Child Development, May/June 2003, Volume 74, Number 3, Pages 710–727

The Peer Group as a Context: Mediating and Moderating Effects on Relations Between Academic Achievement and Social Functioning in Chinese Children

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The purpose of the study was to examine, in a large sample of Chinese children and adolescents at 9, 13, and 16 years of age, the contextual effects of the peer group on relations between academic achievement and social functioning. Data on informal peer groups, social functioning and academic achievement were collected from multiple sources. It was found that peer groups were highly homogenous on academic achievement. Hierarchical linear modeling analysis revealed that academic achievement and social adjustment were associated at both the within-group individual level and the group level. Moreover, group academic performance moderated the relations between academic achievement and social adjustment such as peer acceptance, social competence, and leadership, suggesting that individual-level relations might be enhanced or exacerbated by group academic norms.

In the past 20 years, developmental and educational researchers have paid substantial attention to academic achievement in Chinese children. Researchers have consistently found that Chinese children outperform their North American counterparts in academic areas and that the differences persist throughout the elementary and high school years (e.g., Lapointe, Mead, & Philips, 1989; McKnight et al., 1987; Stevenson, Chen, & Lee, 1993). Academic excellence in Chinese children may be due to traditional values and a strong emphasis on achievement in the Chinese culture (Ho, 1986), as implied in an ancient proverb "Gold is found in books." Largely because of limited opportunities to receive a higher education, academic competition is intense from kindergarten to high school in China. Children are constantly pressured by parents, teachers, and peers to perform optimally, and children who fail to meet standards of academic achievement are often regarded as highly problematic (e.g., Wu & Tseng, 1985).

An interesting issue in the study of academic achievement in Chinese children is its relations with social functioning. Given that academic achievement is highly emphasized by adults and peers in China, it is reasonable to argue that children's academic achievement may be of considerable significance for social adaptation such as peer relationships, leadership status, and other indexes of social competence. This argument has been supported by the results of a study conducted recently by Chen and his colleagues in a sample of Chinese children (Chen, Rubin, & Li, 1997). They found that, consistent with the Western literature (e.g., Kellam, Brown, Rubin, & Ensminger, 1983; Wentzel & Asher, 1995), academic achievement significantly and positively contributed to the prediction of social competence and peer acceptance, suggesting that academically competent children are likely to be accepted by peers and become more skilful and sociable in social situations.

Although academic achievement is generally valued and emphasized in Chinese culture, there are within-culture variations in academic motivation and achievement. Investigation of specific contextual factors that account for the within-culture variations and delineate the nature of academic achievement is important for our understanding of the phenomenon in Chinese children. One possible source of within-culture variations is differential influences of various types of peer groups (e.g., Brown, 1990; Cairns & Cairns, 1994). For example, to what extent academic achievement functions as a norm in the group may have pervasive effects on individual performance and adjustment in Chinese children. In the present study, we investigated the role of group academic

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The research described herein was supported by grants from the Social Sciences and Humanities Research Council of Canada and by a Scholars Award from the William T. Grant Foundation. We are grateful to the children and teachers for their participation. The second author mainly contributed to the data analyses in the study.

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norms as a context in mediating and moderating individual-level relations between academic achievement and social functioning in China.

Peer Groups and Social and School Adjustment

Beginning in middle childhood (10 or 11 years of age), most peer interactions in children take place in groups (Rubin, Bukowski, & Parker, 1998). The formation of peer clusters is a salient phenomenon in late childhood and adolescence (Brown, 1990; Cairns & Cairns, 1994). Natural peer groups, often formed spontaneously out of common interests, are networks of interacting individuals who spend time together and share activities. Groups usually range in size from 3 to more than 10 children and mostly comprise same-sex members (Kindermann, McCollom, & Gibson, 1995). According to Brown (1990), there are two types of peer groups: cliques and crowds. Whereas cliques are relatively smaller, friendship-based groups, crowds are reputation-based collectives of similarly stereotyped individuals who are defined by primary attitudes or activities their members share.

Unlike dyadic social relationships, the peer group represents a social context that is developed through the collective functioning of members based on group norms and values (Brown, 1990; Hinde, 1987). Frequent contact, common activities and interpersonal affective connectedness among group members may make children's groups a strong socialization influence in school (Kinderman, 1993). Specifically, peer group interactions provide extensive opportunities for children to learn from others (Hartup, 1992). Social connections and networks that children establish and maintain with peers may constitute a major source of social support for children to cope with emotional stress and adjustment difficulties (Hartup, 1992; Rubin et al., 1998). Moreover, during social interactions, constant peer evaluations and reactions may regulate and direct children's behaviors and, thus, affect developmental processes and pathways (Chen & Kaspar, in press). Findings from empirical research are consistent with these arguments (e.g., Cairns & Cairns, 1994; Cairns, Cairns, & Neckerman, 1989; Kandel, 1978; Kinderman, 1993; Kinderman et al., 1995). For example, Kinderman (1993) examined the role of peer group context in children's school motivation. The author found that whereas natural peer groups might be formed based on children's motivational factors, the profile of peer networks significantly predicted subsequent changes in individual motivation in school. Similar findings have been reported concerning the contributions of peer groups to individual social adjustment (e.g., Cairns & Cairns, 1994).

Peer group affiliation may be a common experience of children and adolescents across cultures (Hinde, 1987; Palmonari & Pombeni, 1989; Sherer, 1991). Researchers have found that, similar to their Western counterparts (e.g., Cairns & Cairns, 1994; Kinderman, 1993), most school-age children in Chinese societies are affiliated with a peer group (Chen, Chen, & Kaspar, 2001; Leung, 1996; Sun, 1995). Peer groups in Chinese children are mostly composed of same-sex members. Many of these groups have stable ''leaders'' and nuclear members. Peer pressure is viewed as an important factor by Chinese adolescents in making personal decisions (Chen, Cheng, Zhou, & Li, 1990).

Nevertheless, sociocultural background may affect specific experiences that children have in the group and norms and values that regulate group organization. As a result, the significance of the peer group for individual functioning in social and psychological areas may be influenced by cultural factors. In Western cultures, for example, the main function of group affiliation is to fulfill individual psychological needs such as the development of self-identity and enhancement of feelings about self-worth (e.g., Rubin et al., 1998; Sullian, 1953). Peer group formation and organization are based on various factors including personality traits, interests, behavioral patterns, and family background (Brown, 1990; Cairns & Cairns, 1994). Compared with Western cultures, Chinese culture places greater emphasis on the importance of peer groups in terms of their relevance to socialization (Chen, 2000). It is believed that peer interactions in the group may help children learn social standards and develop socially acceptable behaviors. Consistent with the socialization goal, particular attention has been paid to the nature of peer group networks in Chinese culture. Accordingly, ''good'' groups are often believed to be represented by mutual agreement of members on socially valued norms (*zhi tong dao he* in Mandarin, or cherishing the same lofty ideals). Children who have this type of relationship, which may be considered instrumental in Western cultures, encourage and help each other achieve higher goals (Chen, Chen, Kaspar, & Noh, 2000). These arguments have been supported by the initial findings reported by Sun (1995) that despite considerable changes in group membership, peer groups are often organized and reorganized in ways that maintain the continuity of performance in important areas such as academic achievement.

Academic Achievement as a Group Norm

Research has indicated that peer groups are often formed on the basis of similar social and cognitive attributes and common interests and activities (Brown, 1989; Cairns & Cairns, 1994; Patterson, Dishion, & Yoerger, 2000). As a salient and valued aspect of school adjustment in China, academic competence and achievement may eclipse other attributes of children and thus be an important factor in group formation and maintenance (Chen et al., 2000; Sun, 1995). Specifically, unlike in the West, schoolchildren in China spend most of their nonclass time engaging in academic activities. School extracurricular activities are often organized to facilitate understanding of the material taught in class. A common group activity is doing homework and other school projects together (Stevenson et al., 1990). Obviously, children who have similar academic interests and abilities are likely to attract each other and work together as a group. In contrast, those who have different attitudes toward schoolwork or perform at different levels may find it difficult to cooperate on academic tasks. Given this background, it is conceivable that academic achievement may serve as an important norm that regulates group organization in Chinese children and adolescents (Chen et al., 2000; Sun, 1995).

Social Functioning in Chinese Children

We were interested in the effect of group academic norms on individual social functioning. We collected data on peer acceptance and rejection, leadership status, and teacher- and peer-assessed social competence as indexes of social adjustment. In addition, we assessed children's aggression-disruption and shyness-sensitivity. Consistent with the Western literature (e.g., Morison & Masten, 1991), whereas sociable-competent behavior is associated with adaptive social outcomes and psychological well-being, aggressive-disruptive behavior is predictive of adjustment problems such as peer rejection in Chinese children (e.g., Chen, Rubin, Li, & Li, 1999). Unlike aggressive children in North America who display mainly externalizing problems, because of the strong sanction against aggressive behavior in Chinese culture, aggressive children in China experience pervasive difficulties including both externalizing and internalizing problems such as depression (Chen, Rubin, & Li, 1995a).

In the Western literature (e.g., Rubin & Asendorpf, 1993), shy, wary, and inhibited behavior in challenging situations has been considered socially immature and maladaptive. Shy-sensitive children are likely to have difficulties in interacting with peers and to develop psychological problems such as negative self-feelings (Rubin et al., 1998). It has been argued that unlike Western cultures, shy and restrained behavior is considered an indication of accomplishment and maturity in traditional Chinese culture; shy, reticent, and sensitive children are often perceived as well behaved and understanding (Chen, 2000; Ho, 1986). Accordingly, researchers have found that shyness-sensitivity is associated with social and psychological adjustment in Chinese children (e.g., Chen, Rubin, & Sun, 1992). In the present study, we were interested in how academic achievement was associated with shyness-sensitivity in the group context.

Relations Between Academic Achievement and Social Functioning: The Mediating Role of the Peer Group

Academic achievement may be associated with social functioning at both the within-group individual level and the group level. The associations at the individual level may be derived from intrapersonal processes such as individual social-cognitive competence or specific family socialization experiences (Chen et al., 1997). However, the associations at the group level (i.e., group mean academic achievement and group social behaviors) may indicate the significance of the group context. The group-level associations between achievement and social functioning may be due, in part, to the selection process in which the group provides a social milieu for clustering individuals with similar academic abilities and corresponding social behavioral styles. Moreover, the group-level associations may also reflect the mediating effect of the group. The term *mediating* is used in a broad sense here to indicate that the links between academic achievement and social functioning may be formed through, or facilitated by, the peer group context. The mediation may represent an important aspect of group influence on individual functioning (Cairns & Cairns, 1994).

The influence of group norms and organization may occur through social learning and group regulatory processes. In an academically oriented and competent group, for example, mutual support and assistance of members in learning activities may help them improve academic performance, which in turn may reduce deviant social behaviors and other social-relational problems (e.g., Coie & Krehbiel, 1984; Kellam et al., 1983; Maughan, Gray, & Rutter, 1985). Moreover, the common goal of

pursuing academic achievement requires individuals to engage in social behaviors that are conducive to learning, such as cooperation and self-regulation (Wentzel, 1991; Wentzel & Asher, 1995). Behaviors that disturb or impede academic activities such as disruptive and selfish behaviors are discouraged by the group.

The impact of group academic norms may also be due to the group reputation effect (Hymel, Bowker, & Woody, 1993). High-achievement groups are likely to obtain social recognition and prestige, which constitutes a desirable condition for individual social development. These groups, for example, may receive positive evaluations from peers and teachers, which, in turn, may help group members acquire leadership status in school. In contrast, membership in academically poor groups may be associated with negative social evaluations and reactions; as such, children in these groups may be viewed as generally deviant and problematic. Social reputation is an integral part of social interactions and may actively affect the process of group organization (Hymel et al., 1993). As specific hypotheses in this study, we expected that, similar to the patterns of relations between academic achievement and social functioning at the within-group individual level, group academic achievement would be associated positively with group social adjustment including overall peer acceptance, leadership status, and sociability-cooperation, and negatively with group social and behavoral problems such as peer rejection and deviant behaviors.

The Peer Group as a Moderator of Associations Between Individual Academic Achievement and Social Functioning

The significance of group norms may be reflected more directly in their moderation of individual-level relations between academic achievement and social functioning. Although academic achievement is expected to be associated with social functioning (e.g., Chen et al., 1997), the strength of the associations may vary across groups. For groups that function on the basis of academic achievement as a major standard, children are likely to evaluate each other according to their attitudes and achievement in academic areas. At the same time, group members may be sensitive to the feedback from group peers on their academic performance. Within the group, children who perform better on academic subjects are more likely to receive social and emotional support from others and have more opportunities to learn from others (Chen et al., 2000). However, children who are relatively weak in academic achievement may not benefit so much from group interactions.

Academic achievement may have different meanings for groups in which members are generally poor in academic performance. In these groups, academic achievement may be regarded as unimportant by the members. As a result, children who are weaker on academic achievement in the group may not experience much pressure from their peers. Moreover, the common negative attitudes toward academic achievement may lead to group approval and support for deviant behaviors, such as violation of school rules and disruption of classroom instruction, and thus make the children at particular risk for maladaptive social development (e.g., Cairns & Cairns, 1994). Based on these arguments, we expected that group-level academic performance might moderate the associations between individual academic performance and social functioning variables. Specifically, the positive relations between individual academic performance and prosocial-cooperative behavior, leadership, and peer acceptance would be stronger in high-achievement groups than in low-achievement groups. Consistently, the negative relations between individual academic achievement and social and relational problems such as aggression and overall peer rejection might be more evident in academically poor groups than in academically competent groups.

Grade and Gender Differences

We examined grade and gender differences in individual and group characteristics and in the effects of individual and group academic achievement on social functioning. Among them, grade and gender differences in characteristics and effects of peer groups were of particular interest. The Western literature (e.g., Rubin et al., 1998) indicates that relatively small and intimate cliques are the main form of peer groups in childhood. However, children's involvement in cliques tend to decline in adolescence, whereas affiliation with larger crowds becomes a salient feature of adolescent social life (e.g., Brown, Eicher, & Petrie, 1986; Cairns, Leung, Buchanan, & Cairns, 1995; Shrum & Cheek, 1987). The developmental shifts may be due to broader changes in social-cognitive abilities and social-ecological conditions. For example, whereas children may seek support from intimate cliques as a source of psychological dependence for the effort to establish personal autonomy from parents, adolescents may strive to acquire a sense of identity in a peer

context with different lifestyles and value systems (Brown, 1990). Moreover, with increasing age, more sophisticated social skills may allow adolescents to maintain extensive and different types of peer relationships (Rubin et al., 1998). Given relatively more intensive clique interactions and more emotional involvement in peer groups in childhood (e.g., Brown, 1990), we expected that the effects of group academic achievement on social functioning might be more evident in lower grades.

The findings are mixed in the Western literature concerning gender differences in group characteristics. Although some researchers have reported that boys are more likely than girls to engage in group activities and that boys' groups are larger in size than girls' groups (Benenson, Apostoleris, & Parnass, 1997; Brown, 1990; Maccoby, 1995; Ruble & Martin, 1998; Thorne, 1993; Thorne & Luria, 2001), others have failed to find significant gender differences in peer groups (e.g., Cairns et al., 1995; Tarrant, 2002). No gender differences have also been reported in Chinese children (Leung, 1996; Sun, 1995). The different results in the literature may be related to different methods used in the studies; gender differences were often found in observations of peer group activities (e.g., Benenson et al., 1997) but not in self-reports of group affiliations (e.g., Cairns et al., 1995). Peer groups are believed to be more important for boys than for girls (e.g., Maccoby, 1995). Thus, one might expect that group academic achievement would have stronger effects on social functioning in boys than in girls.

In summary, the peer group in children and adolescents has been an important topic in the area of social development. Researchers have been interested in how the group is involved in individual social and cognitive functioning. Although the group has often been conceptualized as a social context for development (e.g., Brown, 1990; Cairns & Cairns, 1994), the contextual model has seldom been directly assessed, largely because of methodological difficulties. Group context and individual functioning represent social complexities at different levels (Hinde, 1987). Conventional strategies such as multiple regression and ANOVA suffer from such problems as aggregation bias and misestimated precision and, more important, result in conceptual confusions by treating the social context as an ordinary "variable." In the present study, we examined, in a sample of Chinese children, the role of peer group context in maintaining relations between academic achievement and social functioning. We were interested in (a) relations between academic achievement and social functioning at the group level and (b) moderating effects of the group on the relations between individual academic achievement and social functioning. Hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992) was applied to analyze the relations between variables at different levels (group vs. individual levels). HLM allowed us to assess hierarchically nested relations through decomposing variances at different levels and estimating the effects of higher order variables on relations at certain levels, without involving aggregation bias and the "unit of analysis" problems (see Bryk & Raudenbush, 1992). Finally, as a secondary goal, we were interested in the descriptive properties (e.g., size, composition, homogeneity, age differences) of peer groups in Chinese children and adolescents.

Method

Participants

Participants in the study were 730 children (346 males and 384 females) in Grades 3, 6, and 10 in four ordinary schools in Shanghai, People's Republic of China. The students were mainly from families in which parents were nonprofessional workers, with an educational level of high school or below high school. Unlike a small number of "key" schools in the city in which students are often selected from different areas based on their school performance, students in ordinary schools come from the area where the school is located. The curriculum, established by the State Educational Bureau and identical in Chinese schools, consisted of the main subjects of Chinese, mathematics, English, and other courses such as sciences and art. There were five to six classes at each grade level, with approximately 40 students (roughly equal numbers of boys and girls) in each class. The mean ages of children were 9 years, 6 months; 12 years, 8 months; and 16 years, 1 month ($SD = 8$, 10, and 14 months, respectively) at Grades 3, 6, and 10, respectively. Students in elementary and high schools spent roughly the same amount of time in the classroom. The schedule of courses and other academic activities was typically identical for students in one class.

Procedure

We group administered to the children a peer assessment measure of social behavior, developed on the basis of The Revised Class Play (RCP; Masten, Morison, & Pelligrini, 1985), a measure of social networks and groups (Cairns, Gariepy, & Kindermann,

1989), and a sociometric nomination measure. Teachers were asked to complete a rating scale adapted from the Teacher–Child Rating Scale (T–CRS; Hightower et al., 1986) for each participant concerning his or her school-related social competence. In addition, data concerning children's leadership and academic achievement were obtained from school records.

The Western-based measures such as the Revised Class Play and the T–CRS were translated and back-translated to ensure comparability with the English versions. These measures have proved appropriate and valid in Chinese as well as in other cultures (e.g., Casiglia, Lo Coco, & Zappulla, 1998; Chen, Rubin, & Li, 1995b, 1997; Krispin, Sternberg, & Lamb, 1992). The administration of all measures was carried out by a group of psychology teachers and graduate students at Shanghai Teachers' University.

Measures

Peer assessments of social functioning. Peer assessments of social behavior were conducted using the procedure outlined by Masten et al. (1985). During administration, the research assistant read each of the behavioral descriptors (e.g., ''someone who is a good leader''), and children were asked to nominate up to three classmates who could best play the role if they were to direct a class play. When all children in the class completed their nominations, they turned to the next item, until nominations for all 30 items were obtained. Subsequently, nominations received from all classmates were used to compute each item score for each child. The item scores were standardized within the class to adjust for differences in the number of nominators. The Revised Class Play measure consisted of items in broad areas including sociability, aggression, and shyness (Masten et al., 1985). Factor analysis of the data in the present study indicated that the factor structure was identical to that in Masten et al.'s study except for the isolation-rejection items (''often left out'' and ''has trouble making friends''). These items did not load on the original shyness factor in the Chinese sample and thus were excluded from the calculation of the final variable. Consequently, three variables formed by the items were sociability-leadership, aggression-disruption, and shyness-sensitivity (see also Chen et al., 1992; Chen et al., 1995b, for further detail about the measure in Chinese children). Sociability-leadership included items tapping several aspects of social competence (e.g., ''makes new friends easily,'' ''helps others when they need it,'' ''polite''). Items in aggression-disruption were concerned with physical and verbal aggressive behaviors (e.g., ''gets a lot of fights,'' ''teases others too much,'' ''picks on other kids''). Shyness-sensitivity consisted of items assessing shy-inhibited behavior in social context (''very shy,'' ''feelings get hurt easily,'' ''usually sad''). Internal consistency was .81 for sociability, .93 for aggression, and .80 for shyness.

Teacher ratings. In Chinese schools, one teacher is usually in charge of a class. This head instructor often teaches one major course, such as Chinese language or mathematics; he or she also takes care of the various political, social, administrative, and daily affairs and activities of the class. The head teacher usually instructs the same group of children over several years, thus becoming very familiar with the students. Following procedures outlined by Hightower et al. (1986), the head teacher was asked to rate each child in his or her class on the 20 items of school-related social competence. Teachers were asked to rate, on a 5-point scale, how well each of these items described each child, ranging from 1 (*not at all*) to 5 (*very well*).

The items in the social competence measure (e.g., ''participates in class discussion,'' ''copes well with failure'') involved highly overlapping areas: (a) frustration tolerance, (b) assertive social skills, (c) task orientation, and (d) peer social skills (Hightower et al., 1986). Factor analyses of the data in the Chinese sample revealed that the 20 items constituted a single competence factor (Chen et al., 1995b). Thus, a global score of school-related competence, standardized within each class, was calculated. The internal consistency of this score was .91.

Sociometric nominations. Children were asked to nominate up to three classmates with whom they most liked to be and three classmates with whom they least liked to be (positive and negative nominations). As suggested by other researchers (e.g., Coie, Terry, Lenox, Lochman, & Hyman, 1995), cross-gender nominations were allowed. The nominations received from all classmates were totaled and standardized within each class to permit appropriate comparisons. The positive and negative playmate nominations received from peers provided indexes of peer acceptance and peer rejection, respectively.

Leadership. In Chinese schools, various formal student organizations are often hierarchical in nature. Leaders of these organizations, elected by peers and teachers, are usually believed to be good students, especially in aspects of behavior and morality. Data on student leadership were collected from school administrative records and coded as follows: 0 for students who did not hold a leadership

position, 1 for students who were group leaders within the class, 2 for students who were leaders at the class level, and 3 for students who were leaders at the school or municipal level. The mean leadership score was .40 ($SD = .73$).

Academic achievement. Information concerning academic achievement in Chinese, mathematics and English was obtained for all participants from the school records. The scores of academic achievement were based on objective examinations conducted by the school. Maximium scores for Chinese, mathematics, and English were 100; a test score of 60 is usually considered the cut-off between a pass and a failure in a course. In the present study, scores on each of Chinese, mathematics, and English were summed to form a single index of academic achievement (*range* = 0 to 300). The mean score of this variable was 233.39 ($SD = 34.10$).

Peer social groups. Because of the collectivistic orientation in school education, Chinese students are encouraged to participate in a variety of social activities that may provide extensive opportunities for them to develop social understanding of peers and relationships in the class. A composite social cognitive map technique, developed by Cairns et al. (1989), was adopted to identify children's natural social groups and networks. This technique taps children's independent perceptions of network relationships in the classroom and thus may be particularly useful for research in different cultures because it focuses on the inquiry of children's social contexts from an insiders' perspective. Specifically, the participants were asked to report both their own and others' peer groups in their class (''Are there people in school who hang around together a lot? Who are they?'' and ''Do you have a group you hang around together a lot in school? Who are these people you hang around with?''). Based on the reports of all participants, a co-occurrence matrix was constructed from the number of occasions that any two persons co-occurred in the same group. Specifically, each participant's group-membership profile was first generated based on the frequencies of nominations of group membership with every other child in the class. Then, a profile similarity index was derived by correlating pairs of individual group-membership profiles. Children with similar group-membership profiles were clustered into the same group based on an $r > .40$ cut-off point (Cairns & Cairns, 1994). A computer program (Leung, 1998) was used to assist in plotting a composite cognitive map of peer social groups in which children's peer affiliations were identified. As required by HLM, children who were associated with more than one group were assigned the membership of the predominant group for which the child received the most nominations or the highest centrality status. The method has proved effective in identifying peer groups and networks in Western and Chinese children (see Cairns & Cairns, 1994; Chen et al., 2001; Kinderman, 1993, Leung, 1996, for detailed descriptions).

Group Mediating and Moderating Effects in the HLM Framework

The hypothesized mediating and moderating effects of peer group functioning have been conceptualized in the statistical framework of HLM (Raudenbush & Bryk, 2002). Two-level HLM is like a ''regression of regression'' or conducting the regression twice, once at the individual level and once at the group level. In the present study, HLM conducts random effect regression at the level of individual students and treats the resulting coefficients (i.e., intercepts and slopes) as random or outcome variables on which other regression analyses are conducted using group academic performance as the predictor. The general HLM models are as follows:

$$\begin{aligned}\text{Level 1}: \ &\text{Individual social functioning}_{ij} \\ &= \beta_{0j} + \beta_{1j}\,(\text{individual academic achievement}_{ij}) \\ &\quad + r_{ij},\end{aligned}$$

where β_{0j} and β_{1j} are individual-level intercept and slope, respectively, and r_{ij} is individual-level residual;

$$\begin{aligned}\text{Level 2}: \ \beta_{0j} &= \gamma_{00} + \gamma_{01}\,(\text{group academic achievement}_{j}) \\ &\quad + \mathrm{u}_{0j} \\ \beta_{1j} &= \gamma_{10} + \gamma_{11}(\text{group academic achievement}_{j}) \\ &\quad + \mathrm{u}_{1j},\end{aligned}$$

where γ_{00} and γ_{01} are group-level coefficients (intercept and slope) in predicting β_{0j}, and γ_{10} and γ_{11} are group-level coefficients in predicting β_{1j}. In these equations, u_{0j} and u_{1j} are the group-level residuals.

To investigate the hypothesized mediating effect of group academic achievement, the Level 1 predictor, individual academic achievement, is group-mean centered. That is, group mean achievement is subtracted from individual achievement scores to form deviation scores as Level 1 predictors. By using deviation scores, the resulting intercept, β_{0j}, is interpreted as the expected value or average value of a group on the concerning variable (Raudenbush

& Bryk, 2002). The variance associated with the intercept represents group mean differences in the social functioning variable. This centering method is essential in investigating the hypothesized group mediating effect, which is registered in γ_{01}. With centering, γ_{01} represents the slope of group academic achievement in the prediction of group social functioning and indicates the part of the relations accounted for by the group processes. The group academic achievement, formed by group members' individual scores that are hypothesized to be related to individual social functioning in the same direction, would exert a mediating effect in the two-level relations when a significant γ_{01} is indicated by t test.

The hypothesized moderating effect of group academic achievement is represented by γ_{11} in the previous equations. Group academic achievement may moderate the individual-level associations by affecting the concerning coefficient β_{1j} in different directions. A simple rule of thumb in interpreting HLM is that, when a Level 2 coefficient, γ_{11}, is of the same sign as the Level 1 coefficient, β_{1j}, the Level 2 predictor is said to strengthen the Level 1 association in the same direction as indicated by the Level 1 coefficient. When the two cross-level coefficients are of the opposite sign, the Level 2 predictor attenuates the Level 1 relation, or strengthens it in the direction opposite to that indicated by the Level 1 coefficient. The notions of mediating and moderating effects in HLM are consistent with the underlying statistical reasoning of these effects in regression analysis (Baron & Kenny, 1986). All measures were standardized in the HLM analyses in the present study.

Results

Descriptive Data

Characteristics of peer groups. Identified in the sample were 117 groups (44 male groups, 55 female groups, and 18 mixed-gender groups), consisting of 645 participants (88.4%). Among them, 110 (17%) were affiliated with a second group (18 groups) and 7 (1%) with a third group (2 groups). Eighty-five children did not belong to any group. There were nonsignificant gender and grade differences in the percentage of children who were affiliated with the group. Group sizes ranged from 3 to 16 ($M = 5.80$, $SD = 3.30$), 3 to 15 ($M = 5.53$, $SD = 2.36$), and 3 to 15 ($M = 7.00$, $SD = 3.09$) for male, female, and mixed-gender groups, respectively; nonsignificant differences were found in group size among the three types of groups. Groups in 10th grade ($M = 7.19$, $SD = 3.24$) were larger than groups in 3rd and 6th grades ($M = 5.33$ and 5.59, $SD = 2.34$ and 2.92, respectively), $F(2, 114) = 3.90$, $p < .05$.

Group means of original academic achievement scores ranged from 166.00 to 280.43 ($M = 234.06$); standard deviation of group mean scores was 27.05. For high- and low-achievement groups identified using the criteria of 1 *SD* above and 1 *SD* below the mean score of all groups, group academic achievement scores were 261 and 207, respectively. The within-group variability (standard deviation) on academic achievement was 23.04.

Differences between group members and nonmembers. A MANOVA was conducted, based on the whole sample, to examine the overall effects of group membership (members vs. nonmembers), child gender, grade, and their interactions on the adjustment variables. The analysis revealed significant main effects of group membership, Wilks = .97, $F(8, 721) = 2.63$, $p < .01$; gender, Wilks = .93, $F(8, 721) = 6.22$, $p < .001$; and grade, Wilks = .82, $F(16, 721) = 8.00$, $p < .001$. Nonsignificant interactions among group membership, gender, and grade were found. Further univariate analyses indicated that group members had significantly higher scores on sociability and positive sociometric nominations than did nonmembers. Boys had higher scores on aggression and negative sociometric nominations and lower scores on positive sociometric nominations, leadership, teacher-rated competence, sociability, and shyness-sensitivity than did girls. Academic achievement in Grades 3 and 6 was higher than in Grade 10 ($M = 245.44$, 241.78, and 205.96, $SD = 29.20$, 35.08, and 20.99 for Grades 3, 6, and 10, respectively). The means and standard deviations of the variables for group members and nonmembers are presented in Table 1.

Correlations among the social functioning variables are presented in Table 2. The results indicated that, in general, negative sociometric nominations and aggression were positively correlated, and both of them were negatively correlated with other variables. The magnitudes of the correlations were from low to moderate, suggesting that these measures tapped different, overlapping aspects of social adjustment.

Group homogeneity. To examine similarity among group members in social functioning and adjustment, we computed between- and within-group variances and intraclass correlations on standardized variables. The results are reported in Table 3. In the present study, intraclass correlation represents the proportion of the observed variance of a variable that is between peer groups relative to the within-group variance. The magnitude of the index

Table 1
Means (and Standard Deviations) of Academic Achievement and Social Functioning Variables for Group Members and Nonmembers

	Group members		Nonmembers		*F* value	
Academic/social variable	Boys ($n = 300$)	Girls ($n = 345$)	Boys ($n = 46$)	Girls ($n = 39$)	Group	Sex
Academic achievement	226.97	233.35	238.71	236.71	0.30	3.63
	(36.23)	(33.70)	(31.63)	(31.71)		
Positive sociometric nominations	− 0.10	0.20	− 0.69	− 0.23	20.76***	11.61***
	(1.06)	(0.92)	(0.55)	(0.94)		
Negative sociometric nominations	0.12	− 0.14	0.34	− 0.12	1.11	10.39***
	(1.12)	(0.72)	(1.57)	(0.89)		
Leadership	0.28	0.53	0.14	0.49	0.62	12.59***
	(0.64)	(0.81)	(0.41)	(0.72)		
Teacher-rated competence	− 0.32	0.33	− 0.49	0.10	3.04	31.74***
	(0.99)	(0.88)	(0.96)	(1.02)		
Sociability-leadership	− 0.13	0.18	− 0.43	− 0.03	5.10*	9.32**
	(0.79)	(1.16)	(0.15)	(1.03)		
Aggression-disruption	0.29	− 0.26	0.23	− 0.33	0.33	25.47***
	(1.32)	(0.36)	(1.28)	(0.27)		
Shyness-sensitivity	− 0.20	0.22	− 0.27	0.02	1.31	10.15**
	(0.68)	(1.17)	(0.79)	(1.15)		

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 2
Intercorrelations Among Social Functioning Variables

Social variable	1	2	3	4	5	6
1. Positive sociometric nominations						
2. Negative sociometric nominations	− .11**					
3. Leadership	.28***	− .08				
4. Teacher-rated competence	.35***	− .23***	.46***			
5. Sociability-leadership	.46***	− .05	.48***	.49***		
6. Aggression-disruption	− .01	.69***	− .09**	− .22***	.03	
7. Shyness-sensitivity	.14***	.17***	.10**	.06	.16***	.07

**$p < .01$. ***$p < .001$.

indicates the extent to which members within groups are similar to each other and members across groups are different from each other with respect to the variable under consideration. The intraclass correlations ranged from .04 to .57, with most of them around .10. Intraclass correlation on academic performance was the largest, indicating peer groups were most homogenous on this variable.

In addition to intraclass correlations, we computed correlations between each child's own scores and average scores of the group peers, as recommended by Kinderman (1993). Also reported in Table 3, these correlations were consistent with the intraclass correlation results, with the highest within-group homogeneity on academic achievement.

In the following sections, we report results concerning within-group individual-level associations, group-level mediating effects, and group-level moderating effects. Consistent with the literature (Chang, in press), four decimal points were retained. The analyses were conducted based on children who were group members.

Relations Between Academic Achievement and Social Functioning at the Individual Level

Average within-group relations between individual academic achievement and individual social variables (β_{1j}) are presented in Table 4. These results were obtained from random effect regression using HLM. Different from the traditional ordinary least squares, the random effect regression allowed the otherwise fixed coefficients to vary across peer groups. The results indicated that individual academic performance was positively associated with

Table 3
Between- and Within-Group Variance Components and Intraclass and Child–Peer Correlations

Academic/social variable	Variance component		Intraclass correlation	Child–peer correlation
	Between	Within		
Academic achievement	.55	.42	.57	.70
Positive sociometric nominations	.07	.91	.07	.15
Negative sociometric nominations	.04	.94	.04	.26
Leadership	.16	.85	.16	.31
Teacher-rated competence	.13	.87	.13	.32
Sociability-leadership	.05	.96	.05	.16
Aggression-disruption	.13	.85	.13	.37
Shyness-sensitivity	.08	.91	.08	.17

Note. All child–peer correlations are significant at $p < .01$.

Table 4
Relations Between Academic Achievement and Social Variables at the Within-Group Individual Level (β_{1j})

Social variable	Effect	SE	*t* test
Positive sociometric nominations	.4798	.1114	4.31***
Negative sociometric nominations	−.2593	.0866	−3.00**
Leadership	.5165	.0650	7.94***
Teacher-rated competence	.4744	.0606	7.82***
Sociability-leadership	.4277	.0790	5.41***
Aggression-disruption	−.1272	.0738	−1.72
Shyness-sensitivity	.0060	.0742	−0.08

**$p < .01$. ***$p < .001$.

Table 5
Relations Between Academic Achievement and Social Variables at the Group Level (γ_{01}, Effects of Group Academic Achievement on Intercepts)

Intercept of	Effect	SE	*t* test
Positive sociometric nominations	.3079	.0889	3.46***
Negative sociometric nominations	−.1932	.0704	−2.74**
Leadership	.2211	.0530	4.17***
Teacher-rated competence	.2302	.0529	4.35***
Sociability-leadership	.1688	.0492	3.43**
Aggression-disruption	−.1415	.0575	−2.46**
Shyness-sensitivity	.0188	.0457	0.41

**$p < .01$. ***$p < .001$.

positive sociometric nominations, leadership, teacher-rated competence, and sociability. It was negatively associated with negative sociometric nomination. Academic achievement was nonsignificantly associated with aggression and shyness-sensitivity at the individual level.

Relations Between Academic Achievement and Social Functioning at the Group Level: The Mediating Effect

The mediating effects (γ_{01}) of group academic achievement on the group social functioning variables (i.e., effects of group academic achievement in predicting individual-level intercepts) are presented in Table 5. The results indicate that academic achievement was associated with social functioning at the group level in the same direction as it was at the individual level. Group academic achievement was positively related to group positive sociometric nominations, leadership, teacher-rated competence, and sociability, and negatively related to group negative sociometric nominations and aggression.

HLM analyses including group academic achievement as the Level 2 predictor were conducted to

Table 6
Variance and Proportion of Variance Explained of Group Social Functioning (Intercept) and Relation Between Individual Academic Achievement and Social Functioning (Slope)

Social variable	Original variance	Residual variance	Proportion of variance explained
Positive sociometric nominations			
Intercept	.2154	.1795	16.67%
Slope	.0496	.0086	82.66%
Negative sociometric nominations			
Intercept	.2025	.1711	15.51%
Slope	.4844	.4446	8.22%
Leadership			
Intercept	.2126	.1738	18.25%
Slope	.2005	.1345	32.92%
Teacher-rated competence			
Intercept	.1627	.1249	23.23%
Slope	.0489	.0398	18.61%
Sociability-leadership			
Intercept	.1376	.1128	18.02%
Slope	.3812	.2939	22.90%
Aggression-disruption			
Intercept	.1602	.1432	10.61%
Slope	.1494	.1387	7.16%
Shyness-sensitivity			
Intercept	.0830	.0838	0.00%
Slope	.1001	.1022	0.00%

Table 7
Moderating Effects (γ_{11}) of Group Academic Achievement on Relations (Slopes) Between Individual Academic Achievement and Social Variables

Slope of	Effect	SE	*t* test
Positive sociometric nominations	.3582	.1108	3.23**
Negative sociometric nominations	.2602	.1218	2.14*
Leadership	.2906	.0784	3.70***
Teacher-rated competence	.1667	.0747	2.23*
Sociability-leadership	.3522	.1026	3.43***
Aggression-disruption	.1467	.0650	2.25*
Shyness-sensitivity	.0674	.0818	0.82

*$p < .05$. **$p < .01$. ***$p < .001$.

examine the variations in both group means of social functioning variables (intercept) and relations between individual academic achievement and social functioning variables (slopes). The original variance (before fitting the Level 2 predictor of group academic achievement), residual variance (after fitting the predictor) of each social functioning variable, and proportion of variance explained by group academic achievement (similar to R^2 in regression analysis) are presented in Table 6. The results indicated that the group mediating effect accounted for substantial variance of group social functioning associated with the intercept. Except for shyness-sensitivity, group academic achievement accounted for between 10% and 23% of the between-group variability on the social functioning variables.

Group Moderating Effects on Slopes of Relations Between Individual Academic Achievement and Individual Social Functioning

The moderating effects (γ_{11}) of group academic performance on slopes of relations between individual academic achievement and social functioning are presented in Table 7. We found that group academic

performance had positive effects on relations between individual academic achievement and positive sociometric nominations, leadership, teacher-rated competence, and sociability. The results indicate that high group academic achievement strengthened the positive relations between individual academic performance and the social variables. That is, the relations between academic and social competence were stronger for groups with higher mean levels of academic performance. As indicated in Table 6 (slope), the enhancing effect of group academic achievement accounted for the largest group variation in the relation between individual academic achievement and positive sociometric nominations.

Group academic performance had positive effects on the associations between individual academic achievement, on the one hand, and negative sociometric nominations and aggression, on the other. The different directions of the group effects and within-group individual-level relations indicated that the negative relations between academic achievement and negative sociometric nominations and aggression were strengthened by low group academic achievement. That is, the negative associations between academic achievement and social-behavioral problems were stronger for groups with lower levels of academic achievement.

Gender and Grade Effects

To examine gender and grade effects, each individual- and group-level academic effect was tested, in a separate HLM analysis, as functions of one dummy variable representing gender and two dummy variables representing the three grades. Gender and grade and their interaction with group academic achievement were included as Level 2 variables. No significant gender effects were found. However, grade differences were significant for relations between individual academic achievement and teacher-rated competence and sociability ($p < .05$). The relations were significantly stronger in Grade 3 (effect = .6325 and .5205, for teacher-rated competence and sociability, respectively) than in Grade 10 (effect = .3308 and .2134, respectively). Similarly, there were significant grade differences in group effects on teacher-rated competence ($p < .05$), as reflected in Grade × Group Achievement interaction; the mediating and moderating effects of group academic achievement were significantly stronger in Grade 3 (effect = .4562 and .3264) than in Grade 10 (effect = .1990 and .0654). There were no significant differences between Grade 3 and Grade 6.

Discussion

Theorists and researchers in social development have been interested in the role of the peer group in children and adolescents' social and cognitive functioning. Despite the argument on the contextual nature of the group (Brown, 1990; Hinde, 1987), however, the issue has been inadequately examined from a contextual perspective, largely because of methodological difficulties in assessing the different levels of social complexity. As a result, little is known about how the peer group is involved in individual social, emotional, and psychological adjustment. As a recent advance in analytic methods, HLM provides a useful means to assess hierarchically nested relations through decomposing variances at different levels and estimating the effects of higher order variables on relations at certain levels. HLM has been increasingly appreciated and used by developmental researchers, especially in the study of growth curves of social and cognitive abilities. In the present study, we applied this technique to examine contextual effects of the group on the relations between academic achievement and social functioning. The results indicated that academic performance and social adjustment might be associated both at the group level and at the within-group individual level, and group academic achievement might moderate the individual-level relations. To understand these results, a brief discussion of the descriptive properties of peer groups in Chinese children may be useful.

Group Characteristics in Chinese Children

It was found that children who were affiliated with groups differed from those who were not in sociability and peer acceptance. Group members had higher scores on these two variables. These results were unsurprising given that sociable and socially accepted children might be more active in social interactions and thus more likely to be involved in peer groups. In general, however, there were no significant and consistent differences between group members and nonmembers on indexes of social and school adjustment including academic achievement, teacher-rated competence, leadership status, and aggression. The results suggest that children with different social and school conditions are largely similar in group involvement, and there were considerable variations among group members in these aspects.

As expected, peer groups in Chinese schools were formed and operated mainly on similar academic

achievement. Group members were found to be more homogenous on academic achievement than on other social and school variables. The results suggest that although being sociable and active in social interactions may help establish group affiliation, the specific group the child eventually joins is determined mainly by his or her academic achievement. The findings that within-group variances were greater than between-group variances on social variables suggest that peer groups in Chinese children are heterogeneous on social characteristics. Group organization is based mostly on academic performance. Given this background, it is reasonable to expect that academic achievement as the primary group norm plays an important role in guiding and regulating individual behaviors.

Contextual Effects of the Peer Group

Our primary focus was on contextual effects of the peer group on the relations between academic achievement and social functioning. The results were straightforward. We found that academic achievement was positively associated with indexes of social adjustment, including peer acceptance, leadership, teacher-rated competence, and peer-assessed sociability, at the within-group individual level. The results were consistent with previous findings in Chinese children (e.g., Chen et al., 1997; Chen et al., 2001) as well as in other cultures (e.g., Wentzel, 1991). Similar to the within-group patterns, academic achievement was positively associated with social adjustment and negatively associated with social probblems at the group level, which indicates that academically competent groups were socially more adaptive than groups with poor average academic achievement. Group-level associations may be due, in part, to the group-selection process in which academically competent children are affiliated with each other (as reflected in the high intraclass correlation on academic achievement) and display a positive social profile as a group. It is also possible that the group-level associations resulted from the group socialization process. Socioemotional support and group regulatory processes in daily activities to pursue common social and academic goals may play a significant role in the development of social skills and socially appropriate behavior (e.g., Coie & Krehbiel, 1984; Kandel, 1978). Moreover, group academic status may be related to the group reputation and thus affect evaluations and reactions of adults and peers. Such social recognition may constitute an important condition for individual social development including social acceptance and the acquisition of leadership status. In short, by providing a social context for the selection and socialization processes (e.g., establishing the group profile and reputation, mutual regulation based on group norms), one of the functions of the peer group in Chinese children may be to serve as a mediator of the relations between academic achievement and social functioning.

The role of the peer group may be further illustrated in its moderating effects on the within-group relations between academic achievement and social variables. Specifically, we first found that group-level academic performance had positive effects on relations between individual academic achievement and indexes of social adjustment such as peer acceptance, social competence, and leadership. The results suggest that the positive relations between individual academic performance and social adjustment might be reinforced by the group academic norm. The enhancing effect of group academic achievement on the relations between academic and social competence was most salient on peer acceptance, which indicates that peer evaluations in high-achievement groups might be particularly sensitive to individual academic performance. We also found that group academic achievement had positive effects on the negative relations between individual academic achievement and peer rejection and aggression, indicating that the negative associations between academic achievement and social-behavioral problems might be strengthened by overall poor group academic performance.

The differential associations between academic achievement and social functioning across peer groups suggest that academic achievement might have different ''meanings'' for the groups. For groups with high average academic achievement, academic achievement, as a major group norm, may serve as the basis for peer interactions and group functioning. Nevertheless, there are individual differences on academic achievement within these groups. Group members who are academically more competent may receive more social and emotional support, and obtain more benefits from peer interactions in the group. The positive group experiences may help them develop social skills and confidence in their interactions with other children and adults (Chen et al., 1997; Rubin et al., 1998). In contrast, members who are relatively weaker in academic performance in the group may receive little social support and assistance in the group and have fewer opportunities to learn social skills such as assertive leadership skills. As a result, these children may become relatively incompetent in social adjustment.

In groups in which children are generally poor in academic performance, academic achievement may not be highly appreciated or emphasized as a group norm. Whereas relatively stronger children may not receive recognition and support for their achievement, relatively weaker children in the group may not experience difficulties with their group peers. On the contrary, academically poor children may receive approval and endorsement from each other for their shared negative attitudes toward the school and socially deviant behaviors. As a result, the maladaptive group context may exacerbate the development of social and behavioral problems of academically poor children. Thus, although academically poor children generally have adjustment problems in Chinese schools, being affiliated with a low-achievement group may make the children at heightened risk for deviant social development (Cairns & Cairns, 1994). It is important to take into account contextual effects in designing prevention or intervention programs for children in academically poor groups.

Based on previous findings (e.g., Chen et al., 1992), we expected that academic achievement would be positively associated with shyness-sensitivity at the individual and group levels. However, the results indicate that the associations were not significant. These results were consistent with reports that the adaptive value of shy-sensitive behavior may have declined in Chinese children in recent years (Hart et al., 2000; Schwartz, Chang, & Farver, 2001), which may be due to the historical changes in Chinese society. Over the past decade, China has carried out full-scale reforms toward the market economy that allows for the adoption of measures from capitalism. During this process, Western ideologies and values such as those on individual social assertiveness and competitiveness have been introduced into the country. The mixed attitudes of peers toward shy-sensitive children may indicate the cultural conflict between imported Western values on social initiative and assertiveness and traditional Chinese values on shyness and social restraint. Thus, it may be understandable that peer groups do not facilitate the formation of a consistent pattern of the association between academic achievement and shyness-sensitivity.

Gender and Grade Differences

We found no gender differences in peer groups. The results were consistent with the findings of previous studies using similar methods in Western and Chinese children (e.g., Cairns et al., 1995; Leung, 1996; Sun, 1995; Tarrant, 2002). However, the results were inconsistent with the findings based on observations that indicate greater group membership and larger group size in boys (e.g., Benenson et al., 1997; Thorne & Luria, 2001). Taken together, the different results suggest that although boys and girls may participate in different forms or types of peer activities (e.g., girls' activities tend to occur in dyadic context, as observed by teachers and researchers; Benenson et al., 1997), they may establish similar social connections and group affiliations in school situations. Moreover, our results suggest that peer groups may have similar effects on social adjustment for boys and girls. Obviously, the issue on gender differences needs to be investigated further in the future. It is important to understand common and unique features of the social-ecological settings including peer groups in which boys and girls acquire their skills and experiences.

Whereas percentages of children who were affiliated with peer groups were similar in different grades, groups in Grade 10 were found to be larger than in Grades 3 and 6. Similar results have been reported in Western children (Brown et al., 1986; Cairns et al., 1995). One explanation is that some of children's peer groups may change from friendship-based cliques to reputation-based crowds in adolescence and youth (Brown, 1990). The developmental change may result from children's responses to the emergence of internal and external demands in adolescence such as the maintenance of autonomous behaviors in social interactions and exploration of different lifestyles in the social world. With age, children may become increasingly dissatisfied with the high involvement and mutual constraints in tight-knit cliques that may impede the pursuit of individual interests and the acquisition of various peer experiences. The grade differences in the structural aspect of the peer group appear to correspond to those in the effect of the group on teacher-rated competence. Because children may engage in more intensive and intimate group interactions in childhood, it is conceivable that the effects of group academic norms tend to be stronger in lower grades (e.g., Brown, 1990).

The relations between individual academic achievement and social competence were stronger in elementary school children than in senior high school children. Similar results were found concerning relations between academic achievement and psychological adjustment in Chinese children (Chang, McBride-Chang, Stewart, & Au, 2003). The declined associations in high school children indicate that social functioning may become increasingly

resistant to the influence of school performance with age. For example, given the great pressure on academic achievement in Chinese schools, younger children may be more likely to react to academic difficulties and frustration by displaying deviant social behaviors and psychological problems. However, children in adolescence may develop effective strategies in coping with stress and distress in school adjustment. Note that these results may be specific to Chinese culture, where academic achievement is highly emphasized from the early years (Chang et al., 2003). In North America, the associations between academic achievement and social functioning in adolescence have been found to be robust, or even stronger than in middle childhood (e.g., Masten et al., 1995; Wentzel & Asher, 1995).

Cultural Implications

The present study was conducted in Chinese children and adolescents. Several features that may be specific to Chinese culture, including emphasis on the socialization function of peer relationships, adult intervention in peer groups, and high pressure on academic achievement, should be noted for understanding the results. As we indicated earlier, the organization and significance of peer groups may be affected by cultural norms and beliefs, particularly those concerning socialization goals (DeRosier & Kupersmidt, 1991; Tietjen, 1989). It has been argued that Chinese culture tends to emphasize the instrumental value, rather than expressive or emotional facets, of social relationships (Smart, 1999). The quality of peer relationships including peer groups is appraised mainly in terms of whether peer activities are guided by the ''right'' social norms and whether these activities are beneficial to children's social and school achievement (Luo, 1996). In contrast, psychological functions of the peer group such as the provision of emotional support and enhancement of self-regards, which are appreciated in Western cultures (e.g., Rubin et al., 1998), are often neglected in China. The significant mediating and moderating effects of peer groups on the relations between academic achievement and social functioning may be due, in part, to the emphasis on the instrumental aspect of peer groups in Chinese culture.

To help children achieve the socialization goals, Chinese culture encourages united and uniform social actions under adults' direct guidance and control. Spontaneously formed natural groups (*Xiao Tuan Ti* in Mandarin), particularly those based on norms that are inconsistent with the socialization goals, are often regarded as a threat to the collective well-being. A major focus of adult intervention is on the academic orientation of the group in Chinese children. As one of the most important socialization tasks, academic achievement has been highly valued and stressed in both traditional and contemporary Chinese societies (Stevenson et al., 1990). Largely because of limited opportunities to receive a higher education in China (the enrollment ratio at the post-secondary level in 1999–2000 was 7.45% in China; UNESCO, 2002), there is strong academic competition at almost every level from kindergarten to high school. As a result, children are pressured by adults to perform optimally in school. The consensus among teachers, parents, and the society as a whole on the importance of academic achievement is likely to be reflected in the organization of children's peer groups. When group members consistently endorse the adult values, the relevance of academic achievement to various aspects of social adjustment may be promoted by the group academic norm. The results concerning the significant effects of group academic norms on individual social functioning may indicate the involvement of culturally directed socialization beliefs and practices in the construction of the social settings of Chinese children (Super & Harkness, 1986). Based on these arguments, it is possible that children in academically poor groups in China are more at risk for social problems than their Western counterparts. It will be interesting to investigate whether the results found in the present study can be generalized to other cultures where academic achievement is not as highly valued and emphasized as in China.

Conclusions, Limitations, and Future Directions

As an attempt to explore the complex phenomenon of the peer group, this study provided valuable information about the contextual nature of the peer group in mediating and moderating the relations between academic achievement and social functioning in Chinese children. Moreover, from a methodological perspective, the study demonstrated that HLM might be a useful technique in investigating how the peer group served as a social context for individual functioning.

There are several weaknesses in the study. First, the data presented were correlational and thus did not imply causal directions. The terms *mediation* and *moderation* were used mainly in a statistical sense. As a conceptual framework based on the contextual perspective and group socialization theory (e.g., Brown, 1990; Harris, 1995), we focused on the effects

of group academic norms on individual social functioning, largely because peer groups were highly homogenous on academic achievement in Chinese schools. Nevertheless, relations between academic achievement and social functional are likely to be bidirectional at both individual and group levels. Conclusions concerning causality should be drawn with caution. Longitudinal data may help clarify this issue despite difficulties in following up highly fluid peer groups (Cairns et al., 1995; Neckerman, 1995).

Another limitation of the study is that no Western comparison sample was included. We used the Western literature as a background for the discussion of the peer group in terms of its significance and functions in social development (e.g., Brown, 1990; Cairns & Cairns, 1994). In general, the results meshed well with this literature. However, most of the specific results were not directly comparable with the Western findings because there is virtually no existing research on the mediating and moderating effects of peer groups in the West. Thus, the present study needs to be replicated in other cultures, including North America.

Finally, children's peer groups operate in larger social contexts. This may be particularly the case in China given the emphasis of adults' involvement in children's social interactions and relationships (Chen, 2000). Thus, it will be important to investigate in the future how school circumstances such as teacher–student interactions and family conditions such as parenting beliefs, attitudes, and behaviors may affect children's peer group organization and development.

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