohesiveness. Perceived cohesion was conceptualized as the peer group's construal of the

'groupness' of any given clique within the organizational structure, based on the degree to which

clique members are perceived to be similar to one another. As noted previously, we used

multidimensional scaling (MDS) to generate this measure of perceived cohesion. Specifically,

we asked children to judge the degree to which dyads of same-gender peers are similar, without providing any explicit criteria for making that determination, and then used multidimensional scaling to analyze these unconstrained similarity ratings (see Lease et al., 2001; 2003a; 2003b). Lease and colleagues (2003b) used MDS analyses to study the organizational structure of 4th and 5th grade peer groups and found that the most consistently significant predictor of the distance between children in the 2-dimensional "similarity" space was the mutual-liking between them. However, network patterns in that study were defined on the basis of "like-most" and "like-least" nominations. In contrast, the current study used the Social Cognitive Map procedure (Cairns et al., 1985) to assess children's peer network patterns.

In order to demonstrate that it is appropriate to measure perceived cohesion based on the similarity-based MDS space, it was necessary to verify that the affiliation patterns between children in the peer network, as assessed with SCM, would be significantly related to the distance between them in the MDS similarity space. To examine the relation between the SCM network patterns and the MDS similarity space, children's SCM-generated affiliation patterns and similarity judgments were first analyzed with MDS. As a result, each pair of children had two types of distances: Distance in the MDS affiliation space and distance in the MDS similarity space. The distance between children in the MDS affiliation space is interpretable as their strength of affiliation, whereas, when similarity data is used as input, the distance between two children indicates their overall similarity perceived by peers. Subsequently, the distance between children in the MDS affiliation space was correlated with the distance between children in the MDS similarity space to determine whether children's affiliation patterns were mapped onto the similarity-based MDS space. If that was the case, then the index of perceived cohesion within

each clique was to be calculated as the mean distance between all pairs of clique-mates in the MDS similarity space.

The third step was to examine the relation between perceived cohesion, clique type and size, and adjustment outcomes. In the final set of analyses, the focus of the study, we examined whether there is an interaction between type of clique and perceived cohesion on children's social and emotional outcomes. The results of the study by Kwon and Lease (2006) suggest that the type of clique a child belongs to contributes to his or her social and emotional functioning, even after considering the contribution of individual social status. The current study further hypothesized that clique type interacts with levels of perceived cohesion within the clique to affect children's adjustment outcomes. It might be that high perceived cohesion is positively related to children's social and emotional adjustment for those in cliques with positive reputations. To the contrary, high perceived cohesion might adversely affect children's well-being for those in cliques with negative reputations.

Method

Participants

The sample of this study consists of 473 elementary school students (52% girls) from 10 fourth-grade and 16 fifth-grade classrooms from six rural elementary schools in the southeastern region of the United States. Participants' ages ranged from 9 to 12 years. Of the six participating schools, two were majority-White (i.e., 79.4% White, 17.7% Black, and 2.8% from other backgrounds) and four were majority-Black (i.e., 80.6% Black, 16.2% White, and 3.1% other). Overall, the sample was, according to school records, 54 % White, 43 % Black, and 3% some other ethnicity. Both parental consent and child assent were necessary for children to participate in the study. Parental consent and child assent were received for 88.7% of possible participants.

Procedure

As part of a larger study, participants completed questionnaires in two one-hour sessions. The questionnaires were group administered, and one of the researchers read aloud instructions for each measure, while a second research team member circulated in the classroom to provide individual assistances. Due to the university's Institutional Review Board (IRB) guidelines, only the names of students whose parents consented to their participation were included on the peer nomination rosters. Thus, participants were not able to nominate non-participants on any of the measures. Confidentiality was discussed at the beginning of data collection, and children were provided with an index card to cover their answers. During data collection, nonparticipating students were asked to read or draw quietly at their desks. All children in the participating classroom were given a small gift to thank the class for its time.

Measures

Social Cognitive Map. Children's cliques were identified using the Social Cognitive Map (SCM) procedure in a paper-and-pencil format. Participants were asked "Think about your classmates during school days, recess, and lunch. Are there some kids in your classroom who hang around and spend time together a lot? Who are they?" Children were instructed to list as many groups as they could think of in their classroom, including their own group. Children were also told that a group can be made up of as few as two children, and peers can be nominated for more than one group. The detailed SCM procedures to identify cliques as well as reliability and validity evidence have been discussed in previous studies (e.g., Cairns et al., 1985; Cairns, Leung, Buchanan, & Cairns, 1995). The SCM 4.0 computer program (1998, Center for Developmental Science of the University of North Carolina at Chapel Hill) was used to derive discrete cliques.

Identification of Types of Cliques. To identify clique types, children were asked to nominate

up to three participating classmates for each of 11 behavioral and social descriptors, believed to

play an important role in children's social status and reputations among peers (e.g., Cairns,

Leung, Gest, & Cairns, 1995; Masten, Morison, & Pellegrini, 1985; Rodkin, Farmer, Pearl, &

Van Acker, 2000). These 11 items were then used to create seven behavioral dimensions, or

characteristics: (a) *athletic* ('good at sports that are rough, like soccer, basketball, and football'),

(b) *bully* ('tries to get what he or she wants by hitting, shoving, pushing, or threatening other'),

(c) *reactive aggression* ('even when others *don't mean* to make them mad, this type of person

overacts and is easily pushed to anger'), (d) *prosocial* was the average of two items ('cheers up

peers when they are sad or upset about something', 'cooperates, shares, and gives everyone a

turn'), (e) *fun* ('fun to hang around, has a good sense of humor and has good ideas for things to

do'), (f) *smart* ('makes good grades, is smart, and knows the right answer'), (g) *social*

withdrawal was the average of two items ('looks like they want to play with others or join in a

game, but seems afraid or shy', 'seems sad or unhappy'). The numbers of behavioral

nominations children received were summed and standardized, within classroom and gender, to a

mean of *0* and a standard deviation of *1*.

To identify clique types, a clique's average or mean score on each of the seven behavioral

dimensions was calculated. Subsequently, cliques were submitted to a cluster analysis with the

seven means of behavioral characteristics as clustering variables. A two-step procedure was

employed which Blashfield and Aldenderfer (1988) and others (Huberty, DiStefano, &

Kamphaus, 1997; Kamphaus, Huberty, DiStefano, & Petoskey, 1997) have recommended. First,

the initial cluster solution was identified by the Ward method, a hierarchical agglomerative

technique that minimizes within-cluster variances. Second, the Ward solution (i.e., cluster seeds)

became the basis of a K-means procedure, which is an iterative partitioning technique. An optimal solution is found after multiple passes are made through the data. Euclidean distance was used as the similarity index to determine the distance between each unit.

Perceived Cohesion. As noted previously, perceived cohesion was operationally defined as the mean pairwise distances between clique members in the similarity MDS space. To produce this measure, we asked participating children to complete a similarity rating task. First, a list of all possible pairs of participants was constructed for each gender within each classroom. The Ross ordering method (Ross, 1934) was used so that the order of each member's name within dyads as well as the space of each member's name throughout the measure is evenly balanced (see Lease & Axelord, 2001). Participants were instructed to think about what their same-gender peers are like when they talk to and play with each other during the school day (e.g., lunch, recess). Then participants were asked to rate - from 1 to 7 (1 = *very different*, 7 = *very alike*) – 'how alike' or 'how similar' they believed each dyad of peers to be (e.g., 'how alike are Susan and Karen?'). Children were not given any explicit criteria (i.e., they were *unconstrained*) for making the similarity judgments. After giving instructions and answering questions, the researcher instructed children to complete the similarity ratings by their own pace. The number of similarity judgments a child completed ranged from 21 (7 participants in a same-gender group) to 120 (16 participants in a same-gender group). The similarity rating measure was administered only when there were 7 or more same-gender participants within a same-gender group in a given classroom. Thus, a total of 41 male and female class-based groups (22 female groups) were included in the similarity analyses. Thus, the perceived cohesion measure was not available for some cliques (i.e., when the number of their same-gender peers in the class was less

than seven). As a result, the measure of perceived cohesion was available for a subset of 76 of the total 87 cliques.

    Self-report of Social-emotional Adjustment Outcomes. A modified version of the Peer Network and Dyadic Loneliness Scale (PNDLS; Hoza, Bukowski, & Beery, 2000) was used to assess children's social dissatisfaction and loneliness. The original scale consisted of 2 factors with 8 items on each factor: network loneliness and dyadic loneliness. Based on their factor analysis results, the top 7 loading items were selected for use in our modified version of the PNDLS. An additional subscale of 7 items was created to measure children's dissatisfaction associated with their influence among peers. All three subscales were administered, but only network loneliness and influence subscales were of interest in the current study and thus reported. An example item from the network loneliness subscale is 'some kids feel like they really fit in with others.' Example items from the dissatisfaction with peer influence subscale include: 'Some kids feel they are looked to when the group makes a decision' and 'Some kids usually get what they want when they are with peers.' The response format of the PNDLS and the peer influence dissatisfaction scale has pairs of sentences that contrast in terms of the choice of interest (e.g., some kids feel like most kids like them vs. other kids feel hardly any kids like them). Children were first asked to choose one of the two sentences that better described themselves and then to specify whether the chosen sentence was *sort of true* or *really true* for them.

    The scoring system for this type of scale is the same as a 4-point scale; for the two subscales used in this study higher scores indicate greater loneliness or dissatisfaction (i.e., 1 for very low loneliness or dissatisfaction and 4 for very high loneliness or dissatisfaction). The Cronbach

alphas of the network loneliness and dissatisfaction with peer influence subscales were .80, and

.76, respectively.

The Behavioral Assessment System for Children, Self-Report of Personality (BASC-SRP, Reynolds & Kamphaus, 1992) was used to measure self-reported social-emotional adjustment. The child form includes 152 items and produces 12 scales; five subscales – interpersonal relations, self-esteem, social stress, depression, and anxiety – were used in this study. The BASC-SRP scores are in the form of T-scores with a mean of 50 and a standard deviation of 10. For each item on the form, participants are asked to respond either "True" or "False" as to whether a statement accurately describes them. Higher scores on social stress, depression, and anxiety subscales indicate greater distress, whereas higher scores on the interpersonal relations subscale reflect more positive social interactions. Reliability evidence is available from the BASC-SRP manual including internal consistency, test-retest reliability, and interrater reliability (see Reynolds & Kamphaus, 1992). The manual also provides evidence for construct validity based on factor analytic results.

Results

The results are presented in three sections. First, a brief description of children's discrete cliques and types of cliques are presented. Second, to examine the appropriateness of using a similarity-based MDS analysis to derive a measure of perceived cohesion, children's affiliation patterns (i.e., 'who hang around together a lot?') and similarity judgments were analyzed with MDS. Subsequently, for the set of same-gender peers within each classroom, distances between dyads in the MDS similarity space and distances between dyads in the MDS affiliation space were correlated. Third, the measurement of perceived cohesion of cliques was presented along with its relation to clique types, clique size, and adjustment outcomes. Fourth, the results of

interaction between clique types and perceived cohesion on outcome variables were presented.

As a follow up to this analysis of the interaction, the data was split by clique types to examine

simple effects. In other words, for each clique type, children's adjustment outcomes were

compared by the level (i.e., high versus low) of perceived cohesion.

Identification of Cliques and Types of Cliques

The current study is a follow-up to the study by Kwon and Lease (2006) in which discrete

cliques were identified as well as clique types; the data on cliques and clique types was used in

this study as well. As noted in Kwon and Lease, 94 cliques were identified with 441 children.

The size of the cliques ranged from 2 to 10 members ($M = 5.5$); male cliques ($n=6$) were bigger

in size than female cliques ($n=5.11$), t (398) = 4.39, $p < .01$. Over 80 % of cliques (76 cliques)

consisted of three or more members, and the majority of cliques was homogeneous in terms of

gender ($n = 87$, or 93%) and ethnicity ($n=61$, or 65%). A total of seventeen (3.7 %) children had

multiple clique membership, and 4 (.3 %) children did not belong to any clique. From the total

sample, children who belong to a gender-heterogeneous clique and those with multiple group

memberships or isolates were not included in the following analyses. Thus, the final number for

analyses was 87 cliques (total of 420 children).

Relations between distance between children in the RMDS similarity space and in the CMDS

affiliation space.

Replicated MDS (RMDS) analysis of similarity judgments. To produce the MDS similarity

space, we followed the analytic procedures reported by Lease and colleagues (2001; 2003a;

2003b), using PROC MDS available in version 8.00 of the SAS supplementary library. They

used replicated MDS (RMDS) in which one model per same-gender, classroom-based peer group

is fit simultaneously to all individuals' similarity matrices so that the entire peer groups'

perception of their peer group's organizational structure can be modeled. Specifically, the

similarity ratings were analyzed for each same-gender group within each classroom. The fit of

each classroom's configurations to the dyadic similarity judgments was assessed with a badness-

of-fit criterion (Kruskal & Wish, 1978; see Lease & Axelrod, 2001). Badness-of-fit is

comparable to the square root of 1 - R², where 'R is a multiple correlation around the origin'

(SAS Technical Report P-229, p. 259). Consistent with the results from previous studies (see

Lease et al., 2001; 2003a; 2003b), the median badness-of-fit for the similarity-based MDS

solution for the 41 peer groups was .18 (and ranged from .09 to .26). This indicates that more

than 90% of the variance in the similarity data was accounted for by the RMDS solutions and

that children's perceptions about their peer group's organizational structure are highly similar.

Classical MDS (CMDS) analysis of affiliation patterns. Children's peer affiliation patterns,

assessed with the SCM procedure, were summarized with a co-occurrence[3] matrix (see example,

Sage & Kindermann, 1999). The co-occurrence matrix is comprised of the frequency with which

a child is nominated to be in the same clique as any other child. Because children were allowed

to nominate both gender peers for peer affiliation, one co-occurrence matrix was created and

analyzed for each classroom. Thus, a Classical MDS (CMDS) analysis was used (Schiffman et

al., 1981) in which one matrix is generated and used as input for an MDS analysis.

When the co-occurrence matrices were used as input to the CMDS analysis, the mean badness

of fit of the two-dimensional solution across the 25 classrooms was .05. This indicates that most

of the variance in the affiliation data for each classroom was accounted for by the CMDS

solution. Figure 1 depicts the peer network patterns in one classroom analyzed with CMDS

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[3] The co-occurrence matrix was generated using the Networks program (available at www. sonnet.pdx.edu)

technique. The configuration of the affiliation patterns in this particular classroom's CMDS

output suggests fairly distinct cliques. The geometric distance between any two children in the

affiliation-based CMDS solution can be interpreted as the 'affiliation strength' between them.

For example, in this classroom, Gay and Joy were nominated to "hang around together a lot" by

peers, and probably belong to the same clique; they were actually in the same clique determined

by the SCM program. In contrast, Cam and Ida are farther apart, which suggests that they do not

frequently affiliate with each other (and were not in the same clique). The CMDS solution of this

classroom suggests four discrete cliques. However, it is important to note that cliques were not

always as distinctively clustered in the CMDS affiliation space as in this classroom.

   Relation between the CMDS affiliation space and the RMDS similarity space. Next we

examined whether children's peer affiliation patterns would be mapped onto the similarity-based

RMDS space, as expected based on previous research (see Lease et al, 2003b). Specifically, the

distance between dyads in the similarity-based RMDS space (degree of perceived similarity) was

correlated with the distance between them in the affiliation-based CMDS space (affiliation

strengths). The correlation analyses were conducted by classroom and gender (i.e., a total of 41

male and female groups). As an example, for a group of 10 girls, the correlations were calculated

based on 45 (10*9/2) data points, or dyads. The median correlation between the similarity-based

RMDS space and the affiliation-based CMDS space was .62 (and ranged from -.09 to .83); the

correlations were significant for 36 peer groups out of 41. Interestingly, the five peer groups for

which the correlations were not significant were male groups. Overall, the correlation results

replicated the results reported by Lease et al. (2003b): Across classrooms, social network

patterns were significantly and consistently related to peer group organizational structure, as

assessed using RMDS of unconstrained similarity ratings. The results also indicate that children

perceive peers who often affiliate with each other to be similar.

Perceived Cohesion of Cliques

Given that the CMDS affiliation space was found to be related to the RMDS similarity space,

an index of cliques' perceived cohesion was calculated by averaging distances between clique

members in the similarity-based MDS space. As an example, for a clique of four members, there

are a total of six distances among them; the perceived cohesion of this clique was determined by

taking the mean of those six distances.

The perceived cohesion of the 76 cliques ranged from .24 to 2.59 (*M*=1.43, *SD*=.51): High

perceived cohesion ($\leq$1.43) and low perceived cohesion (>1.43) groups were created using the

mean as a cut-off. Of 76 cliques, 36 were assigned to the high perceived cohesion group. A 2

(level of perceived cohesion) $\times$ 5 (clique types) chi-square test indicated that the distribution of a

clique's level of perceived cohesion differed significantly by the type of clique, χ^2 (4) = 21.05, p

<.01. The proportion of cliques at each level of cohesion is included in Table 2. About 85% of

Average cliques were assigned to the low perceived cohesion group, whereas about 76% of

Withdrawn cliques and 77% of *Competent* cliques were assigned to the high cohesion group. The

distributions were fairly even for *Tough* and *Incompetent/Aggressive* cliques. Not surprisingly,

there was a significant difference in mean clique size by level of cohesion, t (74) = 5.38, p<.01:

The mean size for cliques of high perceived cohesion (n=3.36) was smaller than the mean size

for cliques of low perceived cohesion (n=5.65). The level of perceived cohesion did not differ

significantly according to the clique's gender, χ^2 (1) = 3.12, p =ns.

To examine whether children's adjustment differed according to whether they were in a high

or low cohesion clique, a series of independent t-test was conducted, with the two levels of

cohesion as a grouping variable. Across all social and emotional adjustment measures, level of cohesion did not have any significant effects: Interpersonal relations t(331)=.98, ns; Self-esteem t(331)=.52, ns; Social stress t(331)=.51, ns; Depression t(330)=.75, ns; Anxiety t(330)=.44, ns; Network loneliness t(334)=.77; and Dissatisfaction with peer influence t(335)=.11, ns.

Interaction between Types of Cliques and Perceived Cohesion on Children's social and emotional adjustment

The goal of analysis in this step was to examine whether the effect of clique type on children's social and emotional adjustment depends on the level of the clique's perceived cohesion. To test this hypothesis, a series of 5 (types of cliques) × 2 (perceived cohesion) ANOVAs was conducted with regard to six outcome variables: *interpersonal relations, self-esteem, social stress, depression, anxiety, network loneliness,* and *dissatisfaction with peer influence*. Table 3 presents the test results as well as means and standard deviations of outcome variables for individuals in cliques by levels of perceived cohesion. Overall, perceived cohesion moderated the link between clique types and children's adjustment for all outcome variables except for *self-esteem*. Significant interaction effects are depicted in Figure 2. The graphs suggest that the interaction patterns are similar for children in *Withdrawn* and *Competent* cliques in that they reported more positive adjustment when their cliques were perceived to be highly cohesive. In contrast, children in *Average* cliques showed higher levels of adjustment when their clique was not perceived to be highly cohesive. Children in *Incompetent/aggressive* cliques showed similar patterns of adjustment with those in *Average* cliques except for network loneliness and dissatisfaction with peer influence. The moderating effect of perceived cohesion was less obvious for children in *Tough* cliques, except that they appear to be more socially stressed and more dissatisfied with peer influence when they belong to a highly cohesive clique.

To further investigate the moderating effect of perceived cohesion at the level of clique, the data was split by clique type. For each type of clique, a series of t-tests was conducted for the six outcome variables (where the interactions were significant) with the level of cohesion as a grouping variable. For children in an *Average* clique, statistically significant differences were found in network loneliness, t(156)=2.09, p=.04, and dissatisfaction with peer influence, t(157)=2.59, p=.01. For children in a *Tough* clique, children in a highly cohesive clique demonstrated higher levels of dissatisfaction with peer influence, t(49)=2.25, p=.03. For children in a *Competent* clique, statistically significant differences were found in interpersonal relations, t(52)=2.47, p=.02, anxiety (51)=-2.86, p=.01, network loneliness, t(11)=-2.59, p=.03. Marginally significant differences were found for children in a *Competent* clique in depression, t(15)=-2.08, p=.06 and dissatisfaction with peer influence, t(51)=-1.94, p=.06.

Discussion

The current study adds to the growing body of literature regarding the effect of peer group characteristics on children's development. There were three major findings in the current study. First, RMDS analytical procedures of similarity ratings were shown to be adequate to examine aspects of children's peer network patterns, as assessed with the SCM procedure. That is, there were substantial correlations between the dyadic distances in the RMDS similarity space and in the CMDS peer affiliation space. This adds to the validity evidence of using similarity-based MDS methods as a means to study distances between children in their peer networks, as originally demonstrated in the study by Lease et al. (2003b). Specifically, correlation results suggest that children who affiliate with each other are perceived to be similar by peers, even when the basis of that similarity is not explicitly specified. Second, whereas numerous studies have shown that cliques are comprised of similar individuals, the results of the current study

indicate that the degree of perceived cohesion within a clique varies across cliques. Perceived cohesion was conceptualized as the degree to which clique members were implicitly perceived to be similar to one another, and it was measured based on the mean distance between clique members in the RMDS similarity space. Third, we found that the degree of cohesion within one's clique is not simply related to well-being, but that the level of perceived cohesion within the clique moderates the link between clique type and children's adjustment. There were significant interactions between clique type and perceived cohesion for all outcome variables (i.e., interpersonal relations, social stress, depression, anxiety, network loneliness, and dissatisfaction with peer influence) with the single exception of self-esteem, indicating that the effect of perceived cohesion on children's adjustment depends on the type of clique to which they belong.

Perceived cohesion as a moderating factor between clique type and children's adjustment

The results showed that perceived cohesion, the degree to which clique members are perceived to be similar to each other, varied across clique types. Although the small variance across behavioral characteristics for *Average* cliques (see Table 1) seemingly suggests homogeneity of members' behavioral characteristics, the majority (85%) of *Average* cliques were not perceived to be highly cohesive. Likely, the fact that children in *Average* cliques did not display salient behavioral characteristics (i.e., clique averages on characteristics were all in the average range) led peers to perceive *Average* cliques to be less distinct as a group. In contrast, over 70% of *Withdrawn* and *Competent* cliques was determined to be highly cohesive. The distribution of the level of cohesion was fairly equal for *Tough* and *Aggressive/Incompetent* cliques. In future studies, it might be interesting to further examine whether perceived cohesion is dependent on certain behavioral characteristics. Also, perceived cohesion systematically varied

by the size of cliques. As expected, cliques of smaller size were perceived to be more cohesive than those of bigger size.

Although children's adjustment outcomes were not directly affected by the level of perceived cohesion within their clique, we found that perceived cohesion moderates the link between membership in a particular type of clique and children's adjustment outcomes. Figure 2 suggests fairly consistent interaction patterns between types of cliques and the level of cohesion on outcome variables. Overall, it is speculated that children in *Withdrawn* and *Competent* cliques appear to be more interpersonally competent, less depressed, less socially distressed, less anxious, and less dissatisfied with peer involvement and peer influence when the children are in a highly cohesive clique. In *Average* cliques, children's outcomes were in the opposite direction in that they tend to fare better when being in a low cohesive clique. Children's outcomes were varied in *Incompetent/aggressive* cliques: Outcomes tended to be more favorable when they were in a low cohesive clique. However, they reported lower levels of dissatisfaction when they were in a highly cohesive clique and reported similar levels of dissatisfaction with peer influence regardless of the levels of perceived cohesion. Children's outcomes in *Tough* cliques did not much differ by the levels of perceived cohesion, with some exceptions that they appear to be more socially stressed and more dissatisfied with peer influence when they belong to a highly cohesive clique.

When outcome variables were compared for high and low perceived cohesion groups within each type of clique, only a small number of statistically significant differences were found across the varying types of cliques. This was not very surprising because the cell sizes significantly decreased when the data was divided into types of cliques and levels of cohesion, which reduced the power to detect differences. However, the effect of perceived cohesion on outcome variables

was fairly consistent for children in *Competent* cliques, who reported higher levels of adjustment when their cliques were perceived to be highly cohesive.

What is the mechanism by which the level of perceived cohesion moderates the link between clique types and children's adjustment? Sociological research on individuals' perceptions toward a group appears to offer some explanations. When a group is perceived to be highly cohesive, the impression of the group as a whole is applicable to all members in the group, and information about members are easily transferable (Crawford et al., 2002). Sherman and Johnson (2003) further explained that certain traits or characteristics of a group identify group members through the process of stereotyping. Results of this study suggests that when *Competent* cliques are perceived to be highly cohesive, the stereotyping process may affect clique members favorably as each member becomes more strongly associated with the positive reputation (e.g., prosocial, smart, fun) of their clique. In contrast to the *Competent* clique type, children in *Tough* cliques reported higher levels of dissatisfaction with peer influence when their cliques were perceived to be highly cohesive. Given that children in *Tough* cliques of high cohesion are highly aggressive who are also perceived to be very similar to one another, their levels of aggression and influence toward peers are also likely to be similar to one another. This, in turn, might lead children in highly cohesive *Tough* cliques to feel relatively dissatisfied regarding their levels of perceived influence they have on peers (e.g., earn what they want when being with peers, being looked to when the group makes a decision).

Children in *Average* cliques report being more dissatisfied with peer involvement and peer influence when their cliques are perceived to be high in cohesion. In future studies, it will be interesting to study why children in *Average* cliques are negatively affected when their cliques are perceived to be highly cohesive. However, the results should be interpreted with caution

because, for *Average* cliques, the number of children in a high cohesion clique was very small compared to those in a low cohesion clique.

Peer affiliation and perceived similarity

As expected, children's peer affiliation patterns were significantly and consistently correlated with perceived similarity in the RMDS space for the majority of the peer groups. The results indicate that children's peer affiliation patterns substantially contribute to children's internal representation of peer group organizational structure. In this study, the measurement of similarity was different from many previous studies in that children were not asked to rate peers' similarity based on explicit characteristics, such as aggression or academic achievement. Rather, a child was allowed to rate how similar two peers are based on any and all criteria he or she thought important. At least two social network factors might operate on children's similarity judgments. First, as it has been widely acknowledged, friends and network members are actually similar in many characteristics. Second, perceptual biases might operate in children's similarity judgments given individuals' tendency to think that friends or clique members resemble each other (Erwin, 1993; Salmivalli, Huttunen, & Lagerspetz, 1997), perhaps more than is actually the case.

The MDS technique proved to be informative in studying children's network patterns. Two of the most advantageous aspects of employing multidimensional scaling (MDS) to study children's peer networks are that (a) MDS can produce a visual representation of peer group organizational structure and (b) distances between two children in the MDS space are geometrically interpretable (Lease & Axelrod, 2001). When the co-occurrence matrix, which summarizes children's affiliation patterns, is used as input to the MDS analysis, the interpretation of the visual output is fairly straightforward. That is, children who are placed closely to each other are those who 'hang out together a lot.' It should be noted, however, that MDS techniques do not

provide statistical analyses to produce discrete cliques when the co-occurrence matrix is used as input: Other programs are needed to determine specific criteria to identify cliques. When unconstrained similarity judgments are used as input of MDS, the geometric representation of MDS output contains rich and more complex information on which children's perception of their peer group organizational structure is based. In a previous study, for example, Lease and colleagues (2003b) have demonstrated that children's "mutual-liking and disliking patterns" in the peer group are substantially related to the distance between children in the RMDS space. Because mutual-liking patterns were intended in the Lease et al study as an approximation of children's affiliation patterns, it was not surprising to find that children who 'often hang out together a lot' were perceived to be similar to each other in the RMDS depiction of group organizational structure. Also, the results support the notion that children's peer affiliation patterns are one of the important factors that children rely on making sense of their peer group organizational structure.

Unexpectedly, gender differences were indicated regarding the relation between peer affiliation patterns in the CMDS space and perceived similarity between dyads in the RMDS space. Whereas the correlations were significant for all observed female groups, the five peer groups in which the correlations were not significant were male groups. Although that result needs replicatation, it might be that peer affiliation patterns are more important pieces of information for girls than for boys for deciphering the peer group's organizational structure. It also should be noted that because the correlations between similarity distance and affiliation distance were calculated for all dyadic pairs of same gender children in the classroom, the results do not directly indicate whether clique members are perceived to be more similar to each other than to non-clique members.

Limitations and Future Directions

There are a number of methodological limitations to the current study. First, similarity judgments to assess perceived cohesion were determined by same-gender peers' perspectives, whereas children were free to nominate both same- and opposite-gender peers for behavior nomination items and peer affiliation patterns (i.e., SCM). Second, it is not known how nonparticipating children might have affected the results regarding the types of cliques and their levels of perceived cohesion. Although the overall active consent rate was quite high (i.e., 88.7%), more than half of the participating classrooms involved three or more non-participants. It is possible that those non-participating students form a clique by themselves.

The construct of perceived cohesion needs to be further tested with regard to reliability and validity. For example, one may examine test-retest reliability of perceived cohesion and examine whether children in high cohesive cliques actually share more similar traits or interact more frequently than those in low cohesive cliques. Also, it is likely that children's perceptions of peers change across development, and generalization of the findings reported in this study might be limited to children in later elementary school grades. More importantly, perceived cohesion in this study was indirectly assessed based on children's judgments of unconstrained similarity of peers, including participant's judgments of self to others. There might be alternative ways to measure the degree to which cliques are perceived as an entity. Many questions remain regarding the process by which children are affected by different clique properties and especially the interplay between such properties. Regardless of the limitations, the current study offers a unique opportunity to demonstrate that one needs to carefully consider the interplay of different clique properties to understand the process by which peer context contributes to children's social and

emotional adjustment. Future studies on network properties and dynamics should increase our

understanding of the network influence on children's development.

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Table 2-1. Means and Standard Deviations of Clustering Variables by Clique Type and for the Overall Sample of Cliques (N=87)

	Average	Withdrawn	Tough	Incompetent /aggressive	Competent	Overall
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Athletic	.07 (.22)	**-.59 (.28)**	**.62 (.57)**	**-.56 (.22)**	-.06 (.42)	-.09 (.50)
Bully	-.02 (.25)	**-.56 (.29)**	**.66 (.43)**	**.31 (.52)**	**-.33 (.38)**	-.06 (.51)
Reactive aggression	-.05 (.25)	**-.47 (.32)**	**.58 (.32)**	**.32 (.49)**	-.19 (.37)	-.04 (.45)
Prosocial	-.05 (.26)	.18 (.56)	**-.31 (.47)**	**-.72 (.24)**	**.46 (.46)**	-.02 (.51)
Fun	-.02 (.25)	**-.38 (.37)**	.14 (.36)	**-.70 (.25)**	**.59 (.29)**	-.05 (.47)
Smart	-.10 (.28)	-.17 (.47)	-.11 (.34)	**-.54 (.20)**	**.79 (.43)**	-.02 (.51)
Withdrawal	-.07 (.19)	**.74 (.40)**	**-.33 (.30)**	.22 (.54)	-.10 (.50)	.09 (.50)
N of male cliques	20	7	4	2	4	37
N of female cliques	15	11	7	7	10	50
Average clique size	6.7	3	5.2	3.4	4.9	5.5

Note. ±3.0 was a cut-off point and values greater than or equal to |3| are bolded.

Table 2-2. Proportion of cliques by levels of cohesion

| | Perceived Cohesion | | | | | | | |
| | High | | | Low | | | Total | |
	n	Expected	%	n	Expected	%	n	%
Average	4	12.3	15.4	22	13.7	84.6	26	100
Withdrawn	13	8.1	76.5	4	8.9	23.5	17	100
Tough	5	5.2	45.5	6	5.8	54.5	11	100
Aggressive/Incompetent	4	4.3	44.4	5	4.7	55.6	9	100
Competent	10	6.2	76.9	3	6.8	23.1	13	100

Table 2-3. Means and Standard Deviations of Outcome Variables for Individuals in Cliques by Perceived Cohesion levels

	Average		Withdrawn		Tough		Aggressive /Incompetent		Competent		F
	High	Low	High	Low	High	Low	High	Low	High	Low	
	(n=12)	(n=146)	(n=33)	(n=12)	(n=17)	(n=31)	(n=13)	(n=15)	(n=42)	(n=12)	
Interpersonal Relations	45.1 (13.6)	50.5 (10.5)	45.8 (14.2)	39.6 (16.2)	51.1 (9.8)	47.7 (11.9)	42.0 (14.4)	47.0 (13.2)	**54.3 (7.1)**	**47.4 (12.2)**	$F_{(4, 323)}$ =2.6*
Self-esteem	45.6 (11.8)	49.2 (10.2)	46.2 (10.1)	45.3 (11.6)	50.1 (9.0)	50.5 (8.7)	41.7 (11.4)	47.4 (7.7)	51.4 (9.0)	45.2 (13.3)	$F_{(4, 323)}$ =1.8
Social stress	53.3 (13.1)	48.7 (10.6)	51.2 (10.7)	56.7 (10.6)	53.3 (8.2)	49.2 (9.9)	53.8 (12.7)	48.4 (7.4)	46.2 (9.0)	52.8 (10.8)	$F_{(4, 323)}$ =3.0*
Depression	56.6 (14.6)	51.9 (10.2)	53.9 (12.4)	58.0 (11.1)	55.3 (9.8)	54.2 (8.9)	57.9 (15.7)	51.1 (9.8)	**46.5 (9.1)**	**54.3 (11.9)**	$F_{(4, 322)}$ =2.8*
Anxiety	52.0 (11.8)	48.2 (10.2)	52.5 (10.5)	56.6 (8.4)	53.1 (10.0)	50.4 (10.4)	53.2 (11.9)	50.8 (9.8)	**46.5 (9.3)**	**55.2 (9.1)**	$F_{(4, 322)}$ =2.7*
Network loneliness	**2.4 (.9)**	**1.9 (.7)**	2.4 (.9)	2.7 (1.1)	2.0 (.7)	1.9 (.7)	2.0 (1.1)	2.4 (.9)	**1.6 (.5)**	**2.2 (.7)**	$F_{(4, 326)}$ =3.2*
Dissatisfaction with peer influence	**2.8 (.7)**	**2.3 (.7)**	2.6 (.8)	2.8 (.9)	**2.4 (.6)**	**2.0 (.7)**	2.5 (.9)	2.4 (.8)	**2.1 (.6)**	**2.6 (.9)**	$F_{(4, 327)}$ =3.2*

Note. Bolded values indicate significant mean differences between high and low perceived cohesion within each clique type

Figure 2-1. An example of MDS-derived depictions of peer group organizational structure –

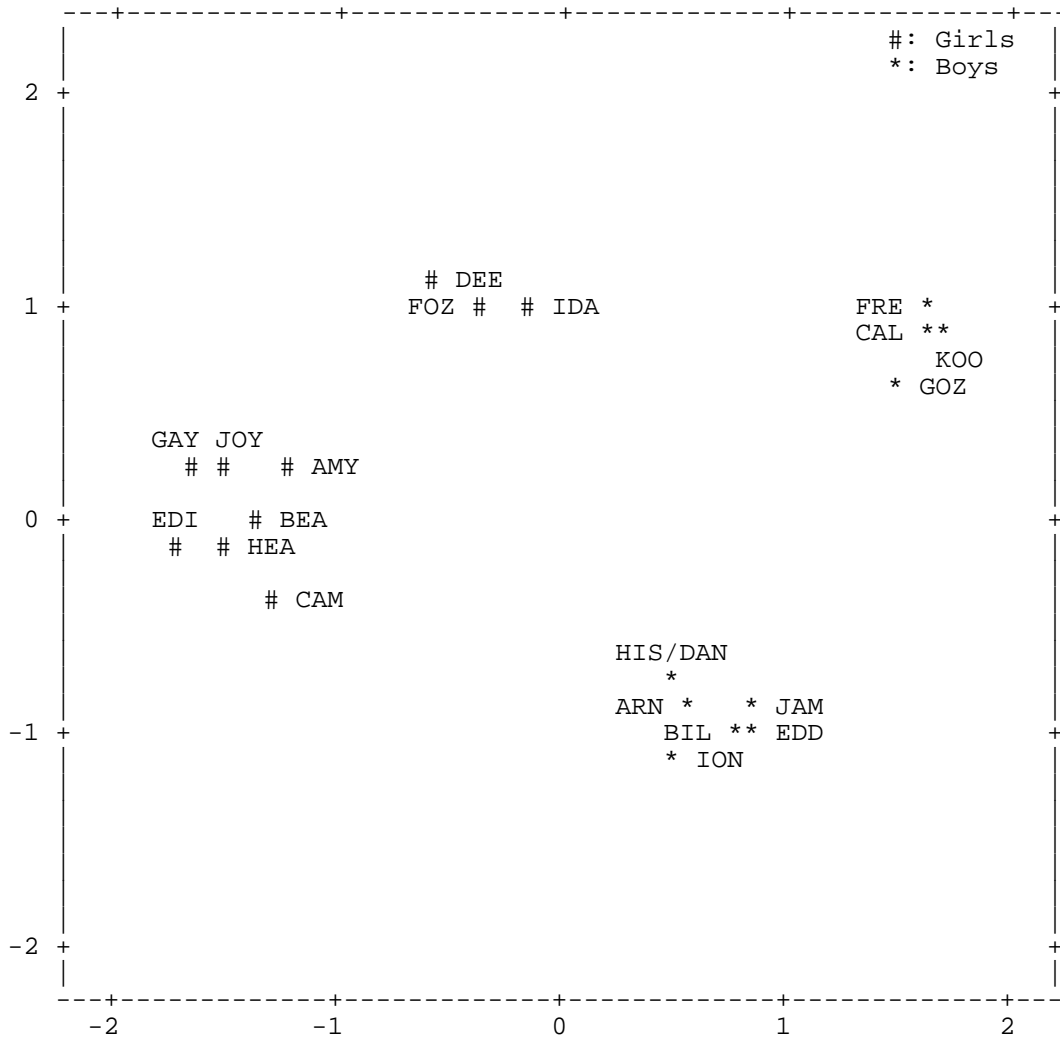with names of participants changed- with co-occurrence matrix as input

```
   ---+------------+------------+------------+------------+---
      |                                        #: Girls  |
      |                                        *: Boys    |
   2 +                                                   +
      |
      |
      |
      |                   # DEE
   1 +                 FOZ #   # IDA              FRE *    +
      |                                        CAL **
      |                                           KOO
      |                                        * GOZ
      |       GAY JOY
      |         # #    # AMY
   0 +       EDI    # BEA                                 +
      |        #  # HEA
      |           # CAM
      |                           HIS/DAN
      |                              *
      |                         ARN *    * JAM
  -1 +                          BIL ** EDD                +
      |                          * ION
      |
      |
      |
      |
  -2 +                                                   +
      |
   ---+------------+------------+------------+------------+---
       -2          -1           0            1            2
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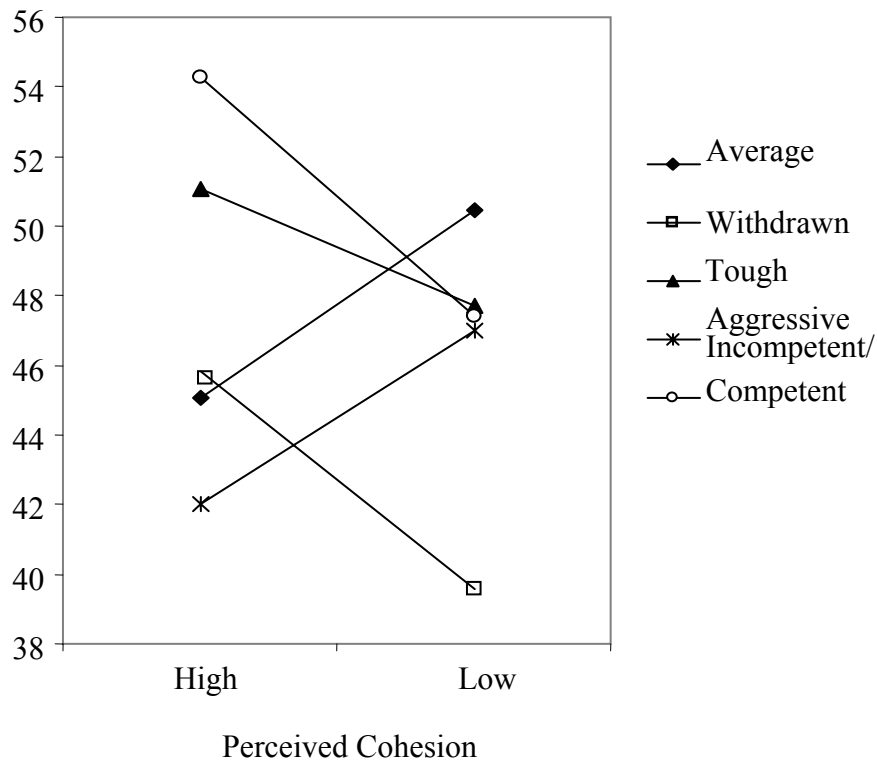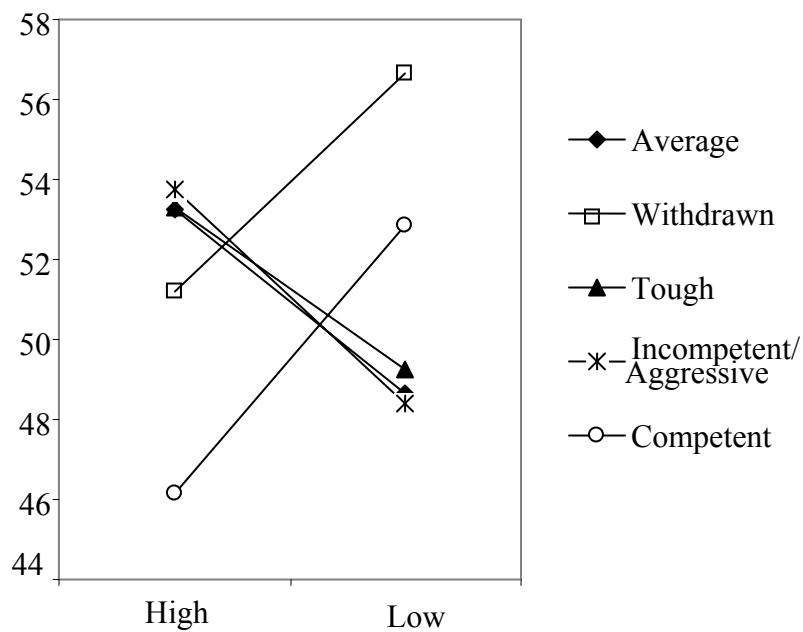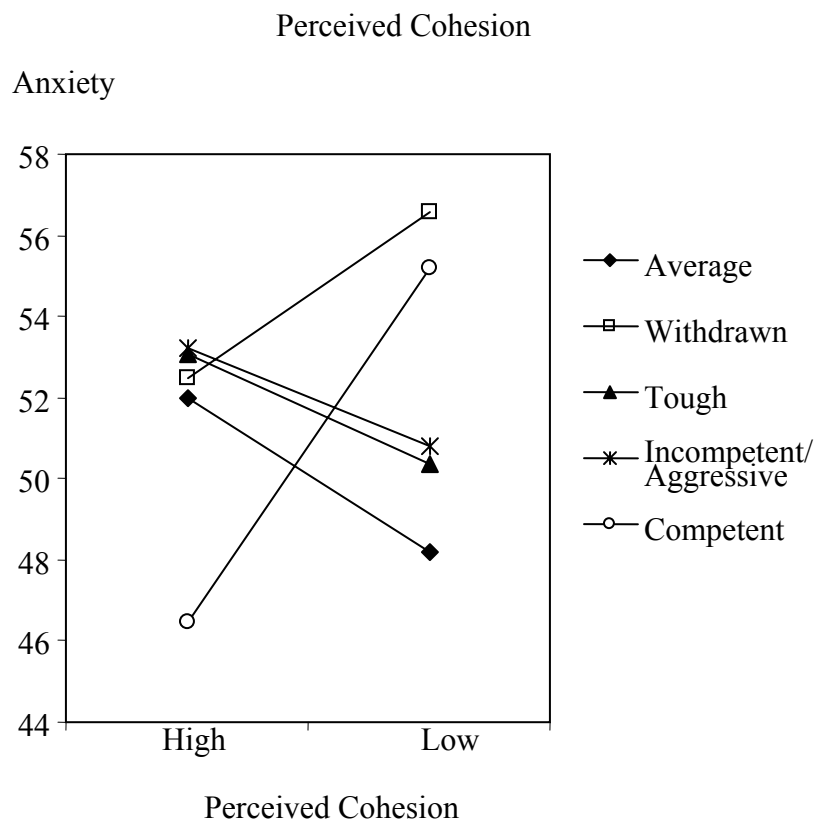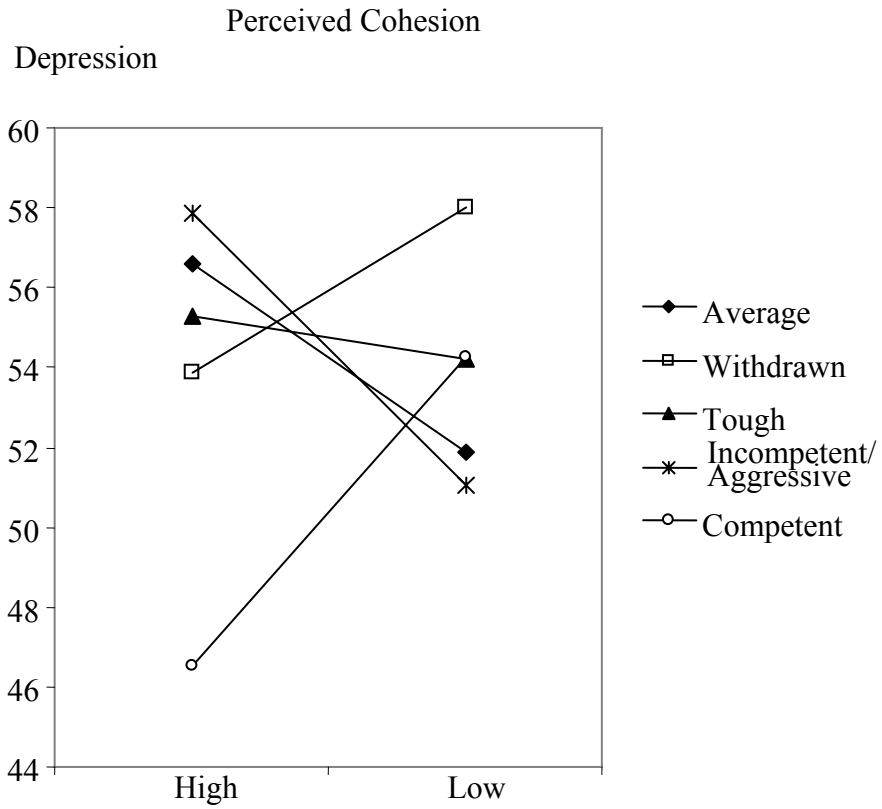
Figure 2-2. Interaction between types of cliques and perceived cohesion on outcome variables

Interpersonal relations

Perceived Cohesion

Social stress

Perceived Cohesion
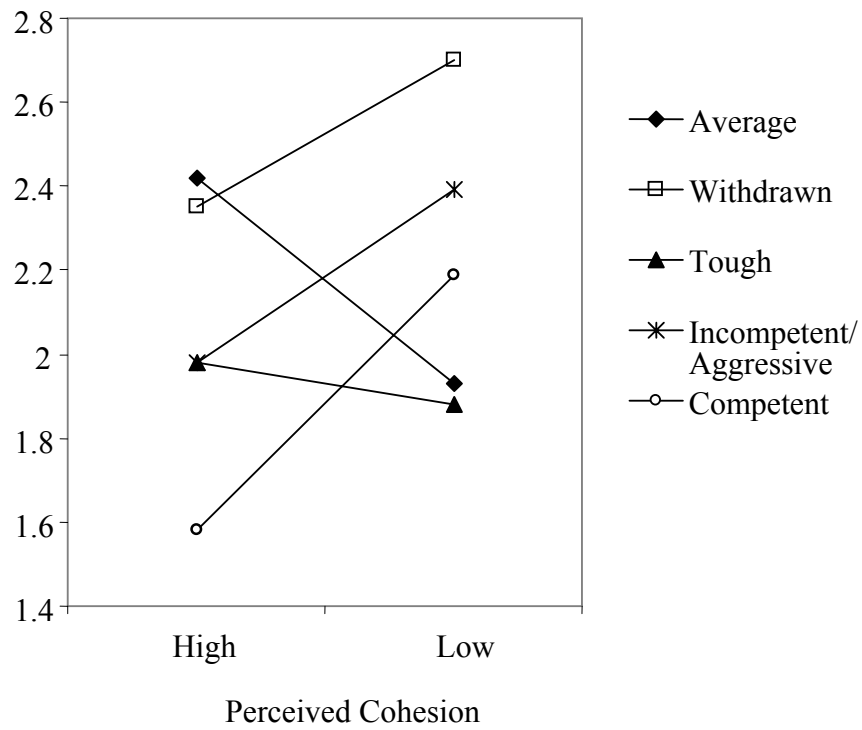
Depression

Perceived Cohesion
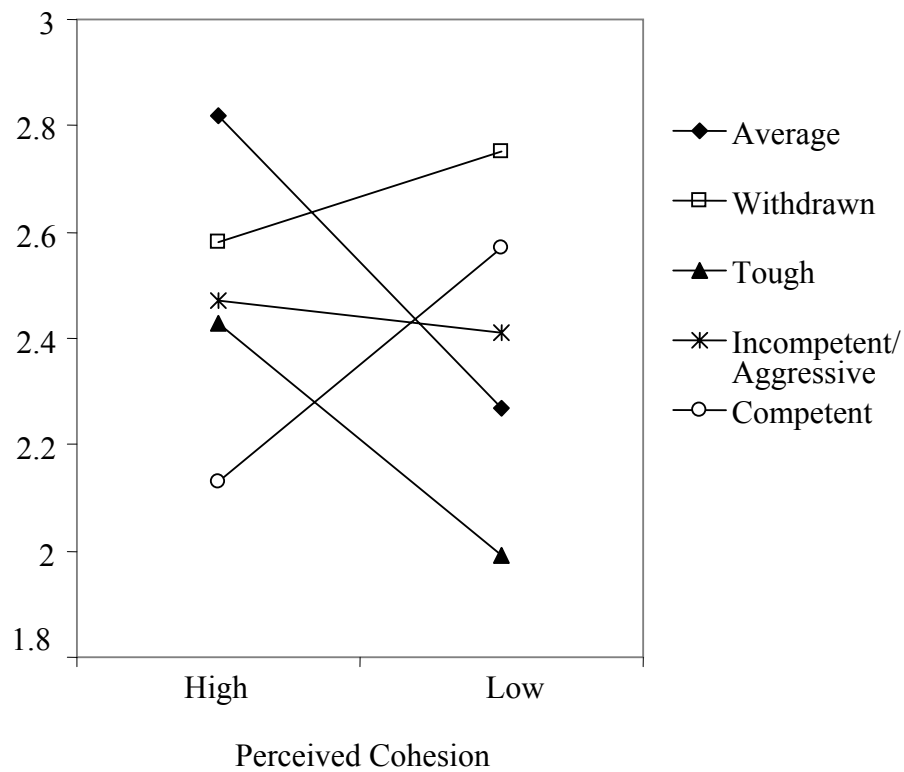
Anxiety

Perceived Cohesion

Network loneliness

Dissatisfaction with peer influence

CHAPTER 4

THESIS CONCLUSION

Summary of Findings

The goal of this thesis was to examine the contribution of social characteristics of cliques to children's social and emotional adjustment. First, the significance of children's cliques in middle childhood and a method of identifying children's cliques were discussed. Next, the phenomenon of group homophily was discussed, which refers to the tendency for children to affiliate with peers who are similar to themselves (Kandel, 1978). It was argued that group homophily might become the basis of studying behavioral reputations of cliques and perceived cohesion of a clique.

The first study aimed to identify types of cliques and to compare clique types on the basis of peer-reported social status and self-reported adjustment outcomes. Types of cliques were determined based on seven behavioral characteristics: athletic, bully, reactive aggression, prosocial, fun, smart, and social withdrawal. The results supported five types of cliques: *Average* (average scores on all dimensions of behaviors), *Withdrawn* (above average on social withdrawal and average on prosocial skills), *Tough* (elevations on athletic, bully, and reactive aggression as well as average on fun), *Incompetent/Aggressive* (above average on bully and reactive aggression, below average on prosocial, smart, and fun, and average on social withdrawal), and *Competent* (above average on prosocial, fun, smart). Also, average levels of individual social status (i.e., likeability, popularity) were compared across clique types. It was found that the average levels of social status were consistently high for children in *Tough* and *Competent* cliques. Finally, children's levels of self-reported social and emotional functioning were compared across clique types, after controlling for their own individual social status. Overall, children in *Competent* and *Average* cliques were found to be better adjusted than children in other cliques. Children in *Withdrawn* and *Incompetent/aggressive* cliques endorsed lower levels

of adjustment than those in other types of cliques. The levels of social and emotional adjustment varied for children in *Tough* cliques depending on outcome variables.

Overall, the results indicate that knowledge of clique characteristics provides insight into how children's development might be affected by shared peer context that the clique provides. Also, the consistently low levels of adjustment outcomes reported by children in *Withdrawn* cliques suggest that socially withdrawn children may be helped on a clique basis as well as on an individual basis.

The purpose of the second study was to examine the interaction between types of cliques and cliques' perceived cohesion on children's social and emotional adjustment. The similarity-based MDS space was found to be adequate to study children's peer affiliation patterns given the substantial correlations between the distance in the similarity-based MDS space and the distance in the SCM-based MDS space across peer groups. In other words, the results support that children who often affiliate with each other are also perceived to be similar by peers when the similarity judgments are determined by implicitly-held (i.e., unconstrained) criteria (Lease & Axelrod, 2001). Whereas numerous studies have demonstrated that clique members are similar to each other, the results of this study further suggest that the degree of 'groupness' of clique varies. The level of perceived cohesion of a clique was related to clique type and size, but it was not related to the gender of the clique and adjustment outcomes. Finally, it was also found that perceived cohesion moderates the link between types of cliques and children's adjustment. The interaction patterns indicate that children in *Withdrawn* and *Competent* cliques appear to be better adjusted when the children are in a highly cohesive clique. In *Average* cliques, children's outcomes were in the opposite direction in that they tend to fare better when being in a low cohesive clique. Children's outcomes were varied in *Incompetent/aggressive* cliques depending

on outcome variables. Children's outcomes in *Tough* cliques did not much differ by the levels of perceived cohesion, with some exceptions that they appear to be more socially stressed and more dissatisfied with peer influence when they belong to a highly cohesive clique.

The results of second study indicate that children's peer affiliation patterns substantially contribute to children's internal representation of peer group structure. Also, examination of interaction between clique characteristics appears to be more useful to understand the complex nature of the contribution of clique context on children's social and emotional adjustment.

Future Areas of Research

Group approaches of peer relations are considered to have a significant advantage over individual and dyadic approaches of children's peer relations which often miss the contextual effect on children's development. It is evident from the two studies that children's psychological adjustment is affected by characteristics of cliques to which they belong. In the current studies, characteristics of cliques were examined in terms of types of cliques and perceived cohesion. There are many other clique properties that might be important to consider such as density (i.e., number of reciprocal friendships between clique members) and permeability.

In future studies, within and between clique dynamics would also reveal intriguing aspects of children's peer socialization process. Studies of within clique dynamics might examine whether the structure of children's social status is hierarchical or egalitarian. For example, if there is an identified leader in a clique, the clique climate and clique members' behaviors are more likely to be influenced by the leader. In fact, the within clique dynamics might systematically differ across types of cliques. Children's interpersonal perceptions of and attitudes toward peers might also be affected by between clique dynamics. Social identity theory (Tajfel & Turner, 1979) suggests individuals tend to view their in-group members more favorable than out-group members, which

leads to enhanced social identity for in-group members and positive self-esteem for themselves. However, social identity theory has not been tested with children's peer groups. In future studies, It would be interesting to examine children's aggression and bullying in light of intergroup relations. If children's aggression and bullying occur primarily between clique members, intervention may need to consider the intergroup dynamics between cliques.

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