The primary emphasis of this two-study dissertation was to examine the function of peer group membership in children’s social-emotional adjustment during middle childhood. Each study was conducted using data from a sample of 455 third through fifth grade students attending four elementary schools in the Southeastern United States. Study one investigated the agreement between two common methods used to assess group membership among children, the self-reported friendship group (SRFG) and peer-reported cliques derived through Social Cognitive Maps (clique). Further, study one assessed whether children’s perceptions of their friendship group characteristics correspond with the characteristics of the SRFG or the clique more closely. Results from this study indicate that the SRFG and clique provide complimentary information when used in combination.

Study two of this dissertation examined the goodness-of-fit between elementary-aged children and their group of friends. Specifically, this study investigated whether group norms moderated the relation between personal characteristics of the child (i.e., personality and
behavior motivation) and their self-reported feelings of social identification with the peer group. Consistent with a goodness-of-fit model, results indicated that for some behavioral domains (misbehavior, boyfriend/girlfriend relations, and trends), the fit between children’s personal characteristics and the characteristics of their group significantly predict children’s feelings of social identity, above and beyond the variance explained by personal or group characteristics alone. Together, the findings of these two studies contribute to the peer relations literature by expanding our understanding of peer group assessment techniques and by identifying important predictors of social identity.

INDEX WORDS: Peer Groups, Cliques, Social Cognitive Maps, Social Identity, Personality
CLIQUES AND SELF-REPORTED FRIENDSHIP GROUPS AMONG THIRD THROUGH FIFTH GRADE STUDENTS: A TWO STUDY INVESTIGATION OF METHOD AGREEMENT AND PREDICTORS OF SOCIAL IDENTITY

by

MARY ESTHER LUTZ

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MARY ESTHER LUTZ

Major Professor: A. Michele Lease
Committee: Jonathan Campbell
            Roy P. Martin
            Stacey Neuharth-Pritchett

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
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CHAPTER 1

DISSERTATION INTRODUCTION

Middle childhood signifies a time of marked change in children’s social experiences. During this developmental period, the majority of children’s social interactions begin to occur within the context of smaller friendship-based groups or cliques, referred to herein as peer groups, and most children report being a member of such groups (Chen, Chang, & He, 2003; Gest, Farmer, Cairns, & Xie, 2003; Ryan, 2001). Peer group membership plays an important role in the development of academic and social-emotional adjustment during the middle childhood years (Kwon & Lease, 2007; Molloy, Gest, & Rulison, 2010) and the impact of these early social experiences extend well into adolescence and adulthood (Bagwell, Newcomb, & Bukowski, 1998; Pedersen, Vitaro, Barker, & Borge, 2007).

Social identity, a construct that encompasses a child’s basic thoughts and feelings regarding group membership, is an important facet of children’s self-concepts (Tajfel, 1978) and is related to a number of indicators of social-emotional adjustment (Baumeister & Leary, 1995; Newman et al., 2007). The study of social identity during middle childhood warrants careful consideration—as peer interactions become increasingly localized within smaller peer groups (Rubin, Bukowski, & Parker, 2006), the psychological need for connectedness and belonging becomes more and more distinct (Sullivan, 1953). Understanding the factors that contribute to children’s feelings of social identity is an important task for researchers and practitioners, as this
knowledge may help guide the development of prevention and intervention strategies aimed at strong social-emotional adjustment.

Study one of this two-study dissertation examines the agreement between two methodological techniques commonly used for measuring children’s peer group membership, the self-reported friendship group (SRFG) and peer-reported cliques derived through Social Cognitive Maps (clique). Previous studies comparing various peer group measurement methods tend to find considerable overlap among techniques (Cairns et al., 1995; Gest et al., 2003, 2005; Rodkin & Ahn, 2009). However, the agreement among methods is never perfect, indicating that for some children, group membership might be strictly contingent upon methodological decisions.

A secondary aim of study one is to examine which group, the SRFG or clique, children reference when asked to evaluate the behavioral characteristics of their friend group. In other words, when asked to describe some characteristic of their friend group, do children think back only to those children listed in their self-reported peer group, or are their conceptions also influenced by members of their peer-reported cliques? A substantial body of research exists indicating that children are influenced by many different facets of peer relations, including peer relations that are grounded in friendship-based and affiliation-based ties (Kwon & Lease, 2007, 2009; Molloy, Gest, & Rulison, 2010); therefore, it is reasonable to hypothesize that children’s cognitive representations might align with both the SRFG and clique.

Study two of this dissertation aims to investigate the person-level and group-level characteristics that predict children’s self-reported feelings of social identity. Of particular interest was whether group-level characteristics, namely group norms, moderated the relationship between personal characteristics (i.e., personality and self-reported norm motivation) and social
identity. Previous research indicates that unfavorable interactions between children’s characteristics and the demands and expectations of their environments can lead to difficulties in social-emotional adjustment (Carey, 1999; Chess & Thomas, 1999; Thomas & Chess, 1977). Because group norms outline expectations for group members’ behaviors and attitudes (Hogg & Reid, 2006), these norms likely play a role in determining a child’s fit within the peer group.
CHAPTER 2

METHODOLOGICAL AGREEMENT BETWEEN SELF-REPORTED FRIENDSHIP GROUPS AND CLIQUES

1 Lutz, M. E. To be submitted to Social Development.
Abstract

In this study, methodological agreement is assessed for two commonly used peer group membership determination methods, the self-reported friendship group (SRFG) and peer-reported cliques derived through Social Cognitive Maps (clique). A second question addressed whether children’s conceptions of their friendship group characteristics aligned more closely with the characteristics of the SRFG or the clique. According to data from 454 third, fourth, and fifth grade students, SRFGs and cliques share moderate agreement (κ=.43), with approximately 65% of SRFG members belonging to a child’s clique and 45% of clique members belonging to a child’s SRFG. Examination of nominations indicated that a substantial percentage of children’s SRFG and clique nominations were for students in classrooms outside of the nominator’s homeroom. Furthermore, data indicated that a larger percentage of children did not have a reciprocated friendship within their cliques compared to SRFG. Follow-up hierarchical regression analyses indicated that children’s perceptions of their friendship group are influenced by both the SRFG and clique. Taken together, results suggest that the SRFG and Clique may provide distinct yet, perhaps, complementary information when used in combination.
Introduction

Researchers and practitioners alike have become increasingly aware of the critical role that peer relations play in the development of social-emotional adjustment during the middle childhood years. As more researchers turn their attention to this important topic, the construct of peer relationships has emerged as multidimensional in nature. Studies indicate that the formation and maintenance of reciprocated friendships over time, the quality of those friendships, social acceptance within the broad peer network, and characteristics of peer groups to which a child belongs all relate to children’s academic, emotional, and social well-being (Cassidy & Asher, 1992; Kwon & Lease, 2007, 2009; Molloy, Gest, & Rulison, 2010; Parker & Asher, 1993; Parker & Seal, 1996; Pedersen, Vitaro, Barker, & Borge, 2007). The impact of childhood social experiences extends well beyond the elementary years and is predictive of adjustment into adolescence and adulthood (Bagwell et al., 1998; Pedersen et al., 2007).

The study of children’s peer groups, sometimes referred to as friendship groups or cliques, can be particularly challenging to researchers, as the determination of group membership varies according to informant (Cairns, Leung, Buchanan, & Cairns, 1995; Gest, Davidson, Rulison, Moody, & Welsh, 2007; Leung, 1996; Pijl, Koster, Hannink, & Stratingh, 2011; Rodkin & Ahn, 2009). When identifying peer group membership, many researchers rely on collective peer nominations or self-report. Although both sources yield meaningful and relatively similar information, studies indicate that the group assigned to a child by peers is not necessarily the same group of children with whom the child self-identifies (Gest et al., 2007; Leung, 1996; Rodkin & Ahn, 2009). Although researchers often consider peers to be a more objective source of information, the importance of the subjective experience that accompanies peer relations cannot be ignored (Kindermann, 2007). This is an important issue to consider as research
indicates that there are differences in the predictive utility of groups identified through peer- and self-report. For instance, Juvonen, Nishina, and Graham (2001) found peer reports to be more strongly related to interpersonal (e.g., peer acceptance) adjustment, whereas self-reports were more strongly tied to indicators of intrapersonal adjustment (i.e., internalizing distress).

The primary purpose of the current study is to investigate the agreement between two methods commonly used for identifying peer group membership: self-reported friendship groups (SRFG) and multi-informant peer-reported cliques (clique). A secondary purpose of this study is to examine which group, the SRFG or clique, aligns more closely to children’s cognitive representations of their friend group. That is, when children think about the characteristics of their friend group, are their conceptualizations influenced more by members of the SRFG or clique? At first blush, the answer to this question may seem glaringly obvious—children’s conceptions of the collective characteristics of their peer group should align more closely with the group of children that they personally nominated as group-mates (i.e., the SRFG). However, there are some data to suggest that when providing self-reports, children tend to project a more favorable view of their social circles than reality would suggest (Leung, 1996). Moreover, when making self-reports, children may omit group members whom they consider to be affiliates rather than close friends. Given the apparent limits of self-reports, and a substantial body of research indicating that children are influenced by many different facets of peer relations, including peer relations grounded in friendship-based and affiliation-based ties (Kwon & Lease, 2007, 2009; Molloy, Gest, & Rulison, 2010), it is reasonable to hypothesize that children’s cognitive representations align with both the SRFG and clique.
Friendships and Cliques

Children’s peer relations occur on several different planes of experience, including both friendships and cliques. Friendships, characterized by strong affective ties, closeness, and intimacy, occur within the context of a voluntary, reciprocated, dyadic bond (Newcomb & Bagwell, 1995; Rubin et al., 2006). Studies have highlighted the importance of maintaining at least one reciprocated friendship, as high quality dyadic friendships appear to mitigate the negative impact of poor acceptance and even victimization within the broader peer group (Hodges, Boivin, Vitaro, & Bukowski, 1999; Nangle, Erdley, Newman, Mason, & Carpenter, 2003; Parker & Asher, 1993; Pellegrini, Bartini, & Brooks, 1999; Pellegrini & Long, 2002; Waldrip, Malcolm, & Jensen-Campbell, 2008).

In contrast to the intimate and mutual nature of friendships, cliques are voluntary, interaction-based groups that are typically comprised of three to nine same-gendered children (Brown & Dietz, 2009; Rubin et al., 2006). Although reciprocated friendship ties are often present among clique members, many ties are affiliative (i.e., children that “hang around together”) in nature (Cairns, Perrin, & Cairns, 1985; Gest, Davidson, Rulison, Moody, & Welsh, 2007). According to Rubin and colleagues (Rubin et al., 2006), cliques possess four main properties: strength of interpersonal ties (defined by perceived unity and/or structural density; Kwon & Lease, 2009; Scott, 1988); social hierarchy; homogeneity in gender, race, attitudes, and behaviors; and shared norms. Most children are members of a clique by 4th grade (Bagwell, Coie, Terry, & Lochman, 2000; Kindermann, 1993), and most peer interactions occur within the context of those cliques (Gest et al., 2003; Rubin et al., 2006). Perhaps the most well-known function of cliques during childhood and adolescence is the socialization of normative behavior. This role makes the study of cliques appealing to researchers who aim to understand the social
mechanisms that underlie the development of deviant behaviors such as smoking, alcohol use, and aggression (Lacourse, Nagin, Tremblay, Vitaro, & Claes, 2003; Snyder, Horsch, & Childs, 1997; Urberg, Değirmencioğlu, & Pilgrim, 1997). However, cliques also can serve as the social context in which more adaptive behaviors are shaped, such as academic engagement and achievement (Kindermann, 1993; 2007; Ryan, 2001).

As researchers have started focusing on the impact of peer relations on children’s well-being, a variety of measurement methods have emerged. Variation in measurement methods can occur both within the data collection and data analysis phases. Data collection procedures vary according to several dimensions, including the: (a) type of social tie examined (friendship versus affiliation-based tie), (b) reciprocity of the tie (exclusive—reciprocity required versus inclusive—reciprocity not required), (c) level of analysis (dyad versus group), (d) reporter (self versus peer), (e) reference group selected (classroom, grade, school, or unlimited), and (f) specific details of the nomination procedures (e.g., number of nominations permitted, use of a nomination roster) (Cairns, Leung, Buchanan, & Cairns, 1995; Gest, Moody, & Rulison, 2005). Data analysis procedures can vary according to several dimensions as well. For instance, when analyzing data, researchers must determine a) whether to aggregate reports across raters and b) which analysis to use to determine clique membership (e.g., Social Cognitive Maps (SCM), clustering, principal components analysis), and c) whether or not to permit membership in multiple cliques.

A “gold standard” for the assessment of children’s peer groups has yet to be established. Therefore, when selecting specific methodological parameters, researchers must carefully consider the value of each technique within the context of their specific research question and the ecology of the peer group under study. Each measurement method has a unique set of benefits
and drawbacks that systematically alters the composition of the peer groups derived. For instance, children’s self-reported peer groups are influenced by motives for self-enhancement. Specifically, children tend to selectively leave out group members who possess unfavorable characteristics, such as poor academic ability, aggressive behaviors, and low popularity (Leung, 1996). A considerable drawback to multi-informant peer-reports is that this method may fail to assign clique membership to some students who have meaningful reciprocated friendships in the broader peer group (Kindermann, 2007). Despite this shortfall, some data suggest that aggregated multi-informant peer-reports are better for more accurately identifying less-popular, aggressive students’ positions within the peer network (Rodkin & Ahn, 2008). In fact, children without reciprocated friends very often are assigned to cliques using peer-reports (Kindermann, 2007). A benefit to inclusive (i.e., non-aggregated, one-way) self-reports is that they do not assume that friendship experiences and “socialization contexts are the same for each member of a group” (Kindermann, 2007, p. 1188). Rather, this method recognizes that each child has a unique group of friends with whom they interact, and captures the subjective aspects of social experiences.

Another important methodological issue to consider when collecting peer relations data is the composition of the reference group. The reference group, as defined by Bukowski, Cillessen, & Valasquez (2011), is the sample of individuals within which cliques are identified. The reference group includes both the nominators and the subset of students from which the nominator can make nominations. Most research in American schools employs classroom-based nominations for elementary-aged participants and grade-based nominations for middle and high school students (Bukowski, Cillessen, & Velasquez, 2011; Gest, Moody, & Rulison, 2005; Kindermann, 2007). School-wide and unlimited reference groups are less common, but have
been used on occasion (Cairns, Leung, Buchanan, & Cairns, 1995; Kiesner, Poulin, & Nicotra, 2003). Some research with elementary aged students has found the majority of friendship nominations to come from within children’s classrooms, even when school-based or unlimited nominations were permitted (Gest et al., 2003; Parker & Asher, 1993). However, when given the opportunity, middle school children nominate others from outside their immediate classroom as friends and affiliates (Kiesner, Poulin, & Nicotra, 2003).

The selection of the reference group should largely depend on the ecology of the setting in which data collection will take place. In schools, for example, one must consider the amount of cross-classroom and cross-grade interaction that occurs. Student mobility and stability should also be considered. Students are likely to have more cross-classroom relational ties in schools with low rates of student mobility, as many children have attended school with the same grade-mates for a long period of time. When choosing the appropriate reference group to study, researchers must balance the benefit of capturing the entirety of a child’s peer group against the drawbacks to employing an excessively large nomination pool. Placing constraints upon the reference group makes it easier for researchers to obtain data from a large majority of the reference group. Further, a larger reference group may reduce the magnitude of agreement among various methods (Molloy et al., 2010).

In the current study, we chose to use grade-based rather than classroom-based nominations. Discussions with school principals indicated that the students in our sample had frequent contact with students in other classrooms throughout the day. Students interacted with peers across the grade level during lunch, recess, and specials (i.e., music, art, P.E.). Additionally, students in the 4th and 5th grades were ability grouped for instruction in core academic areas and changed classes throughout the day. Student stability was also relatively high
for the elementary schools in the current sample. In this context, it is more likely that students maintain friendships with other students in their grade cohort across academic years compared to schools with high rates of student-turnover.

Studies that assess group membership in multiple ways generally come to the same conclusion—measurement methods tend to be in moderate to good agreement with one another (Cairns et al., 1995; Gest et al., 2003, 2005; Rodkin & Ahn, 2009). However, the overlap among methods is never perfect, which indicates that for some children, group membership might be strictly contingent upon methodological decisions. Of course, measurement error can never be avoided altogether, but it is important for researchers to understand the degree to which measurement error might be systematic in their studies. In peer relations research, it is difficult to compare patterns of method agreement across studies, however, because estimators of similarity vary considerably across studies. These methods, including percent agreement, kappa coefficients, and Gower’s coefficients, cannot be compared directly.

According to kappa estimates, agreement between methods tends to be in the moderate range among samples of elementary-aged children (i.e., 0.48 to 0.64; Rodkin & Ahn, 2009). When relying on percent agreement (e.g., number of friendship group members also in clique/number of children in clique) method agreement appears higher, as this method does not correct for chance agreement. For example, Cairns, Leung, and Cairns (1995) found that between 57% and 82% of fourth and seventh grade children’s self-reported friends were also members of their peer-reported clique. Similarly, Leung (1996) reported that that 77% of fourth and seventh grade children’s self-reported clique-mates were also members of their peer-reported clique, and 61% of children’s clique-mates were members of child’s self-reported clique. Finally, in a study of fourth grade students, Pijl, Koster, Hannink, & Stratingh (2011) found agreement between
reciprocated friendship groups and peer-reported cliques to be high according to Gower’s coefficient (0.74).

Although agreement among methods tends to be within an acceptable range for many researchers, some research suggests that some methods systematically misrepresent the social reality for certain groups of students. For instance, Rodkin and Ahn (2008) found method agreement to vary according to children’s social status and behavior characteristics. In this study, authors compared agreement among self-reported friendship groups (aggregated), self-reported affiliative groups (aggregated), and multi-informant peer-nominated affiliative groups. Results indicated that agreement among methods was highest for children nominated by peers and teachers as perceived popular (κ = .70 - .90) and prosocial (κ = .66 - .84), whereas agreement among methods was lowest for children who were identified as unpopular (κ = .36 - .62) and aggressive (κ = .32 - .63). Follow up analyses of centrality (i.e., number of peer-nominations received) indicated that multi-informant peer-nomination techniques were most effective in representing unpopular and aggressive children within the social network.

The current study aims to build upon previous research by examining the agreement between inclusive self-reported friendship groups (SRFG) and multi-informant peer-reported cliques identified through Social Cognitive Mapping (SCM). SCM, developed by Cairns and colleagues (Cairns et al., 1985), is a method for collecting and analyzing peer network data. According to the SCM procedure, all participating children in the peer network are asked to list groups of students who “hang around together a lot.” Students list as many groups as they can, and then peer reports are aggregated to derive discrete cliques based on the number of times each pair of children was nominated as belonging to the same clique. In this way, the SCM procedure reflects the peer group’s collective schema of the clique structure in their class, grade, or school.
A secondary goal of this study is to examine the relative contributions of the SRFG and the clique to children’s cognitive representations of their group of friends. Previous studies indicate that children’s self-reports of friendships are biased toward self-enhancement (Leung, 1996). Yet, it is also reasonable to assume that when students report the members of their friend group, they may omit members that they consider to be affiliates rather than close friends. However, the student may still look to these affiliates for information regarding normative behaviors. Consequently, despite these biases and omissions in self-nominations, it is possible that when children think about a characteristic of their friendship group (e.g., group norms, social status), they reference both the children that belong to their SRFG and those children who belong to their clique.

To explore this question, we examined whether children’s self-reports of their friendship group’s characteristics matched the characteristics of their SRFG or clique more closely. In other words, when children are asked to evaluate characteristics of their friendship group, which group do they have in mind, the SRFG, the clique, or both? With affiliates, children’s knowledge of group characteristics might be limited by what can be directly observed or learned through gossip. In contrast, within the intimate bond of friendship, children have the benefit of sharing intimate, personal conversations, and can, therefore, develop a better understanding of characteristics that are less observable to the broader peer group (see Newcomb & Bagwell, 1995 for review). Therefore, we hypothesize that group evaluations will be more strongly related to clique characteristics than SRFG characteristics for behaviors that are overt and more highly susceptible to influence, such as trends. We expect group evaluations to be more strongly related to SRFG characteristics than clique characteristics for behaviors that are more private in nature, such as academic skills and athletic interest.
Methods

Participation for the current study was solicited from third, fourth, and fifth grade students and teachers at four rural elementary schools in the southeastern United States. Given the nature of the study, high grade-wide participation rates were essential; therefore, students were only included in the study if parental informed consent was obtained for at least 70% of the grade level (Crick & Ladd, 1989; Wargo, Aikins, & Cillessen, 2007). Participation rates ranged from 74.6% to 85.7% across grade levels. The final sample consisted of 454 students from six third grade (n=102), nine fourth grade (n=154), and eleven fifth grade classrooms (n=198). Fifty-two percent of the participants were female. Regarding race, the current sample reflected the county population relatively well. Seventy-six percent of the students in the sample were White, 13% were Black, and 11% of students reported being from other racial backgrounds. Children ranged in age from 9 to 13 years.

The four elementary schools that participated in this study were located within a rural county of the southeast with a population of 27,837. The average per capita income was $26,293 (2004). Mobility rate of county residents during the time of data collection was 9.9 %, according to data from the American Community Survey (ACS; U.S. Census Bureau). According to Report Card data from the year of data collection, there were approximately 995 third, fourth, and fifth grade students enrolled in the district. Approximately 50% of students were on Free or Reduced Lunch. Fifty-four percent of third through fifth grade students were absent 5 days or fewer during the school year, and 6.23% of students were absent more than 15 days. Stability data were available for one school in our sample and were reported by a school official as being
representative of other schools in our sample. In this school, 84.6% of students maintained a stable school enrollment from the beginning to the end of the school year.

**Procedures**

Data for the present study were collected during two, one-hour sessions as part of a larger study on peer relations. All social network data were collected on the second day. To facilitate ease of responding, all questions were read to participants by one member of the research team while a second member of the research team circulated around the room to assist students. For all nomination procedures, students were provided with 10 spaces to write their nominations, but were informed that they did not need to fill every line. Students also were permitted to include more than ten nominations if they wished. In essence, this was an unlimited nomination procedure.

**Social Network Measures**

As stated previously, the students in our sample had frequent opportunities for cross-class interaction and the high rates of enrollment stability; therefore, all peer nominations in the current study were grade-based. To help students make their nominations, grade-level rosters were provided. Only participating students’ names were on the nominating roster.

**Self-Reported Friendship Group (SRFG).** For this measure, students were asked to “list a group of friends with whom you spend a lot of time and do a lot of things together.” These nominations were used to create inclusive self-reported friendship groups (SRFG). Because nominations were not required to be reciprocated, the SRFG was unique to each child. Although this method is loosely based upon Cairns, Perrin, and Cairns’ (1985) Social Cognitive Mapping (SCM) technique, it deviated from SCM methodology in several ways. First, a nomination roster was provided to students to assist in their friendship choices. Second, in contrast to traditional
SCM methods, the report of other friendship groups in the peer network did not occur immediately following the self-reported friendship group (SRFG). Rather, there were several non-related questions following the SRFG measure.

**Cliques.** To assess the naturally existing multi-informant affiliative groups, or *cliques*, children were asked: “*Think about the kids in your grade. Some hang out together, just doing a lot together. Please list the groups of kids who play, work, or hang out together a lot. The way you think about it two people can even be in a group together.*” Students were given space to nominate up to eight groups, but were told that they could nominate fewer or more than eight groups. Social Cognitive Mapping (SCM; Cairns et al., 1985) was used to identify the discrete cliques that emerged from this peer nomination data.

In SCM, peer nomination data is used to create a co-occurrence matrix, in which each participant occupies both a row and column. Each cell in the matrix contains the number of times each pair of participants was nominated by peers as belonging to the *same group*. The number of times a student was nominated as belonging to any group is represented on the diagonal. The co-occurrence matrix is then submitted to an SCM analysis program (this study uses SCM 4.0; 1998, Center for Developmental Science of the University of North Carolina at Chapel Hill) that applies an algorithm to the data, forming discrete cliques.

According to Gest, Farmer, Cairns, & Xie (2003), “children are expert observers of the entire social network who share reasonably convergent views on the composition of social clusters in the network (p. 515).” In fact, previous studies have reported acceptable test-retest reliabilities for the SCM procedure, ranging from .74 to .84 (Cairns, Leung, Buchanan, & Cairns, 1995), and evidence of high validity. For instance, observational data of student interaction patterns maps onto student reported data from the Social Cognitive Maps procedure relatively
well (Cairns et al., 1985; Gest et al., 2003): Gest and colleagues (Gest et al., 2003) observed that children interacted with clique-mates four times more often than other same-gender classmates.

**Behavior Characteristics of the SRFG and Clique**

**Perceived Group Behavior Characteristics.** To measure children’s perceptions of their friendship group’s characteristics, students were asked to report how many members of their friendship group engaged in various behaviors. For example, to assess friendship group members’ academic behavior, students were asked, “How many of the kids in your group are smart and make good grades?” Response options for each question were presented as a four-point Likert scale (none, some, most, all). Children rated their group’s characteristics across five behavioral domains (academics, trends, athletics, misbehavior, and girlfriend/boyfriend interest), with three or four questions assessing each domain. Estimates of internal consistency were in the acceptable range for each of the behavioral domains, with alpha values ranging from .706 to .881. Given that items within each domain appeared to be measuring a similar construct, items were averaged within domain to provide a mean score. Means, standard deviations, skew, and kurtosis for each domain are presented in Table 1.1.
<table>
<thead>
<tr>
<th>Scale Domain</th>
<th>Mean (SD)</th>
<th>Skew</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement</td>
<td>2.96 (.59)</td>
<td>-0.45</td>
<td>0.17</td>
</tr>
<tr>
<td>Sports</td>
<td>2.94 (.64)</td>
<td>-0.35</td>
<td>-0.26</td>
</tr>
<tr>
<td>Trends</td>
<td>2.75 (.89)</td>
<td>-0.29</td>
<td>-0.91</td>
</tr>
<tr>
<td>Misbehavior</td>
<td>1.69 (.70)</td>
<td>1.16</td>
<td>0.98</td>
</tr>
<tr>
<td>BFGF</td>
<td>2.58 (.85)</td>
<td>-0.042</td>
<td>-0.87</td>
</tr>
</tbody>
</table>

*Note. BFGF = Boyfriend/Girlfriend Relations*

**Composite SRFG and Composite Clique Behavior Characteristics.** Each participant provided a self-report of personal characteristics across the following five behavioral domains: academics, trends, athletics, misbehavior, and girlfriend/boyfriend interest. For instance, to assess children’s self-reported academic self-efficacy, participants were asked, “If you were to list all of the students in your grade from best to worst at schoolwork, where would you put yourself?” Response options were presented as a five-point Likert-style scale (one of the worst; in the bottom half, but not the worst; in the middle; in the top half, but not the best; one of the best). Individual self-reports across each of the five behavioral domains were averaged among members of the SRFGs (i.e., *Composite SRFG Behavior Characteristics*) and averaged among members of the cliques (i.e., *Composite Clique Behavior Characteristics*) to provide group means of self-reported behaviors. The *Composite SRFG Behavior Characteristics* and *Composite Clique Behavior Characteristics* scores were used as estimates of group behaviors and were submitted as predictor variables within the hierarchical multiple regression analysis. Means,
standard deviations, kurtosis, and skew are reported for each behavioral domain and for the Composite SRFG and Composite Clique Behavior Characteristics in Table 1.2.

Table 1.2

<table>
<thead>
<tr>
<th>Scale Domain</th>
<th>Composite SRFG Behavior Characteristics</th>
<th>Composite Clique Behavior Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Skew</td>
</tr>
<tr>
<td>Academics</td>
<td>3.98 (.42)</td>
<td>-0.53</td>
</tr>
<tr>
<td>Sports</td>
<td>4.01 (.56)</td>
<td>-0.67</td>
</tr>
<tr>
<td>Trends</td>
<td>3.81 (.54)</td>
<td>-0.78</td>
</tr>
<tr>
<td>Misbehavior</td>
<td>2.11 (.58)</td>
<td>0.59</td>
</tr>
<tr>
<td>BFGF</td>
<td>3.48 (.74)</td>
<td>-0.47</td>
</tr>
</tbody>
</table>

*Note. BFGF = Boyfriend/Girlfriend Relations*
Results

Group Topography

To examine the descriptive characteristics of SRFGs and cliques, we first explored whether group size varied as a function of gender, grade level, or the size of the reference group (e.g., grade unit). Next, we explored the makeup of the SRFGs and cliques in terms of homeroom classroom membership. We hypothesized that many of the students’ SRFG and clique nominations would come from outside of the classroom given the degree of cross-class interaction that students in our sample experienced throughout the school day. Finally, we examined the reciprocity of friendship ties among SRFG members and clique members.

Self-Reported Friendship Groups (SRFGs). On average, SRFGs had 7.60 members. Group size was independent of grade unit size, according to the results of a Pearson correlation \( r = -.044, p = .347 \). To determine if the size of the SRFG varied according to grade level, an Analysis of Variance (ANOVA) was conducted followed by post-hoc pairwise comparisons with Bonferroni corrections. According to results of the omnibus F-test, there was a significant effect of grade level on the size of the SRFG \( F(2, 451) = 10.49, p < .001 \). Pairwise comparisons indicated that fifth grade students had significantly larger friendship groups than third (\( \bar{x} = 8.24 \) versus 7.17, \( p = .003 \)) and fourth grade students (\( \bar{x} = 8.24 \) versus 7.06, \( p < .001 \)). There was no difference in friendship group size between third and fourth grade students (\( p = 1.0 \)). One-way ANOVAs also were used to determine if group size varied significantly according to gender. Results indicated that females had significantly larger SRFG than males \( F(1, 452) = 8.698, p = .003 \). On average, males nominated 7.22 members as belonging to their SRFG, whereas females nominated 7.95.
Consistent with our hypothesis, SRFG members were well distributed among classrooms at all grade levels, as can be seen in Table 2. In fact, approximately 40% to 57% of SRFG nominations were for students in classrooms outside of the nominator’s homeroom.

Lastly, we explored the percentage of SRFG nominations that were reciprocated in each grade (see Table 1.4). On average, 51.88% (SD = 27.36%) of third, 59.06% (SD = 27.19%) of fourth, and 56.75% (SD = 24.14%) of fifth grade students’ SRFG nominations were reciprocated. Most students had at least one reciprocated friendship in their SRFG: Only 5.9% of third, 5.2% of fourth, and 2.0% of 5th grade students did not have any reciprocated friendships in their SRFG.

Cliqués. The SCM procedure yielded 62 discrete cliques across the entire data set. Of these cliques, cliques ranged in size from 2 to 17 members. On average, cliques had 8.81 members. Three cliques had just two members. There was an average of 6.5 cliques in the 3rd grade units, 7 cliques in the 4th grade units, and 6 cliques in the 5th grade units. According to the results from a paired samples t-test (see Table 1.3), cliques were significantly larger than SRFGs for 4th and 5th grade students, $t(139) = 3.51, p = .001$ and $t(182) = 4.091, p < .001$, respectively. In contrast to the SRFG, clique size was significantly related to the size of the grade unit, according to the results from a Pearson correlation ($r = .171, p < .001$). In other words, as the size of the grade unit increased, the size of the clique also increased significantly; however, the effect of this association was small in magnitude. To determine whether the size of the clique varied according to grade level, an Analysis of Covariance (ANCOVA) was conducted including the size of the grade unit as a covariate. Controlling for the size of the grade unit, there were significant differences in clique size among grades [$F(2, 451) = 9.42, p < .001$]. Post hoc pairwise comparisons of the estimated marginal means indicated that fifth grade students had
significantly larger clique sizes than third and fourth grade students at the .05 level of significance. There was no difference in clique size between third and fourth grade students. Results from a oneway ANOVA indicated that there was no difference in clique size between male and female students \(F (1, 419) = 1.06, p = .305\).

Table 1.3

*Descriptive Statistics and Paired Samples T-test of Mean Group Size*

<table>
<thead>
<tr>
<th>Grade</th>
<th>n</th>
<th>SRFG</th>
<th>Clique</th>
<th>t-score&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>102</td>
<td>7.17 (2.70)</td>
<td>7.92 (3.78)</td>
<td>1.74</td>
</tr>
<tr>
<td>4</td>
<td>154</td>
<td>7.06 (2.77)</td>
<td>8.34 (3.75)</td>
<td>3.51*</td>
</tr>
<tr>
<td>5</td>
<td>198</td>
<td>8.24 (2.47)</td>
<td>9.64 (3.88)</td>
<td>4.09*</td>
</tr>
<tr>
<td>Total</td>
<td>454</td>
<td>7.60 (2.68)</td>
<td>8.81 (3.88)</td>
<td>5.52*</td>
</tr>
</tbody>
</table>

*Note. SRFG = Self-reported Friendship Group*  
<sup>a</sup>Paired Samples t-test  
*<small>p</small><.05

Consistent with our hypothesis, clique membership was not classroom-based in our sample. Only 10% to 35.71% of cliques were homogenous in terms of classroom membership. Across grade levels, the majority of cliques had members from at least two classrooms (see Table 1.4).
Table 1.4

Distribution of Group Members Across the Grade Unit

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percent of cliques with members froma</th>
<th>Percent of SRFG nominations from within classroom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 Class</td>
<td>2 Classes</td>
</tr>
<tr>
<td>3</td>
<td>35.71</td>
<td>28.57</td>
</tr>
<tr>
<td>4</td>
<td>10.00</td>
<td>40.00</td>
</tr>
<tr>
<td>5</td>
<td>22.22</td>
<td>11.11</td>
</tr>
<tr>
<td>Total</td>
<td>24.07</td>
<td>25.93</td>
</tr>
</tbody>
</table>

aExcluding dyads and 2 classroom grade units.

Note. The exclusion above resulted in omitting three cliques that contained only two members and one grade unit that only contained two classrooms. SRFG = Self-reported Friendship Group.

Finally, we explored the percentage of clique members that were also reciprocated friends. On average, 30.57% (SD = 21.17%) of third, 33.81% (SD = 23.54%) of fourth, and 32.97% (SD = 21.13) of fifth grade students’ clique mates were also reciprocated friends. Fourteen point seven percent of third, 16.9% of fourth, and 11.1% of fifth grade students did not have a reciprocated friendship in their clique. Of the seven students who were identified as isolates (i.e., were not assigned to a clique) in the sample, two students had one reciprocated friendship nomination, one student had two reciprocated friendship nominations, and four students did not have any reciprocated friendship nominations.

Method Agreement

To determine the agreement between SRFG and clique methods for assigning children to groups, kappa statistics were used. We followed procedures described in the Rodkin et al. (2008) study to structure our data for the kappa calculation. With our clique data, we created a matrix of
all possible dyads separately for each grade level. A dyad was assigned a score of 1 if both members belonged to the same clique (i.e., group-mates) and a 0 if members belonged to different cliques. For SRFG, grade level nomination matrices of all possible dyads were also created, with nominators along the y-axis and nominees along the x-axis. Dyads were assigned a score of 1 if the nominator chose the nominee as a member of their friendship group (i.e., group-mates) and a 0 if the nominator did not identify the nominee as a group member. A 2 x 2 contingency table (see Figure 1.5) was created and submitted to a Kappa analysis. Then, we calculated odds ratios to quantify the effect of method agreement (Agresti, 2007).

Table 1.5 2x2 Contingency Table Used to Calculate Kappa Statistic.

<table>
<thead>
<tr>
<th>Clique Group-mates</th>
<th>SRFG Group-mates</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>1</td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>0</td>
<td>C</td>
<td>D</td>
</tr>
<tr>
<td>Totals</td>
<td>A+C</td>
<td>B+D</td>
</tr>
</tbody>
</table>

Note. 1 = pair of children in same group. 2 = pair of children not in same group. A = Pairs of children identified as group-mates by SRFG and clique methods. B = Pairs of children identified as group-mates by clique but not by SRFG method. C = Pairs of children identified as group-mates by SRFG but not by clique method. D = Pairs of children not identified group-mates by either SRFG or clique methods.

The agreement between methods was $\kappa = .43$ (95% C.I. = .41-.45) for the total sample. This is moderate agreement according to Landis and Koch (1977). The odds ratio for agreement between methods is 11.74 (95% C.I. = 10.79-12.78). This means that the odds of two students being identified as belonging to the same clique are 11.74 times greater if the students were also identified as belonging to the same SRFG than if the students were not identified as belonging to
the same SRFG. Kappa values and odds ratios for each of the grade units can be found in Table 1.6. Also reported in Table 1.6 are the average percentages of overlap between SRFG and clique membership. For the total sample, 63.67% SRFG members are also members of the nominator’s clique and 44.92% of children in a target child’s clique are also members of that child’s SRFG.

Table 1.6
Agreement between SRFG and Clique

<table>
<thead>
<tr>
<th>Grade</th>
<th>κ</th>
<th>95% CI</th>
<th>Odds Ratio</th>
<th>Odds Ratio 95% CI</th>
<th>% of SRFG members that are also clique-mates</th>
<th>% of Clique that are also SRFG-mates</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>.41</td>
<td>.36-.45</td>
<td>10.69</td>
<td>8.90-12.84</td>
<td>55.71 (27.28)</td>
<td>44.57 (22.98)</td>
</tr>
<tr>
<td>4</td>
<td>.45</td>
<td>.42-.48</td>
<td>14.17</td>
<td>12.18-16.48</td>
<td>63.44 (28.45)</td>
<td>45.02 (25.37)</td>
</tr>
<tr>
<td>5</td>
<td>.43</td>
<td>.40-.45</td>
<td>10.67</td>
<td>9.43-12.07</td>
<td>67.89 (24.42)</td>
<td>45.02 (22.08)</td>
</tr>
<tr>
<td>Total</td>
<td>.43</td>
<td>.41-.45</td>
<td>11.74</td>
<td>10.79-12.78</td>
<td>63.67 (26.80)</td>
<td>44.92 (23.39)</td>
</tr>
</tbody>
</table>

Note. SRFG = Self-reported Friendship Group

Hierarchical Regression Analyses

In our final set of analyses, we aimed to explore which group, SRFG or clique, children referenced when they reported on the characteristics of their “group.” That is, when asked to report on their “group’s” academic skills, do they seem to have their SRFG or clique in mind? To examine this question, we conducted 5 hierarchical regression analyses with Perceived Group Behavior Characteristics serving as the dependent variable. In each analysis, there were four independent variables: gender, grade level, and group size, entered in step one, followed by Composite SRFG and Composite Clique Behavior Characteristics in step two. Independent variables in the model were screened for collinearity; the variance inflation factor (VIF) and
collinearity tolerance estimates were within acceptable ranges. Overall, results of the hierarchical regression analyses, presented in Table 1.7, indicate that children’s evaluations of their groups’ behavioral characteristics sometimes align more closely with the characteristics of their SRFG and sometimes with the characteristics of their cliques, depending on the behavioral characteristic in question.

For trend behavior, the results indicated that Composite SRFG and Composite Clique Behavior Characteristics (trends) predicted an additional 7.6% of the variance in Perceived Group Behavior (trends) beyond the variance already accounted for by the control variables (i.e., gender, grade, group size), $F (2, 400) = 18.86, p < .001$. Standardized beta coefficients indicated that only the Composite Clique Mean for trends was significantly and uniquely related to the outcome variable ($\beta = .28, t (400) = 4.55, p < .001$).

Results indicated that for misbehavior the Composite SRFG and Composite Clique Behavior Characteristics (misbehavior) predicted an additional 15.0% of the variance in Perceived Group Behavior (misbehavior) beyond that already accounted for by the control variables, $F (2, 400) = 37.45, p < .001$. Standardized beta coefficients indicated that both the Composite Clique Mean and Composite SRFG Mean for misbehavior were significantly and uniquely related to the outcome variable ($\beta = .24, t (400) = 3.99, p < .001$ and $\beta = .27, t (400) = 4.52, p < .001$, respectively).

For boyfriend/girlfriend interest, the results indicated that Composite SRFG and Composite Clique Behavior Characteristics (boyfriend/girlfriend) predicted an additional 15.4% of the variance in Perceived Group Behavior (boyfriend/girlfriend) beyond that already accounted for by the control variables, $F (2, 395) = 39.90, p < .001$. Standardized beta coefficients indicated that both the Composite Clique Mean and Composite SRFG Mean for
boyfriend/girlfriend were significantly and uniquely related to the outcome variable ($\beta = .31, t(395) = 5.36, p < .001$ and $\beta = .13, t(395) = 2.27, p = .024$, respectively).

Results indicated that for athletic behavior Composite SRFG and Composite Clique Behavior Characteristics (athletics) predicted an additional 3.7% of the variance in Perceived Group Behavior (athletics) beyond that already accounted for by the control variables, $F(2, 405) = 8.43, p < .001$. Standardized beta coefficients indicated that only the Composite SRFG Mean for athletics was significantly and uniquely related to the outcome variable ($\beta = .18, t(405) = ., p < .002$).

Contrary to our expectations, although the Composite SRFG and Composite Clique Behavior Characteristics (academic) significantly predicted an additional 2% of the variance in Perceived Group Behavior (academics) beyond that already accounted for by the control variables in the model, $F(2, 405) = 5.12, p = .006$, none of the standardized beta coefficients were significant at the $p = .05$ level.
Table 1.7

Hierarchical Multiple Regression Analysis Predicting Perceived Group Behavioral Characteristics

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Academics</th>
<th>Trends</th>
<th>Athletics</th>
<th>Misbehavior</th>
<th>Boyfriend/Girlfriend</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
<td>$r_{ab.c}$</td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Step 1</td>
<td>.02</td>
<td>.12**</td>
<td>.08**</td>
<td>.05*</td>
<td>.09**</td>
</tr>
<tr>
<td>Control vars$^a$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.02*</td>
<td>.08**</td>
<td>.04**</td>
<td>.15**</td>
<td>.15**</td>
</tr>
<tr>
<td>Clique mean</td>
<td>.08</td>
<td>.07</td>
<td>.29**</td>
<td>.04</td>
<td>.03</td>
</tr>
<tr>
<td>SRFG mean</td>
<td>.11</td>
<td>.09</td>
<td>.04</td>
<td>.18*</td>
<td>.15**</td>
</tr>
</tbody>
</table>

Note. $r_{ab.c} =$ partial correlation, partialing out control variables and either the Clique mean or the SRFG mean

$^a$gender, grade, group size

*p < .05  **p < .01
Discussion

The primary aim of the current study was to examine the agreement between children’s self-reported friendship groups (SRFG) and their SCM derived, affiliation-based cliques. Although prior research suggests that various methods used to assess the structure of children’s peer groups overlap with one another to varying degrees (Cairns et al., 1995; Gest et al., 2003, 2005; Rodkin & Ahn, 2009), there is also evidence of distinction among methods. Given the important impact of subjective experiences on social-emotional adjustment, it is essential to know how well SCM-based cliques align with children’s subjective self-reports.

A secondary purpose of this study was to determine who students have in mind when they are asked to evaluate collective characteristics of their group of friends (i.e., SRFG or clique). Although children’s nominations may be influenced by motives for self-enhancement (Leung, 1996), it is possible that these motives are less pronounced when children are asked to evaluate group-level characteristics.

The results of this study highlight three major points. First, although peer networks are often assessed at the classroom level for elementary aged students, our results suggest that this method may not be appropriate for schools that provide opportunities for frequent cross-class interaction and high stability in student enrollment from year to year. In our sample, the majority of cliques had members from more than one classroom, and approximately half of student’s SRFG nominations were for students in another classroom. It appears that, in our sample, we would not have captured the reality of the social network if we constrained nominations to the classroom. As was the case for the schools in our sample, some elementary schools require children to change classes for their academic instruction throughout the day. When this occurs, the student composition of each class often changes, particularly if the school utilizes instruction-
based ability grouping. Furthermore, in most elementary schools, children have cross-class interaction during lunch, recess, and sometimes during specials (e.g., P.E., music, art). These activities often provide the opportunity for socialization and play, which encourages cross-class friendships to form and to be maintained across academic years. In our sample, many children attended the same school year-to-year, providing opportunities to form lasting friendships with children across the grade cohort.

Second, the agreement between the SRFG and clique methods in our study was moderate in magnitude. Using a kappa statistic to estimate agreement, we found the degree of overlap between methods to be slightly lower than, but mostly consistent with, findings reported by Rodkin and Ahn (κ = .48 to .64; 2009). This difference is not unexpected, however, as there were several differences between studies. For instance, we utilized unilateral inclusive self-reports of friends, whereas Rodkin and Ahn aggregated self-reports across raters to create groups using hierarchical clustering and principal components analysis. Aggregated self-reports are likely to more closely resemble SCM derived cliques as both methods draw upon information from multiple informants. Also, Rodkin and Ahn emphasized two types of relational ties in their self-reports, best friendships and affiliates, whereas our self-reports emphasized children’s group of friends. Written in this way, a group of friends likely falls somewhere between best friendships and affiliative groups in terms of strength and intimacy of relational ties.

To explore the overlap in methods further, we found that 63.67% of children’s SRFG members were also members of that child’s clique, and 44.92% of children’s clique-mates were also members of that child’s SRFG. The percent overlap between methods in our study was slightly lower than those reported by Leung (77% and 61%, respectively;1996). As with the Rodkin & Ahn (2009) study, this difference likely occurred because Leung’s study emphasized
self-reported affiliative groups rather than self-reported friend groups as is the case in our study. Leung’s method is similar to the SCM clique approach in the affiliative nature of group ties, which likely serves to increase agreement.

Our findings, however, help confirm the difference between methods in strength and intimacy of relational ties measured, as we found the SRFG to be a tighter-knit group of children with approximately one-half of nominations being reciprocated. In contrast, only one-third of children’s clique-mates were reciprocated friends. This latter finding is consistent with previous research (Molloy et al., 2010). Taken together, although many of children’s SRFG members were also identified as clique-mates through SCM, meaningful friendships may be overlooked when using clique-based approaches. In fact, in our sample, a greater percentage of children did not have a reciprocated friendship within their clique compared to reciprocated friendships within the SRFG.

Finally, the results of this study indicate that both the SRFG and the clique make unique contributions to children’s cognitive representations of their peer groups. Although few studies have compared the relative impact of each level of peer relations (e.g., friend, group, crowd) on the socialization of behavior, those that have indicate that each level contributes independently (Hussong, 2002; Urberg et al., 1997). Our data revealed that when asked to evaluate how trendy or interested in romantic relationships their group of friends is, children’s ratings reflected the characteristics of their clique-mates more closely than the characteristics of their SRFG-mates. In contrast, when asked to evaluate how involved in sports their group of friends is, children’s ratings aligned more closely with the characteristics of their SRFG rather than clique. Children’s self-reports were equally influenced by the SRFG and clique for characteristics of misbehavior, and not significantly related to either group for academic characteristics.
Notably, it appears that children reference the characteristics of their cliques when evaluating behaviors that tend to be important for popularity in the broader peer group, such as trend conformity and interest in romantic relationships. When it comes to trends, older research indicates that adolescents who are aware of and conform to clothing norms are more likely to be accepted by the peer group (Smucker & Creekmore, 1972). In fact, compared to parents and television, peers have the most influence in socializing adolescents’ interest in brand-name clothing (Lachance, Beaudoin, & Robitaille, 2003). In contrast to the intimate, affection-based ties of friendships, cliques tend to be broader, affiliation-based groups with a hierarchical structure. Therefore, children may be more concerned about acceptance within their clique and may look to the clique for information regarding how to dress.

Interest in romantic relationships begins early on in grade school. According to one study, approximately 60% of third graders and 50% of fifth grade students report having a boyfriend or girlfriend (Carlson & Rose, 2007). In a qualitative study of Latina and African American females’ experiences with romantic relationships, girls reported that they first became romantically interested in boys between the ages of 7 and 9, and first started having boyfriends between the ages of 9 and 11 (O’Sullivan & Meyer-Bahlburg, 2003). This early interest in romantic relationships appeared to be socialized by peers. Children reported that having a boyfriend helped to increase popularity among peers (O’Sullivan & Meyer-Bahlburg, 2003). For older students, romantic relationships are a common topic of conversation (Eder, 1985) and are associated with clear normative values and behavior (Simon, Eder, & Evans, 1992). This body of research seems to suggest that being in tune with the peer group’s beliefs and values about romantic relationships might be advantageous for children in order to gain social status and fit in
among their peers. Although children likely talk about romantic relationships with their close friends, they may keep a closer eye on the behavior of their clique-mates.

In regard to athletics, our findings indicated that children may have more knowledge of their SRFG members’ sports-related behaviors compared to clique members. It is possible that children spend more time talking about shared interests, such as sports, with members of their SRFG than clique-mates. Furthermore, children may be less aware of the sports participation of more peripheral clique members and clique members that are not close friends, as sporting activities usually take place after school during the elementary years.

For the domain of misbehavior, children’s conceptions of their friendship group’s characteristics were independently related to characteristics of the SRFG and clique. This suggests that both groups provide important sources of information for children when it comes to rule-breaking behavior. Consistent with this finding, research indicates that the close friends (Berndt & Keefe, 1995; Brendgen et al., 2008; Dishion, Spracklen, Andrews, & Patterson, 1996; Kandel, 1978) and cliques (Espelage, Holt, & Henkel, 2003) are important agents of socialization for aggression, disruptive behaviors, and deviancy among children and adolescents.

Contrary to expectations, however, children’s evaluations of their group’s academic achievement did not align with the behaviors of the SRFG or clique. We expected children to have relatively accurate cognitive representations of the academic abilities of their SRFG members, as close friendships are important sources of influence for academic-related beliefs, motivations, and behaviors (Altermatt & Pomerantz, 2003, 2005; Berndt & Keefe, 1995; Epstein, 1983; Kandel, 1978). Other findings, however, suggest that children are more strongly influenced by parents and teachers when it comes to academic attitudes, behaviors, and motivations (Chen, 2005; Wentzel, 1998).
Conclusion, Limitations, and Future Directions

The findings of this study continue to highlight the impact that variation in social network methodologies have on the subsequent identification of peer groups. Moreover, consistent with prior research (Hussong, 2002; Parker & Asher, 1993; Urberg et al., 1997), our findings underscore the importance of assessing various dimensions of children’s peer relations in combination.

A limitation to the current study is the reliance on self-reports of behavioral characteristics. Children’s self-reports have the tendency to be influenced by social-acceptability bias. Additionally, when reporting their behavioral characteristics, children tend to over-report similarity with the group (Xie, Mahoney, & Cairns, 1999). Further, our method for obtaining SRFG deviated from the SCM method considerably. First, our nomination procedure’s directions emphasized friendships rather than affiliates (e.g., list a group of friends with whom you spend a lot of time and do a lot of things together). Second, the SRFG nomination occurred separate from the clique nomination procedure. Although beyond the scope of this study, future research should evaluate how these method variations compare to the self-reported cliques based on the SCM method. Additionally, future research is needed to determine the degree to which children agree with the composition of the clique they are assigned to through SCM.
CHAPTER 3
SOCIAL IDENTIFICATION WITH THE PEER GROUP: MODERATING ROLE OF GROUP NORMS

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2 Lutz, M. E. To be submitted to The Journal of Individual Differences.
Abstract

According to the goodness-of-fit theory, children’s personal characteristics become maladaptive only when mismatched with the demands and expectations of the environment. In this study, the authors examined the goodness-of-fit between elementary-aged children and their group of friends. Specifically, in a sample of 455 third, fourth, and fifth grade children, hierarchical regression analyses were used to examine whether group norms significantly moderated the relation between children’s personal characteristics (i.e., personality and behavior motivation) and their self-reported feelings of social identity. Group norms were conceptualized and calculated in three ways, including children’s perceived group norms, aggregated behavior motivations of self-reported friendship group (SRFG) members, and aggregated behavior motivations of peer-reported cliques (clique). Consistent with the goodness-of-fit model, results indicated that for some behavioral domains, namely misbehavior, boyfriend/girlfriend relations, and trends (marginally significant), the perceived norms of the group significantly moderated the relationship between children’s self-reported norm motivations and their self-reported feelings of social identification with the group. Authors discuss the importance of these findings within the context of school-based problem-solving models.
Introduction

Many have argued that a sense of belonging and relatedness within the social network is a basic human need (Alderfer, 1972; Baumeister & Leary, 1995; James, 1962; Maslow, 1943). In children, unsatisfactory feelings of belongingness relate to increased internalizing distress (e.g., anxiety, depression, and loneliness) and externalizing behaviors (e.g., aggression and criminality; Baumeister & Leary, 1995; Newman, Lohman, & Newman, 2007). In contrast, positive feelings of belongingness, particularly within the broader school culture, have been related to positive outcomes for students, such as increased academic achievement (see Osterman, 2000 for review).

Social Identity, a construct that encompasses belongingness, reflects “that part of an individual’s self-concept which derives from his knowledge of his membership of a social group (or groups) together with the value and emotional significance attached to that membership” (Tajfel, 1978, p. 63). In essence, a person’s social identification with a group represents their basic thoughts and feelings regarding this group membership. In his original definition, Tajfel emphasized that individuals’ social identities make up an important part of their self-concept (1978). Although Tajfel focused much of his work on adult populations, more recent research indicates that group memberships make up an important part of self-concepts in children as young as five years of age (Bennett & Sani, 2008). In order to uphold a positive view of the self, Social Identity Theory posits that individuals are motivated to maintain positive feelings of social identification with their member groups. This is accomplished, in part, by evaluating member groups (i.e., ingroups) favorably relative to non-member groups (i.e., outgroups; Tajfel & Turner, 1979). Since its introduction three decades ago, Social Identity Theory has been used as a meaningful framework for examining and explaining mechanisms that underlie a variety of
social processes, such as ingroup bias, perceptions of ingroup homogeneity, discrimination, collective action, and conformity to group norms (R. Brown, 2000; Terry & Hogg, 1996).

More recent research with adult populations has identified three dimensions of social identity, *Cognitive Centrality, Ingroup Ties, and Ingroup Affect* (Cameron, 2004; Cameron & Lalonde, 2001). *Cognitive Centrality* refers to the prominence of group membership within an individual’s personal identity and sense of self. *Ingroup Affect* refers to the range of emotions associated with group membership (e.g., joy, regret, satisfaction). Finally, *Ingroup Ties* describes the connectedness, belongingness, and similarity that an individual feels with a group. Ingroup Ties and Ingroup Affect tend to be positively related. In other words, when an individual feels strongly connected to a group, they often experience positive emotions regarding group membership (Cameron, 2004). Cognitive Centrality and Ingroup Affect, on the other hand, tend to be more independent. For example, an individual may have strong positive emotions regarding group membership, but the group may not be a very important part of their self-definitions. Cameron (2004) suggests that children—like adults—are motivated to improve their fit with the peer group if they experience negative social identity across one of the three dimensions. Improved fit may be achieved by trying to modify the self, attempting to change some aspect of the group, or by finding a new group with which they identify more positively.

In contrast to adults, social identity may be best represented as one factor among elementary aged children. Kwon and Lease (2009) modified Cameron’s (2004) social identity measure in order to be used with children in grades three through five. These authors found that Cognitive Centrality could not be measured reliability among the young children in their sample. After dropping items related to Cognitive Centrality, results of a confirmatory analysis indicated no difference in model fit between a two-factor and one-factor model of social identity.
Therefore, these authors concluded that a one factor model of social identity, encompassing items from the Ingroup Affect and Ingroup Ties scales, is most parsimonious and psychometrically meaningful for children in grades three through five. Conceptualized in this way, with an emphasis on belongingness and affect, children’s feelings of social identity are likely a good indicator of their subjective sense of goodness-of-fit with their peer groups. Goodness-of-fit, a concept emanating from the temperament literature (Thomas & Chess, 1977), views child functioning from a person-environment fit perspective, similar to that described by Bronfenbrenner (1977) in his ecological systems model. According to this theory, difficulties in adjustment (e.g., behavioral, interpersonal, intrapersonal) result from “incompatible relationships” between the personal characteristics of the child and the demands and expectations of the environment (Carey, 1998, 1999).

Positive social identity has been related to high self-esteem and positive approaches to personal and relational developmental tasks during adolescence (Tarrant, MacKenzie, & Hewitt, 2006). Additionally, social identity has been found to moderate the relation between group norms and conformity among samples of children (Kwon & Lease, 2009a), adolescents (Kiesner, Cadinu, Poulin, & Bucci, 2002), and adults (Terry, Hogg, & White, 1999). For instance, Kwon and Lease (2009) found that third through fifth grade children demonstrated stronger intentions to conform to group norms when social identification was high. However, group norms had no influence on children’s intentions to conform when social identification was low. Given the concurrent relation between social identification and social-emotional adjustment, it seems prudent to examine the factors that may contribute to the development of positive social identification with the peer group.
Peer Groups

During the middle childhood years, children’s peer interactions become increasingly centered within small groups of peers (Rubin et al., 2006), referred to herein as “peer groups.” As associations with peer groups increase, it becomes important to consider children’s social identities within these new social contexts. Contemporary studies of peer groups have conceptualized and measured these groups of children in a variety of ways (for review, see Kindermann & Gest, 2009). The current study, however, focuses on two types of peer groups, self-reported friendship groups (SRFG) and cliques.

SRFGs and cliques vary along three primary methodological and conceptual dimensions. First, these groups differ in terms of the social ties examined (Kindermann & Gest, 2009). SRFGs focus on friendship-based social ties, whereas cliques are centered on affiliative ties. Second, these groups draw upon different informants. The SRFG relies on self-report, whereas cliques utilize peer-reports. Finally, SRFGs and cliques tend to differ in terms of the number of informants used to help construct the respective peer groups. In this study, SRFGs were created using one informant—the self—although SRFGs can also be constructed using aggregated self-reports (Rodkin & Ahn, 2009). These groups are sometimes referred to as inclusive, in that reciprocity of friendship nominations is not required (Cairns, Leung, Buchanan, & Cairns, 1995; Kindermann, 2007). In contrast, cliques utilize multiple informants and are constructed based on aggregated peer reports (Cairns, Perrin, & Cairns, 1985).

Many researchers consider methods used to assess children’s peer groups to have generally acceptable levels of agreement with one another (Cairns et al., 1995; Gest et al., 2003, 2005; Rodkin & Ahn, 2009); however, these same studies have also underscored the distinctiveness of each approach. For instance, Lutz (2012) revealed that multi-informant peer-
reports (i.e., cliques) and inclusive self-reports (i.e., SRFG) were only in moderate agreement ($\kappa=.43$). Examination of the percent overlap of group compositions revealed a sizeable divergence between methods. In that study, 63.67% of SRFG members were also members of the nominator’s clique, whereas only 44.92% of children’s clique-mates were members of that child’s SRFG. To understand the possible origins of this discrepancy, one must explore the unique benefits and drawbacks of each approach. For instance, when making group nominations, children tend to systematically omit members from their own group who possess less favorable characteristics (e.g., aggression, low popularity, poor academic ability), thus biasing self-reported peer groups towards self-enhancement (Leung, 1996). Some data, however, suggest that multi-informant peer-reports (e.g., cliques) identify with greater accuracy the position of these poorly accepted students within the peer network (Kindermann, 2007; Rodkin & Ahn, 2009).

Although multi-informant peer-report methods appear to do a better job of identifying clique membership for poorly accepted and aggressive students, these methods sometimes overlook group membership for children who have meaningful reciprocated friendships (Kindermann, 2007; Lutz, 2012). In fact, findings from Lutz suggest that a larger percentage of children’s inclusive self-reported group (i.e., SRFG) nominations are reciprocated compared with the percentage of reciprocated friendship ties found in cliques. In contrast to the discrete groups formed by aggregated self-reports or aggregated peer reports (i.e., cliques), inclusive self-reports capture the subjective nature of friendship ties. This method better reflects each child’s unique collection of perceived friends by whom they are socialized (Kindermann, 2007), and recognizes that children’s friendships do not need to be reciprocated in order to have an important influence on behavior (Aloise-Young, Graham, & Hansen, 1994). Further highlighting the importance of children’s perceptions, some studies have found subjective self-reports to be
more powerful than objective indicators in predicting intrapersonal and interpersonal outcomes (Lerner, 1983; McElhaney, Antonishak, & Allen, 2008).

Taken together, when relying solely on multi-informant peer-reports or self-reports, erroneous conclusions might be drawn about the social experiences of some groups of children. Thus it stands to reason that using these methods in combination may help to depict a more accurate representation of children’s social worlds. In fact, data suggests that many aspects of peer relationships (e.g., reciprocated friendships, friendship quality, social acceptance, peer group membership) contribute uniquely to outcome variables that are related to individual well-being (Cassidy & Asher, 1992; Kwon & Lease, 2009a, 2007; Parker & Asher, 1993; Parker & Seal, 1996; Pedersen et al., 2007) and socialization of behavior (Hussong, 2002; Urberg et al., 1997). Moreover, findings by Lutz (2012) specifically indicated that when asking children to evaluate the characteristics of their own peer group, inclusive self-reported friendship groups and cliques make unique contributions. Therefore, in the current study, when exploring children’s social identification with their peer group, the group will be defined both in terms of inclusive self-reports (i.e., SRFG) and through multi-informant peer reports (i.e., cliques).

**Personal Characteristics and Social Identity**

Previous research suggests that there are a number of personal characteristics that make an individual more likely to experience positive feelings of social identity. In the current study we investigated the predictive nature of these personal characteristics through main effects on social identity. We also investigated if the relation between personal characteristics and social identity is moderated by group-level characteristics.

**Gender.** Although it stands to reason that females may have a stronger sense of social identity than males due to the close and intimate nature of their peer relations (see Rose &
Rudolph, 2006 and Rubin et al., 2006 for review), data on this topic yield mixed findings. Among adolescents aged 11 to 18, females tend to have significantly stronger social identification than males (Kiesner et al., 2002; Newman et al., 2007; Tarrant, 2002). In contrast, Kwon and Lease (2009) found no gender differences in social identity among third through fifth grade students.

**Age.** Although there is a dearth of studies that evaluate the relation between age and social identity expressly, Kwon and Lease (2009) found older children (i.e., 5th grade) to report stronger feelings of social identity than younger children (i.e., 3rd grade). However, studies seem to suggest that this relation may be reversed among samples of older children. Some researchers have found that adolescents (i.e., high school aged) place less importance on group membership with age (Gavin & Furman, 1989; Newman et al., 2007). With this finding in mind, it is not surprising that children’s clique affiliations appear to decrease substantially within this same developmental period (Shrum & Cheek, 1987). So, although there are no known studies that directly examine the developmental trajectory of social identity, existing research suggests that social identity might vary as a function of age.

**Personality.** Some children may possess a set of personality characteristics that give them an advantage when it comes to feeling as though they belong. Agreeable, sociable, and extraverted children are more likely to be well liked among peers (Coie, Dodge, & Coppotelli, 1982; Newcomb, Bukowski, & Pattee, 1993), and well accepted children tend to report stronger feelings of social identification with their friendship group than do less accepted peers (Kiesner et al., 2002). Given that children with certain personality traits are more likely to be well accepted by peers, and that acceptance within the peer group is linked to more positive feelings
of social identification, it is reasonable to hypothesize that children’s personality characteristics may also relate to social identification.

There are some data to support the plausibility of this hypothesis among older populations. In samples of college-age students, aspects of personality, primarily extraversion, have been found to contribute to feelings of social connectedness and sense of community, constructs related to Ingroup Ties (Lee, Dean, & Jung, 2008; Lounsbury & DeNeui, 1996; Lounsbury, Loveland, & Gibson, 2003). Extraversion has received specific interest in social connectedness literature, as sociability is a primary facet of this personality dimension; however, evidence exists supporting the relationship between all Big-Five personality dimensions (i.e., extraversion, openness, agreeableness, conscientiousness, and neuroticism) and feelings of community (Lounsbury et al., 2003). This literature suggests that individuals possessing higher levels of extraversion, agreeableness, openness, conscientiousness and lower levels of neuroticism are likely to experience greater feelings of belongingness and sense of community within their social networks. To date, researchers have not directly explored the relation among personality and social identity among child and adolescent populations.

**Goodness-of-fit**

Taken together, the literature suggests that personal characteristics such as gender, age, and personality may contribute to children’s overall sense of connection and belonging within the peer group. Although the characteristics of some children might make fitting in more difficult, finding a niche in which their personal characteristics are valued and accepted might buffer the negative outcomes associated with these traits. From a goodness-of-fit perspective, an individual’s personal characteristics (e.g., personality, abilities, motivations), no matter how extreme in nature, cause maladaptation only when mismatched with the demands and
expectations of the environment (Carey, 1998; Chess & Thomas, 1999; Thomas & Chess, 1977). From this viewpoint, dysfunction emanates not from the child or environmental context alone, but from the interaction between the two (Carey, 1999; Chess & Thomas, 1999).

When examining goodness-of-fit during middle childhood, peer groups become an important environmental context to consider as social interactions become increasingly focused within these groups during this developmental period (Rubin et al., 2006). In fact, research that has investigated goodness-of-fit within the context of peer relations indicates that congruence with peers’ behavioral expectations is more predictive of child functioning than congruence with the behavioral expectations of teachers (Lerner, 1983). During middle childhood, peers begin to articulate (explicitly or implicitly) more distinct behavioral expectations of one another through the communication of group norms. Group norms are defined as “regularities in attitudes and behavior that characterize a social group and differentiate it from other social groups (Hogg & Reid, 2006, p. 7).” Although researchers often operationalize group norms as aggregates of group members’ characteristics, the attitudes and behaviors of a small number of prototypical group leaders are often more influential in the development and maintenance of these norms (see Hogg & Reid, 2006 for review). Therefore, when measuring peer group norms, it is important to also consider children’s perceptions.

Group norms help outline a blueprint for group members’ expected behaviors and values; therefore, these norms likely play a substantial role in determining a child’s goodness-of-fit within the peer group. In fact, some research suggests that good fit with peers’ expectations for personality attributes relates positively to self-reported psychosocial competence (East et al., 1992) and negatively to teacher-reported academic competence and parent-reported behavior problems (Talwar, Nitz, & Lerner, 1990). Further, good fit has been found to help mitigate the
negative impact of personal characteristics that put children at risk for behavior difficulties. For instance, some research suggests that characteristics related to peer preference and rejection vary according to the behavioral characteristics that predominate the peer group (Stormshak, Bierman, Bruschi, Dodge, & Coie, 1999; Wright, Giammarino, & Parad, 1986).

The need to find social environments in which we belong may help to explain why individuals tend to affiliate with others who share similar characteristics and values (e.g., demographic traits, academic achievement, sociability, aggression; Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998; Kindermann, 1993, 2007). For example, aggressive children lacking appropriate social skills may have a difficult time fitting in with peers; however, being a member of a clique that values misbehavior may help create a greater sense of belonging. Several studies indicate that aggressive children seek to befriend other children sharing similar levels of aggression (Boxer, Guerra, Huesmann, & Morales, 2005; Snyder, Horsch, & Childs, 1997; Snyder et al., 2005). From a social identity perspective, children may seek similar others in an effort to maximize ingroup similarity and outgroup distinction (see Brown, 2000 for review). The importance of similarity in predicting children’s fit with peers may vary as a function of salient group norms. According to Hartup’s (1996) reputational salience theory, similarity is most important for those characteristics that are central to a group’s identity.

As previously discussed, unfavorable child-environment interactions (i.e., poor fit) can lead to difficulties in adjustment across a variety of domains, including intrapersonal and interpersonal adjustment (Carey, 1999). Given its emphasis on feelings of belongingness and positive affect associated with group membership, social identity may be a useful indicator of children’s subjective sense of interpersonal adjustment, and therefore, goodness-of-fit within the peer group. Furthermore, because individual’s social identities are enmeshed within their
personal identities (Tajfel, 1978), it is reasonable to believe that self-reported social identities may also reflect, to some degree, children’s intrapersonal adjustment.

The purpose of the current study was to examine whether group norms moderate the relation between children’s personal characteristics and their feelings of social identification. In order to accomplish this goal, the research question was parsed into two main questions. First, controlling for gender and age, do children’s personal characteristics (i.e., personality and norm motivation) predict their self-reported feelings of social identification with the peer group? Second, controlling for the main effects of personal characteristics and peer group characteristics (i.e., perceived group norms and group norm motivation), does the fit between personal characteristics and group characteristics (via interaction terms) meaningfully predict social identification with the peer group? The questions above will be examined for two types of peer groups, the SRFG and the clique.
Methods

Participants

Participation for the current study was solicited from teachers and students in four elementary schools located in a rural area of the southeastern United States. Given the social peer group focus of the current study, high grade-wide participation rates were required for study inclusion. Parental informed consent was required for at least 70% of the grade level for students to be included in the study. Across grade levels, participation rates ranged from 74.6% to 85.7%. The final sample included 455 students and 25 teachers. The sample included students from six third grade (n=102), nine fourth grade (n=155), and eleven fifth grade classrooms (n=198). Students ranged in age from nine to thirteen. Fifty-two percent of participants were female. Seventy-six percent of the students in the sample were White, 13% were Black, and 11% of students reported being from other racial backgrounds. The current sample reflected the county population relatively well in terms of race and gender.

Procedures

Data for the current study were collected as part of a larger study on peer relations. Data were collected during two one-hour sessions. Student assent was obtained prior to the beginning of each data collection session. All questions were read aloud to participants by one member of the research team while a second researcher circulated the room to monitor student progress and provide assistance.

Measures

Inventory of Children’s Individual Differences, Teacher-report form (ICID-T). The Inventory of Children’s Individual Differences (ICID; Halverson et al., 2003) was originally created as a parent-rated personality questionnaire, appropriate for children aged three through
thirteen. This cross-cultural measure is rooted in the Big-Five lexical approach, which assumes that salient features of personality are encoded into a culture’s language (see Goldberg, 1993 for historical review). Since its creation in 2003, the ICID has undergone several revisions. The original version of the measure had 144 items that were normed on a large sample (n = 2557) of children aged three through thirteen in the U.S., China, and Greece. Factor analyses yielded each of the Big-Five personality traits: Neuroticism, Extraversion, Intellect, Agreeableness, and Conscientiousness. Furthermore the ICID demonstrated convergent validity when correlated with the NEO Five Factor Index, with coefficients ranging from .51-.87 (Halverson et al., 2003).

Recently, authors reduced the number of items on the ICID to 51 in an effort to make the scale easier to complete for parents (ICID-S; Deal, Halverson, Martin, Victor, & Baker, 2007). However, a 61 item interim measure provided by the authors was used in the current study, as the 51 item measure was not available at the time of data collection. Additionally, the current study uses teacher ratings with the ICID rather than parent ratings. In a recent factor analysis study, researchers found that three factors represented the individual differences in children’s personalities most reliably and validly, as rated by teacher informants (Lutz, Masland, & Lease, in preparation). These factors included Agreeableness, Extraversion, and a combined Intellect/Conscientiousness dimension. These three factors were used in the current study.

Internal consistency estimates for each of the three factors were high with the current data. The alpha value equaled .996 for Agreeableness, .935 for Extraversion, and .955 for Intellect/Conscientiousness. Prior to calculating unit-weighted factor scores, items were standardized within teacher (mean = 0, standard deviation = 1). Standard scores were used because analysis of item responses suggested that some teachers used the entire response scale, whereas other teachers’ ratings centered around the scale’s midpoint. Children in our sample
were randomly assigned to classrooms; therefore, we determined that differences in teacher ratings were due to differences in how individual teachers used the response scale rather than true differences in student characteristics.

**Behavior Motivation Scale.** Behavior motivation was assessed using questions developed according to the expectancy-value motivational framework (Eccles, 1987; Wigfield & Eccles, 1992). The Expectancy-value theory of motivation posits that motivation to engage in a particular behavior is dependent on how successful a person thinks they will be in performing that behavior (i.e., expectancy) and the importance associated with that success (i.e., value) (Eccles & Wigfield, 2002).

Questions on the Behavior Motivation Scale were constructed to assess motivation to engage in five behaviors thought to be important in later elementary school years: academics, sports, trends, misbehavior, and talk about boyfriend/girlfriend relations. Participants used a 5-point response scale to respond to each question (see Appendix A). In contrast to findings by Eccles, Wigfield, Harold, and Blumenfeld (1993), we did not find consistent evidence for the differentiation between the expectancy and value dimensions of motivation. Examination of inter-item correlation matrices and reliability statistics indicated that expectancy and value items measured one construct, particularly for the trends, sports, and misbehavior domains. There was some evidence of the distinction between expectancy and value for the academic and boyfriend/girlfriend interest domains; however, significant overlap was evident. Therefore, because there was not sound evidence to justify the independent treatment of expectancy and value across behavior domains, items within each behavioral domain were averaged together and treated as a unitary motivation construct.
Means, standard deviations, skew, kurtosis, and alpha values for each of the behavior motivation domains are presented in Table 2.1. Scores for each domain were univariate normally distributed; values for skew and kurtosis were within recommended limits. Internal consistency estimates for each domain were acceptable, with alpha values ranging from .723 to .836.

Table 2.1

*Descriptive Statistics of Behavioral Motivation Scale (BMS)*

<table>
<thead>
<tr>
<th>Scale</th>
<th>M (SD)</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Motivation</td>
<td>3.81 (.70)</td>
<td>-0.75</td>
<td>0.83</td>
<td>.786</td>
</tr>
<tr>
<td>Sport Motivation</td>
<td>4.09 (.87)</td>
<td>-1.29</td>
<td>1.51</td>
<td>.836</td>
</tr>
<tr>
<td>Trend Motivation</td>
<td>3.71 (.96)</td>
<td>1.05</td>
<td>0.22</td>
<td>.770</td>
</tr>
<tr>
<td>Misbehavior Motivation</td>
<td>2.03 (1.07)</td>
<td>-0.57</td>
<td>-0.40</td>
<td>.723</td>
</tr>
<tr>
<td>BFGF Motivation</td>
<td>3.56 (1.15)</td>
<td>-0.51</td>
<td>-0.77</td>
<td>.835</td>
</tr>
</tbody>
</table>

Note. BFGF = Boyfriend/Girlfriend Relations

**Social Network Measures**

All peer nominations were grade-based and included only those students who were given parental consent to participate in the study. Grade-based, rather than classroom- or school-based, nominations were chosen because students in the current sample had frequent opportunities to form friendships with students outside of their classroom throughout the school day. Specifically, fourth and fifth grade students in this sample were ability grouped for instruction and rotated classes throughout the day, and all children in the sample had frequent opportunities for grade-based interactions during lunch, recess, and specials (e.g., music, art, technology). Further, the schools in the current sample had high student stability; therefore, children had the opportunity to maintain friendships with other students in their grade cohort across academic years.
To assist students in making nomination choices, rosters were provided that included the names of all participating children in the student’s grade. Although ten blank spaces were provided following each nomination question, students were informed that they could list more or fewer students if they wished, essentially making this an unlimited nomination procedure.

**Cliques.** In order to assess clique membership, the Social Cognitive Map (SCM) procedure was used. This method, originally introduced by Cairns, Perrin, and Cairns (1985), asks students to list groups of children whom they recognized as spending a lot of their time together. Specifically, students were asked, “*Think about the kids in your grade. Some hang out together, just doing a lot together. Please list the groups of kids who play, work, or hang out together a lot. The way you think about it, even two people can be in a group together.*” Spaces for eight groups were provided, but students were instructed that they could list as many groups as they wished. Students were given a list of all participating students in their grade from which to nominate.

Based on this peer nomination data, a co-occurrence matrix is created. Each cell in the matrix contains a count of how many times each pair of participants was nominated by peers as belonging to the *same group*. Along the diagonal exists the number of times that a student was nominated as belonging to any group (i.e., total number of nominations across all students). Then, discrete cliques are formed by analyzing this co-occurrence matrix with an SCM analysis program (this study uses SCM 4.0; 1998, Center for Developmental Science of the University of North Carolina at Chapel Hill).

According to Gest, Farmer, Cairns, & Xie (2003), children “share reasonably convergent views on the composition of social clusters in the network (p. 515).” Previous studies indicate that the SCM procedure yields reliable and stable cliques, with test-retest estimates ranging from
.74 to .84 (Cairns, Leung, Buchanan, & Cairns, 1995). Evidence for the validity of the SCM procedure also exists. For instance, observational data of student interaction patterns is highly related to cliques derived from SCM peer nominations (Cairns et al., 1985; Gest, Farmer, Cairns, & Xie, 2003). Gest and colleagues (2003) found that children interacted four times more often with clique-mates than with other same-gender classmates.

**Self-Reported Friendship Group (SRFG).** For this measure, students were instructed to “list a group of friends with whom you spend a lot of time and do a lot of things together.” To assist children in making their nominations, a nomination roster was provided containing the names of all participating students in their grade. Ten spaces were provided for nominations, but students were instructed that they could list more than ten friends if they wished.

**Clique Motivation Norms.** Clique Motivation Norms were determined by using clique membership information from the Social Cognitive Map procedure and self-reported data from the Behavior Motivation Scale (BMS). Clique members’ scores on the BMS were averaged for each of the five behavioral domains, resulting in the following five variables: *Achievement Clique Motivation Norm, Misbehavior Clique Motivation Norm, Athletics Clique Motivation Norm, Trends Clique Motivation Norm,* and *Boyfriend/Girlfriend Clique Motivation Norm.* Clique scores on the BMS were calculated without the target student’s score. These variables reflect each clique’s average efficacy for and value placed upon each normative behavior. The means and standard deviations for the Clique Motivation Norms are presented in Table 2.

**SRFG Motivation Norms.** Similar to the calculation of Clique Motivation Norms, SRFG Motivation Norms were determined by averaging SRFG members’ scores on the BMS across the five behavioral domains. This resulted in the creation of the following variables: *Achievement SRFG Motivation Norm, Misbehavior SRFG Motivation Norm, Sports SRFG*
Motivation Norm, Trend SRFG Motivation Norm, and Boyfriend/Girlfriend SRFG Motivation Norm. These variables represent each SRFG’s average efficacy in and value placed upon each of the five normative behaviors. Means and standard deviations for the SRFG Motivation Norms are presented in Table 2.2.

Table 2.2
Descriptive Statistics of Clique and SRFG Motivation Norms

<table>
<thead>
<tr>
<th>Scale Domain</th>
<th>Clique Motivation Norms</th>
<th></th>
<th></th>
<th>SRFG Motivation Norms</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean (SD)</td>
<td>Skew</td>
<td>Kurtosis</td>
<td>Mean (SD)</td>
<td>Skew</td>
<td>Kurtosis</td>
</tr>
<tr>
<td>Achievement</td>
<td>3.64 (.54)</td>
<td>-1.39</td>
<td>4.59</td>
<td>3.73 (.42)</td>
<td>-0.69</td>
<td>1.04</td>
</tr>
<tr>
<td>Sports</td>
<td>3.87 (.63)</td>
<td>-1.07</td>
<td>2.61</td>
<td>3.98 (.51)</td>
<td>-0.64</td>
<td>0.62</td>
</tr>
<tr>
<td>Trends</td>
<td>3.60 (.60)</td>
<td>-0.89</td>
<td>1.24</td>
<td>3.64 (.51)</td>
<td>-0.61</td>
<td>0.36</td>
</tr>
<tr>
<td>Misbehavior</td>
<td>1.98 (.56)</td>
<td>0.76</td>
<td>1.18</td>
<td>2.02 (.55)</td>
<td>0.82</td>
<td>2.12</td>
</tr>
<tr>
<td>BFGF</td>
<td>3.33 (.74)</td>
<td>-0.82</td>
<td>1.22</td>
<td>3.42 (.63)</td>
<td>-0.53</td>
<td>0.57</td>
</tr>
</tbody>
</table>

Note. BFGF = Boyfriend/Girlfriend Relations

Perceived Group Norms. To assess children’s perceptions of the norms present within their “friendship group,” they were asked to report the number of the students in their group that engaged in various norm-related behaviors. For instance, students were asked, “How many of the kids in your group are smart and make good grades?” Response options included none, some, most, and all. Three to four questions targeted each of the five behavioral domains including, academics, trends, sports, misbehavior, and girlfriend/boyfriend interest. Internal consistency estimates for the questions within each domain were acceptable, with alpha values ranging from .706 to .881. In order to derive a mean score for each normative domain, items were averaged
within domain. Item wordings, means and standard deviations for each domain are presented in Table 2.3.

Table 2.3

*Descriptive Statistics of Perceived Group Norms*

<table>
<thead>
<tr>
<th>Scale</th>
<th>M (SD)</th>
<th>Skew</th>
<th>Kurtosis</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic Norms</td>
<td>2.96 (.60)</td>
<td>-0.46</td>
<td>0.22</td>
<td>.735</td>
</tr>
<tr>
<td>Sport Norms</td>
<td>2.94 (.64)</td>
<td>-0.039</td>
<td>-0.27</td>
<td>.707</td>
</tr>
<tr>
<td>Trend Norms</td>
<td>2.74 (.89)</td>
<td>-0.029</td>
<td>-0.091</td>
<td>.881</td>
</tr>
<tr>
<td>Misbehavior Norms</td>
<td>1.68 (.70)</td>
<td>1.17</td>
<td>1.03</td>
<td>.850</td>
</tr>
<tr>
<td>BFGF Norms</td>
<td>2.58 (.85)</td>
<td>-0.04</td>
<td>-0.87</td>
<td>.863</td>
</tr>
</tbody>
</table>

Note. BFGF = Boyfriend/Girlfriend Interest

**Social Identification Scale.** The Social Identification Scale (SIS) is a self-report measure of social identity adapted by Kwon and Lease (2009b) from Cameron and Lalonde’s (2001) Social Identity Scale. The original Social Identity Scale, designed for use with adult populations, measured three distinct dimensions of social identity, *Cognitive Centrality, Ingroup Affect,* and *Ingroup Ties* (Cameron & Lalonde, 2001; Cameron, 2004). The first dimension, *Cognitive Centrality,* refers to the importance associated with group membership. *Ingroup Affect* refers to the range of emotions regarding group membership (e.g., joy, pride, shame, regret). Finally, *Ingroup Ties* refers to the connectedness and sense of belonging associated with group membership.

In their study, Kwon and Lease (2009b) selected and modified twelve of the original 28 items on the SIS in order to facilitate easier comprehension and completion among third through fifth grade participants (see Table 4 for item wordings). Each item on Kwon and Lease’s SIS
read as a statement and participants were asked to indicate how much they agreed with the statement using a 5-point Likert scale (strongly disagree, disagree, undecided, agree, strongly agree). Due to poor internal consistency, items measuring Cognitive Centrality were dropped from the scale, and a subsequent confirmatory factor analysis indicated that the remaining items constituted one factor. The internal consistency of the remaining nine items demonstrated adequate reliability (standardized $\alpha = .841$).

Following procedures by Kwon and Lease (2009b), we created a Social Identity score for each participant by averaging the nine SIS items. The resulting factor score, named $SIS\ Total$ in Table 2.4, was univariate normally distributed with skewness and kurtosis within an acceptable range. Means and standard deviations for each item and for the SIS Total are presented in Table 2.4.
Table 2.4

Descriptive statistics for the Social Identification Scale (SIS)

<table>
<thead>
<tr>
<th>Item</th>
<th>M (SD)</th>
<th>Skew</th>
<th>Kurtosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have a lot in common with others in this group</td>
<td>4.03 (0.92)</td>
<td>-1.10</td>
<td>1.29</td>
</tr>
<tr>
<td>In general, I am glad that I am a member of this group</td>
<td>4.48 (0.74)</td>
<td>-1.88</td>
<td>5.43</td>
</tr>
<tr>
<td>I find it difficult to make good friendships with others in this group</td>
<td>4.13 (1.16)</td>
<td>-1.28</td>
<td>0.68</td>
</tr>
<tr>
<td>I wish I were a member of a different group (r)</td>
<td>4.46 (0.95)</td>
<td>-2.01</td>
<td>3.81</td>
</tr>
<tr>
<td>I ‘fit in’ with others in this group</td>
<td>4.19 (0.90)</td>
<td>-1.39</td>
<td>2.40</td>
</tr>
<tr>
<td>Generally, I feel good when I think about myself as a member of this group</td>
<td>3.99 (0.95)</td>
<td>-0.95</td>
<td>.89</td>
</tr>
<tr>
<td>I feel that I belong to this group</td>
<td>4.07 (1.01)</td>
<td>-1.12</td>
<td>1.00</td>
</tr>
<tr>
<td>I often regret that I am a member of this group (r)</td>
<td>4.39 (0.97)</td>
<td>-1.54</td>
<td>1.75</td>
</tr>
<tr>
<td><strong>SIS Total</strong></td>
<td><strong>4.22 (0.65)</strong></td>
<td><strong>-1.28</strong></td>
<td><strong>2.35</strong></td>
</tr>
</tbody>
</table>
Results

Predictors of Social Identification

Gender, grade, personality, self-reported norm motivation, and group norms were examined as predictors of Social Identity. Group-level characteristics used in these analyses were conceptualized and computed in three different ways, *Perceived Group Norms, SRFG Motivation Norms,* and *Clique Motivation Norms.* We ran five regressions within each of these groups, focusing on the following five normative behaviors: academics, sports, trends, misbehavior, and boyfriend/girlfriend relations. All independent variables were standardized (mean = 0, standard deviation = 1) in order to reduce multicollinearity caused by interaction terms.

In total, fifteen sets of hierarchical multiple regression analyses were conducted with Social Identification as the outcome variable. The first, second, and third steps of the hierarchical regressions were the same for all analyses. In the first step, demographic variables, including gender (male = 0, female = 1) and grade were entered. Grade was dummy coded so that third grade served as the reference group (i.e., 3rd versus 4th, 3rd versus 5th). In the second step of the regression analyses, teacher-rated personality variables were entered, including Agreeableness, Extraversion, and Intellect/Conscientiousness to explore for main effects. Self-reported behavior motivation (e.g., self-reported academic motivation from the Behavior Motivation Scale) was entered in step three.

In the fourth step, group-level norms were entered corresponding with those entered in step three (e.g., academic group norms were entered in step four when self-reported academic motivation was entered in step three). The group norms entered in step 4 were conceptualized
and calculated in three ways, using *Perceived Group Norms*, *SRFG Motivation Norms*, and *Clique Motivation Norms*.

Step five focused on the primary research question—Do group norms moderate the relation between children’s individual characteristics and their social identity? To address this question, four interaction terms were entered in the final step of the regression: Agreeableness by group norm, Extraversion by group norm, Intellect/Conscientiousness by group norm, and self-rated behavior motivation by group norm.

**Perceived Group Norms**

Steps one, two, and three were the same across all hierarchical regression analyses; therefore, the results of these steps will be discussed first. According to the results presented in Table 2.5, fifth grade students (\(M = 4.28; SD = .55\)) reported significantly higher social identity with their friendship group than third grade students (\(M = 4.07; SD = .67; \beta = .136; p = .012\)). There were no significant differences in Social Identity between third and fourth grade students (\(\beta = .074; p = .172\)). Because third grade students were coded as the reference group, differences between fourth and fifth graders were not directly compared in post hoc pairwise comparisons. Regarding gender, marginally significant differences in Social Identity were detected between male and female students (\(\beta = -.098; p = .053\)). Contrary to expectations, males reported stronger feelings of Social Identity than females.

Teacher-rated personality variables were entered in step two of the hierarchical regression. In this step of the analysis, significant main effects for two personality variables emerged. After controlling for the effects of gender and grade, teacher-rated Agreeableness and Intellect/Conscientiousness significantly predicted children’s Social Identity. Standardized regression coefficients indicated that children reported stronger feelings of social identification
with their group of friends when they were rated by teachers as possessing low levels of Agreeableness ($\beta = -.197; p = .001$), contrary to predictions, and high levels of Intellect/Conscientiousness ($\beta = .216; p = .001$). Teacher rated Extraversion was not significantly related to Social Identity ($\beta = .075; p = .175$).

*Self-reported Behavior Motivation*, as assessed by the Behavior Motivation Scale, was entered in step three. After controlling for the variance in social identity accounted for by gender, grade, and personality, *Self-reported Behavior Motivation* emerged as a significant predictor of Social Identity across all behavioral domains except for misbehavior. Specifically, significant main effects emerged for *Self-Reported Academic Motivation* ($\beta = .144; p = .007$), *Self-Reported Sports Motivation* ($\beta = .151; p = .004$), *Self-Reported Trend Motivation* ($\beta = .174; p = .001$), and *Self-Reported GFBF Motivation* ($\beta = .165; p = .002$). This indicates that children identify more strongly with their group when they are more highly motivated by academics, sports, trends, and girlfriend/boyfriend relations.

**Moderating effect of Perceived Academic Group Norms.** For the academic domain, *Perceived Academic Group Norms* was entered in the fourth step of the hierarchical regression. After controlling for gender, grade, personality, and *Self-Reported Academic Motivation* in steps one through three, *Perceived Academic Group Norms* emerged as a significant predictor of Social Identity ($\beta = .219; p < .001$). This indicates that when controlling for variance accounted for by person-level variables, including gender, grade, personality, and self-reported academic motivation, children reported stronger feelings of Social Identity when they perceived their group to have strong academic norms.

In the final step of the regression equation, a significant interaction emerged between Agreeableness and perceived group academic norms ($\beta = .126; p = .038$). Highly agreeable
children reported stronger feelings of Social Identity with their peer group when they perceived their group as maintaining high academic norms (Figure 1). In contrast, the Perceived Academic Group Norms did not impact Social Identity for less agreeable children. Extraversion and Intellect/Conscientiousness did not interact significantly with perceived group academic norms ($\beta = .075, p = .180$ and $\beta = .028, p = .638$, respectively). Lastly, contrary to our hypothesis, perceived academic group norms did not moderate the relationship between academic motivation and social identity ($\beta = .036, p = .497$). Taken together, these results indicate that higher Self-Reported Academic Motivation corresponds with stronger Social Identity regardless of the peer groups’ perceived academic norms. Likewise, these results also indicate that stronger Perceived Academic Group Norms correspond with stronger feelings of Social Identity, regardless of the individual’s Self-Reported Academic Motivation.

Table 2.5
Hierarchical Regression Examining the Moderating Effect of Academic Norms on the Prediction of Social Identity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived Group Characteristics $\Delta R^2$</th>
<th>Aggregated SRFG Characteristics $\Delta R^2$</th>
<th>Aggregated Clique Characteristics $\Delta R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.024*</td>
<td>.024*</td>
<td>.028*</td>
</tr>
<tr>
<td>3rd v. 5th Grade</td>
<td>-098</td>
<td>-.097</td>
<td>-.118*</td>
</tr>
<tr>
<td>4th v. 5th Grade</td>
<td>.136*</td>
<td>.135*</td>
<td>.140*</td>
</tr>
<tr>
<td>Step 2</td>
<td>.046**</td>
<td>.046**</td>
<td>.051**</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.197*</td>
<td>-.197*</td>
<td>-.197*</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.075</td>
<td>.076</td>
<td>.039</td>
</tr>
<tr>
<td>Intellect/Conscientiousness</td>
<td>.216*</td>
<td>.216*</td>
<td>.257**</td>
</tr>
<tr>
<td>Step 3</td>
<td>.017*</td>
<td>.017*</td>
<td>.025*</td>
</tr>
<tr>
<td>Self-Reported ACA Motivation</td>
<td>.144*</td>
<td>.144*</td>
<td>.172*</td>
</tr>
<tr>
<td></td>
<td>.040**</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>---</td>
<td>--------</td>
<td>------</td>
<td>------</td>
</tr>
<tr>
<td>Step 4</td>
<td>ACA Group Norms</td>
<td>.219**&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.020&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Step 5</td>
<td>Agreeable X ACA Group Norms</td>
<td>.126&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.058&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Extraversion X ACA Group Norms</td>
<td>.075&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.003&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Intellect/Conscientiousness X ACA Group Norms</td>
<td>.028&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.012&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td>Self-Reported ACA Motivation X ACA Group Norms</td>
<td>.036&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.004&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

**Note.** ACA = Academic Education

<sup>a</sup>ACA Group Norms variable = Perceived Academic Group Norms

<sup>b</sup>ACA Group Norms variable = Achievement SRFG Motivation Norm

<sup>c</sup>ACA Group Norms variable = Achievement Clique Motivation Norm

*p < .05  **p < .01

---

*Figure 1. Interaction between Teacher-rated Agreeableness Trend Motivation and Perceived Group Academic Norms in Prediction of Social Identity.*
Moderating effect of Perceived Sports Group Norms. After controlling for gender, grade, personality, and Self-Reported Sports Motivation in steps one through three, children’s perceptions of one’s group’s sports norms significantly predicted Social Identity ($\beta = .112; p = .040$). In other words, when controlling for variability in Social Identity accounted for by demographics, personality, and self-reported motivation, children’s self-reported social identification with the peer group was higher when they perceived their group to have strong sports norms. In the final step of the regression, the addition of interaction terms did not contribute significantly to the proportion of explained variance in Social Identity ($\Delta R^2 = .018, p = .101$). Results from this hierarchical regression are presented in Table 2.6.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived Group Characteristics</th>
<th>Aggregated SRFG Characteristics</th>
<th>Aggregated Clique Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
</tr>
<tr>
<td>Step 1</td>
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<td>Gender</td>
<td>.021*</td>
<td>.020*</td>
<td>.024*</td>
</tr>
<tr>
<td>3rd v. 5th Grade</td>
<td>.124*</td>
<td>.124*</td>
<td>.127*</td>
</tr>
<tr>
<td>4th v. 5th Grade</td>
<td>.057</td>
<td>.058</td>
<td>.041</td>
</tr>
<tr>
<td>Step 2</td>
<td>.048**</td>
<td>.048**</td>
<td>.053**</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.213*</td>
<td>-.213*</td>
<td>-.215*</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.069</td>
<td>.070</td>
<td>.032</td>
</tr>
<tr>
<td>Intellect/Conscientiousness</td>
<td>.221*</td>
<td>.221*</td>
<td>.263**</td>
</tr>
<tr>
<td>Step 3</td>
<td>.020*</td>
<td>.020*</td>
<td>.021*</td>
</tr>
<tr>
<td>Self-reported SPT Motivation</td>
<td>.151*</td>
<td>.150*</td>
<td>.153*</td>
</tr>
<tr>
<td>Step 4</td>
<td>.010*</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>SPT Group Norms</td>
<td>.112*&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.010&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-.005&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Step 5</td>
<td>.018</td>
<td>.001</td>
<td>.007</td>
</tr>
<tr>
<td>Agreeableness X Group SPT Norms</td>
<td>-.086&lt;sup&gt;a&lt;/sup&gt;</td>
<td>-.020&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-.001&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Extraversion X Group SPT Norms</td>
<td>.111*&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.017&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-.070&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Intellect/Consciousness X Group SPT Norms</td>
<td>.085&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.016&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.088&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
<tr>
<td>Self-reported SPT Motivation X SPT Group Norms</td>
<td>-.032&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.022&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-.012&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

Note. SPT = Sports

<sup>a</sup>SPT Group Norms variable = Perceived Sports Group Norms
<sup>b</sup>SPT Group Norms variable = Sports SRFG Motivation Norm
<sup>c</sup>SPT Group Norms variable = Sports Clique Motivation Norm

*p < .05  **p < .01

**Moderating Effect of Perceived Trend Group Norms.** As can be seen in Table 2.7, after controlling for gender, grade, personality, and *Self-Reported Trend Motivation* in steps one through three, *Perceived Trend Group Norms* did not significantly predict Social Identity (β = .059; p = .336) in step four of the hierarchical regression. However, the interaction between *Perceived Trend Group Norms* and *Self-Reported Trend Motivation* was significant (β = .117; p = .025) in step five. Children report higher feelings of Social Identity when they are matched with their group regarding trend norms. In other words, children who perceived their friendship group as having high trend norms reported stronger feelings of social identification when they also reported high trend motivation. In contrast, children who perceived their friendship group as having low trend norms identified more strongly with their groups when they, too, reported low trend motivation (see Figure 2). Notably, however, the addition of this interaction in the hierarchical regression model only approached significance (ΔR² = .020, p = .065). This indicates
that at the $p < .05$ level of significance, the interaction between *Self-Reported Trend Motivation* and *Perceived Trend Group Norms* does not account for additional variance in Social Identity beyond those variables already included in steps one through three. There were no significant interactions between personality variables and *Perceived Trend Group Norms* in step four of the model.

Table 2.7

*Hierarchical Regression Examining the Moderating Effect of Trend Norms on the Prediction of Social Identity*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived Group Characteristics $\Delta R^2$</th>
<th>$\beta$</th>
<th>Aggregated SRFG Characteristics $\Delta R^2$</th>
<th>$\beta$</th>
<th>Aggregated Clique Characteristics $\Delta R^2$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
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<td>.026*</td>
<td>.026*</td>
<td>.030*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>-.097</td>
<td>-.096</td>
<td>-.117*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd v. 5th Grade</td>
<td>.145*</td>
<td>.145*</td>
<td>.150*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th v. 5th Grade</td>
<td>.071</td>
<td>.072</td>
<td>.056</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
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<td>.047**</td>
<td>.052**</td>
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<td>-.197*</td>
<td>-.197*</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td>.075</td>
<td>.075</td>
<td>.039</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intellect/Conscientiousness</td>
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<td>.219**</td>
<td>.260**</td>
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<tr>
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<td>.028*</td>
<td>.020*</td>
<td></td>
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</tr>
<tr>
<td>Self-reported TRD Motivation</td>
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<td>.175*</td>
<td>.147*</td>
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<tr>
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<td>.000</td>
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<td>.013</td>
<td>.009</td>
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</tr>
<tr>
<td>Extraversion X Group TRD Norms</td>
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<td>.032b</td>
<td>.095c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intellect/Consciousness X Group TRD Norms</td>
<td>.049a</td>
<td>.060b</td>
<td>-.067c</td>
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<td></td>
</tr>
</tbody>
</table>
Self-reported TRD Motivation X Group TRD Norms  

<table>
<thead>
<tr>
<th></th>
<th>.117*</th>
<th>.058</th>
<th>.005c</th>
</tr>
</thead>
</table>

Note. TRD = Trend  

*TRD Group Norms variable = Perceived Trend Group Norms  

**TRD Group Norms variable = Trend SRFG Motivation Norm  

***TRD Group Norms variable = Trend Clique Motivation Norm  

*p < .05  **p < .01  

Figure 2. Interaction between self-rated Trend Motivation and Perceived Group Trend Norms in the prediction of Social Identity.  

Note. The r-square change value for this step of the regression equation only approached significance ($\Delta R^2 = .020$, $p = .065$).  

Moderating effect of Perceived Misbehavior Group Norms. For the misbehavior domain, after controlling for the variation in social identity explained by gender, grade, personality, and Self-reported Misbehavior Motivation, Perceived Misbehavior Group Norms did not significantly predict student’s feelings of Social Identity ($\beta = -.107$, $p = .059$, respectively).  

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Notably, however, the interaction between *Self- Reported Misbehavior Motivation* and *Perceived Misbehavior Group Norms* significantly predicted feelings of Social Identity \( (\beta = .137, p = .026) \) in step five of the model. As can be seen in Figure 3, students with low *Self-reported Misbehavior Motivation* reported stronger feelings of Social Identity when they also reported low *Perceived Misbehavior Group Norms*. In contrast, children reporting higher *Self-reported Misbehavior Motivation* experienced the same level of Social Identity with the peer group regardless of their perceptions of the group’s misbehavior norms. Interactions between personality variables and *Perceived Misbehavior Group Norms* were not significant in step five.

Results of this hierarchical regression are presented in Table 2.8.

**Table 2.8**

*Hierarchical Regression Examining the Moderating Effect of Misbehavior Norms on the Prediction of Social Identity*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived Group Characteristics</th>
<th>Aggregated SRFG Characteristics</th>
<th>Aggregated Clique Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( \Delta R^2 )</td>
<td>( \beta )</td>
<td>( \Delta R^2 )</td>
</tr>
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<td>Step 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.024*</td>
<td>-.102*</td>
<td>.024*</td>
</tr>
<tr>
<td>3rd v. 5th Grade</td>
<td>.135*</td>
<td>.135*</td>
<td>.139*</td>
</tr>
<tr>
<td>4th v. 5th Grade</td>
<td>.063</td>
<td>.064</td>
<td>.048</td>
</tr>
<tr>
<td>Step 2</td>
<td>.047**</td>
<td>.047*</td>
<td>.052**</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>-.195*</td>
<td>-.195*</td>
<td>-.195*</td>
</tr>
<tr>
<td>Extraversion</td>
<td>.070</td>
<td>.070</td>
<td>.034</td>
</tr>
<tr>
<td>Intellect/Conscientiousness</td>
<td>.222**</td>
<td>.222**</td>
<td>.262**</td>
</tr>
<tr>
<td>Step 3</td>
<td>.000</td>
<td>.000</td>
<td>.000</td>
</tr>
<tr>
<td>Self-reported MBH Motivation</td>
<td>.015</td>
<td>.015</td>
<td>.004</td>
</tr>
<tr>
<td>Step 4</td>
<td>.008</td>
<td>.001</td>
<td>.002</td>
</tr>
<tr>
<td>MBH Group Norms</td>
<td>-.107(^a)</td>
<td>-.040(^b)</td>
<td>-.049(^c)</td>
</tr>
<tr>
<td>Step 5</td>
<td>.022*</td>
<td>.001</td>
<td>.003</td>
</tr>
</tbody>
</table>

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Agreeableness X Group MBH Norms  
-0.07<sup>a</sup>  -0.02<sup>b</sup>  -0.01<sup>c</sup>  
Extraversion X Group MBH Norms  
-0.02<sup>a</sup>  0.03<sup>b</sup>  -0.04<sup>c</sup>  
Intellect/Consciousness X Group MBH Norms  
0.02<sup>a</sup>  -0.03<sup>b</sup>  -0.001<sup>c</sup>  
Self-reported MBH Motivation X Group MBH Norms  
0.137<sup>*a</sup>  -0.008<sup>b</sup>  -0.005<sup>c</sup>  

Note. MBH = Misbehavior  
<sup>a</sup> MBH Group Norms variable = Perceived Misbehavior Group Norms  
<sup>b</sup> MBH Group Norms variable = Misbehavior SRFG Motivation Norm  
<sup>c</sup> MBH Group Norms variable = Misbehavior Clique Motivation Norm  
*<i>p < 0.05</i>  **<i>p < 0.01</i>  

Figure 3. Interaction between Self-rated Misbehavior Motivation and Perceived Group Misbehavior Norms in the Prediction of Social Identity.  

**Moderating Effect of Perceived Boyfriend/Girlfriend (BFGF) Group Norms.** In the domain of boyfriend/girlfriend interest, *Perceived BFGF Group Norms* (entered at step four) did
not significantly predict feelings of Social Identity ($\beta = .076; p = .226$) after controlling for the effects of gender, grade, personality, and Self-Reported BFGF Motivation. However, in step five of the regression, the interaction between Self-Reported BFGF Motivation and Perceived BFGF Group Norms significantly predicted reports of social identification with the friend group ($\beta = .172; p = .002$). As can be seen in Figure 4, children reported stronger feelings of social identification with the peer group when their Self-Reported BFGF Motivation matched their Perceived BFGF Group Norms of their group of friends. There were no significant interactions between children’s personality characteristics and Perceived BFGF Group Norms (see Table 2.9).

Table 2.9

Hierarchical Regression Examining the Moderating Effect of Boyfriend/Girlfriend (BFGF) Norms on the Prediction of Social Identity

<table>
<thead>
<tr>
<th>Variable</th>
<th>Perceived Group Characteristics $\Delta R^2$</th>
<th>$\beta$</th>
<th>Aggregated SRFG Characteristics $\Delta R^2$</th>
<th>$\beta$</th>
<th>Aggregated Clique Characteristics $\Delta R^2$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
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<td>-.099</td>
<td>-.101*</td>
<td>-.119*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3rd v. 5th Grade</td>
<td>.153*</td>
<td></td>
<td>.153*</td>
<td>.159*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4th v. 5th Grade</td>
<td>.071</td>
<td></td>
<td>.076</td>
<td>.067</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 2</td>
<td>.059**</td>
<td>-.251**</td>
<td>-.243**</td>
<td>-.209*</td>
<td>.070</td>
<td>.065</td>
</tr>
<tr>
<td>Agreeableness</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extraversion</td>
<td></td>
<td>.070</td>
<td></td>
<td>.043</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intellect/Conscientiousness</td>
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<td>.247**</td>
<td>.246**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 3</td>
<td>.024*</td>
<td>.165*</td>
<td>.166*</td>
<td>.164*</td>
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<tr>
<td>Self-reported BFGF Motivation</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Step 4</td>
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<td>.004</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>BFGF Group Norms</td>
<td>.076$^a$</td>
<td></td>
<td>-.064$^b$</td>
<td>.045$^c$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Step 5</td>
<td>.039*</td>
<td>.002</td>
<td></td>
<td>.008</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Agreeableness X Group BFGF Norms  
\(-.015^a\)  
\(-.032^b\)  
\(.009^c\)

Extraversion X Group BFGF Norms  
\(.079^a\)  
\(.034^b\)  
\(.008^c\)

Intellect/Consciousness X Group BFGF Norms  
\(-.037^a\)  
\(-.026^b\)  
\(-.096^c\)

Self-reported BFGF Motivation X Group BFGF Norms  
\(.172^{*a}\)  
\(-.021^b\)  
\(-.018^c\)

Note. BFGF = Boyfriend/Girlfriend

\(^a\) BFGF Group Norms variable = Perceived Boyfriend/Girlfriend Group Norms

\(^b\) BFGF Group Norms variable = Boyfriend/Girlfriend SRFG Motivation Norm

\(^c\) BFGF Group Norms variable = Boyfriend/Girlfriend Clique Motivation Norm

\(^{*p < .05}\) \(^{**p < .01}\)

**Figure 4.** Interaction between self-rated BFGF Motivation and perceived Group BFGF Norms in the prediction of Social Identity.

**SRFG and Clique Motivation Norms.** As previously described, we also conducted hierarchical regression analyses examining the moderating role of group norms when measured
by SRFG Motivation Norms and Clique Motivation Norms. These analyses were parallel to those described above, with steps one and two being identical. However, in the analyses described in this section, SRFG Motivation Norms or Clique Motivation Norms were entered in step three as an estimate of group-level norm characteristics instead of Perceived Group Norms. SRFG Motivation Norms represent the average of SRFG members’ ratings on the Behavior Motivation Scale as described in the methods section. Likewise, Clique Motivation Norms represent the average of clique members’ reports on the Behavior Motivation Scale. Finally, step four included interactions between individual level variables (i.e., personality and self-reported behavior motivation) and group behavior norms (i.e., SRFG Motivation Norms or Clique Motivation Norms). Results of these analyses are presented separately for each behavioral domain in Tables 2.5 through 2.9.

Steps one and two of the current hierarchical regression analyses were the same as those described in the Perceived Group Norms section described above, with gender and grade entered in step one and personality variables entered in step two. Results for SRFG and Clique analyses followed a similar pattern and will be described briefly. Slight variations between the two sets of analyses emerged resulting from minor fluctuations in sample size. On average, the sample size was 392 for the analyses using Perceived Group and SRFG Norms regressions, whereas the sample size was 367 in regressions using Clique Norms. Listwise deletion was used for missing data; therefore, all students who were not assigned a clique membership were excluded from the clique analyses. According to the results of a t-test, there were no differences in Social Identity scores between children who were assigned a clique and children who were not assigned a clique, $t(422) = .670, p = .503$. 

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To review, grade, gender, and personality variables were significant predictors of social identity in steps one and two of the hierarchal regression analyses. In step three of the regressions, Self-Reported Behavior Motivation was entered. In this step Self-Reported Academic Motivation (SRFG: $\beta = .144$; $p = .00$; Clique: $\beta = .172$; $p = .002$), Self-Reported Sports Motivation (SRFG: $\beta = .150$; $p = .004$; Clique: $\beta = .153$; $p = .004$), Self-Reported Trend Motivation (SRFG: $\beta = .175$; $p = .001$; Clique: $\beta = .147$; $p = .005$), and Self-Reported BFGF Motivation (SRFG: $\beta = .166$; $p = .002$; Clique: $\beta = .164$; $p = .003$) emerged as significant predictors of Social Identity. In step four of the regression, SRFG Motivation Norms and Clique Motivation Norms were not significantly related to Social Identity for any of the behavioral domains.

In the final step of the regression analyses, interaction terms were entered in order to test whether SRFG Motivation Norms and Clique Motivation Norms moderated the relation between individual characteristics (i.e., personality and behavior motivation) and Social Identity. For both Aggregated SRFG and Aggregated Clique regression analyses, interaction terms failed to account for unique variance in Social Identity above and beyond the variance explained by the variables in steps one, two, and three. In other words, Aggregated SRFG Norms and Aggregated Clique Norms did not significantly moderate the relation between individual-level variables and self-reported social identification with the peer group. This was true for all five behavioral domains assessed (see Tables 2.5 through 2.9).
**Discussion**

The primary aim of the current study was to investigate whether goodness-of-fit within a peer group predicted children’s subjective sense of social identity. To explore this question, we examined whether group norms moderated the relation between children’s personal characteristics (i.e., personality and behavior motivations) and self-reported social identity. A secondary aim of the study was to examine differences in this moderating effect as a function of peer group type. Findings from Lutz (2012) demonstrated that both self-reported friendship groups and peer-reported cliques influence children’s perceptions of peer group characteristics across the behavioral domains included in the current study. Therefore, peer group characteristics were conceptualized and calculated in the following three ways: 1) perceived friendship group characteristics, 2) aggregated SRFG characteristics, 3) and aggregated clique characteristics.

Two main findings emerged from our analyses. First, when examining the factors that predict self-reported social identities, children’s perceptions of their peer group’s characteristics emerged as more meaningful predictors than the aggregated self-reports of peer group members. This held true when examining the aggregated self-reports of the target child’s self-reported friendship group (SRFG) and peer-nominated clique. Research suggests that children and adolescent’s perceptions of their peer groups may not always reflect the actual characteristics of this group (Iannotti & Bush, 1992; McElhaney et al., 2008; Prinstein & Wang, 2005). Some researchers criticize self-reports due to research indicating that children’s self-reports are biased towards self-enhancement (Leung, 1996) or are simple reflections of the child’s personal characteristics via the false-consensus effect (i.e., Jaccard, Blanton, & Dodge, 2005; Patterson, Bigler, & Swann, 2010; Prinstein & Wang, 2005).
Some research findings suggest that children’s perceptions of their peer group’s characteristics are influenced by more than their own personal behavioral characteristics. For instance, a cross-sectional investigation of smoking behaviors among 8th grade students indicated that adolescents’ perceptions of their peers’ smoking behaviors were more strongly influenced by peers’ actual behaviors than the adolescents’ personal smoking behaviors (Unger & Rohrbach, 2002). In fact, contrary to the false consensus effect, when controlling for actual peer behavior, self-reported tobacco use did not significantly predict adolescents’ perceptions of peers’ smoking behaviors. Consistent with those findings, a short-term longitudinal study conducted by Baumgartner, Valkenburg, and Peter (2010) demonstrated that changes in adolescent’s (12-17 years of age) own risky online sexual behaviors did not influence corresponding changes in their perceptions of friends’ risky behaviors as the false-consensus effect would predict. Taken together, this data suggests that children’s perceptions are likely more sophisticated than mere reflections of their own characteristics and behaviors.

In addition to research highlighting the value of perceptions beyond the false-consensus effect, studies indicate that children’s perceptions of their friends’ behaviors tend to be more influential than the actual behaviors of friends. For instance, studies have found 4th and 5th grade children’s tobacco and illegal drug use to be more strongly influenced by perceptions of friends’ use than actual use (Iannotti & Bush, 1992). Prinstein and Wang (2005) found that adolescent perceptions of their friends’ behaviors mediated the relation between friends’ actual behaviors and adolescents’ own behaviors. In other words, children’s and adolescents’ interpretations of their friends’ behaviors play an important role in the how these behaviors come to influence the child’s own behaviors.
As highlighted by Prinstein and Wang (2005), subjective constructions of social experiences have very real consequences for the individual, and are therefore critical to consider when evaluating aspects of interpersonal adjustment such as social identity. Similar to findings by Prinstein and Wang (2005), a longitudinal study of thirteen year old students found that perceived peer acceptance moderated the relationship between actual acceptance and social adjustment over the span of a year (McElhaney et al., 2008). Specifically, these researchers found that positive perceptions of peer acceptance were related to positive social adjustment over time, regardless of actual levels of acceptance. Together, this evidence suggests that understanding children’s subjective perceptions is critical to understanding social-emotional outcomes.

A second important finding of this study was that personality may make identifying with the group easier for some children than for others. Based on prior research, we hypothesized that personality would be significantly related to social identity; however, the pattern of findings was not consistent with our expectations. Specifically, our results indicated that children who were rated by teachers as less agreeable and more intellectual/conscientious were more likely to report stronger feelings of social identity, whereas teacher-rated extraversion was not significantly related to social identity at all. Research with adult populations suggests that individuals possessing positive personality characteristics (i.e., high extraversion, high agreeableness, high openness, high conscientiousness, and low neuroticism) are more likely to experience positive social identity compared to those with more negative characteristics (Lee, Dean, & Jung, 2008; Lounsbury & DeNeui, 1996; Lounsbury, Loveland, & Gibson, 2003). The positive relation between intellect/conscientiousness and social identity in our data was consistent with these findings.
In contrast to expectations, however, we found that agreeable children were more likely to experience lower social identification with the peer group compared to children who were less agreeable. Some children, who are rated by teachers as disagreeable, may actually be perceived as popular among the peer group, thereby leading to strong feelings of social identity by these children. Research indicates that perceived popular children tend to be more aggressive (physically and relationally) and dominant compared to peers (Lease, Musgrove, & Axelrod, 2002; Parkhurst & Hopmeyer, 1998; Rose, Swenson, & Waller, 2004). Children who are perceived as popular by peers maintain more positive self-perceptions about their social relations relative to average peers (Lease et al., 2002), which likely leads to stronger feelings of social identity.

Finally, contrary to expectations, we did not find extraversion to be significantly related to children’s feelings of social identity. This is, perhaps, the most surprising finding of all, as sociability is a central component of extraversion. Among adult populations, extraversion has been related to feelings of social connectedness and sense of community (Lee et al., 2008; Lounsbury & DeNeui, 1996; Lounsbury et al., 2003). Although this connection has not been examined expressly among samples of children, data from the sociometric literature suggests that children who are well accepted by peers are more likely to possess characteristics such as sociability and cooperativeness (Coie et al., 1982; Newcomb et al., 1993). Based on our findings, it is clear that further investigation is needed to clarify the relation between personality and social identification with the peer group during middle childhood.

A third key finding of the current study was that perceived group norms significantly moderated the relation between individual-level variables and social identification with the peer group. More specifically, perceived group norms moderated the relation between self-reported
norm motivation and social identity for misbehavior and boyfriend/girlfriend norms, and approached significance for trend norms. In addition, perceived academic group norms moderated the relationship between teacher-rated agreeableness and social identity. Consistent with goodness-of-fit (Thomas & Chess, 1977) and ecological theories (Bronfenbrenner, 1977) of child adaptation, these findings indicate that for some behavioral domains, personal characteristics and group characteristics do not work in isolation to influence feelings of social identification. Rather, it is the interaction between individual-level and group-level traits that help predict social identity with the peer group.

In the case of misbehavior, our findings suggest that children with strong misbehavior motivations report high social identification with the peer group, regardless of the perceived group norms for misbehavior. For children with lower misbehavior motivation, however, feelings of social identification are highest when they also perceive their group to have lower misbehavior norms. In contrast, when well behaved children perceive their friendship groups as having strong misbehavior norms, these children report weaker social identification with this group.

In regards to boyfriend/girlfriend interest (BFGF) and trends (marginally significant), feelings of social identity were strongest when self-reported behavior motivation matched perceived group norms. These findings are consistent with the goodness-of-fit hypothesis (Thomas & Chess, 1977), suggesting that individual characteristics are only maladaptive when mismatched with the demands and expectations of the environment. This appears to be the case for BFGF and trend norms. For these behavioral domains, we found that children reported the lowest levels of social identity when their personal BFGF and trend motivations were at odds with the perceived norms of their peer group. Moreover, for BFGF, trend, and misbehavior
domains, there was no significant main effect for perceived group norms, suggesting that fit with the group is more important than the group norms themselves.

This finding supports the notion that, at least for some domains, homogeneity with the peer group is a central facet of social identity. As stated by Terry, Hogg, and White (1999), “social identities are cognitively represented as group prototypes that describe and prescribe beliefs, attitudes, feelings, and behaviors that optimize a balance between minimization of ingroup differences and maximization of intergroup differences (p. 228).” Thus, while conformity to the norms of groups with which an individual strongly identifies may increase homogeneity, homogeneity—particularly in regards to norm-relevant characteristics—likely also serves to strengthen social identification.

In contrast to misbehavior, trends, and BFGF behavior domains, perceived group norms did not moderate the relationship between self-reported behavior motivation and social identity for academic or sports domains. However, significant main effects for each predictor variable did emerge. Specifically, children reported stronger identification with the friendship group when they themselves possessed high motivation to engage in academic- and sports-related behaviors. Additionally, children reported stronger social identification when they perceived their friends to be competent in and value academics and sports. These findings are consistent with prior research indicating that children tend to report stronger feelings of social identity when they perceive themselves and their peers to possess favorable characteristics (Nesdale & Flessser, 2001; Patterson et al., 2010). In fact, Patterson et al. (2010) found that children who perceived themselves and their peer group to be incompetent in athletics or academics experienced lower feelings of social identification. These findings might indicate that athletic and academic competence may be universally valued during middle childhood. From this perspective, the
amount of personal- and group-level competence in these behavioral domains have an additive, rather than an interactive, effect on social identity.

Notably, group norms moderated the relationship between individual characteristics and social identity for behavioral domains that tend to be important for popularity among peers, including boyfriend/girlfriend interest, trends, and misbehavior (O’Sullivan & Meyer-Bahlburg, 2003; Smucker & Creekmore, 1972). These behaviors may be particularly salient during middle childhood and may become focal points of conversation and gossip (Eder, 1985). Research indicates that children tend to conform to their friends’ and peer groups’ norms regarding trends, romantic relationships, and misbehavior (Dishion et al., 1996; Espelage et al., 2003; Kandel, 1978; Lachance et al., 2003; Simon et al., 1992). Given the apparent social spotlight focused on these behaviors during middle childhood, it is reasonable to hypothesize that the fit between personal behavior motivations and group norms for trends, BFGF interest, and misbehavior may be more important for the development of social identity than other characteristics such as academics and sports, which tend to be more universally valued during this developmental period. Furthermore, academic-related behaviors and attitudes tend to be more strongly shaped by the influence of parents and teachers rather than by the influence of peers (Wentzel, 1998).

Limitations

The results of the current study should be interpreted with several limitations in mind. First, the failure of our study to detect significant interactions between individual characteristics and SRFG Norms/Clique Norms may be due, in part, to a methodological artifact. Group norms were derived by averaging self-reported norm motivation data across all members of the target child’s SRFG and Clique. Hogg and Reid (2006) advise against this practice, arguing that group norms exist on a collective social plane and are more than mere aggregates of individuals’
characteristics. Furthermore, the strength of the interaction between individual characteristics and perceived group norms may have been inflated due to the effects of common method variance (Campbell & Fiske, 1959), as each of these variables were derived from self-report.

The findings of the current study are further limited by the cross-sectional nature of the research design. Because a longitudinal design was not used, we are unable to determine whether the correspondence between individual and group characteristics cause increased feelings of social identity.

**Practical Implications and Future Directions.**

Within school settings, problem-solving models have become increasingly ecological in nature, shifting focus away from within-child factors (e.g., personality, skills, disabilities) toward contextual-factors, such as instructional methods, classroom management, and home-school collaboration. Although peer groups are an essential feature of this ecology, they are often overlooked within the problem-solving process. The findings of the current study highlight that children’s perceived fit within their peer groups relate to their feelings of social identity. Paired with a body of research that implicates positive feelings of social identification in strengthening motivation to conform to group norms, it is plausible to hypothesize that the relation between in-group homogeneity and social identity is reciprocal in nature. That is, social identity may motivate individuals to become more homogeneous with members of the peer group and this similarity may, in turn, serve to further strengthen individuals’ social identification. A longitudinal research design would be needed to test this hypothesis.

Given the known importance of social identification in the development of self concepts and social behaviors, parents and practitioners would be wise to consider the nature of children’s peer group ecologies and children’s level of social identification with this group during the
problem-solving process. Understanding these factors may help identify children who are at high risk for conforming to maladaptive group norms (e.g., misbehavior, smoking, drinking), and who are likely to develop social and psychological difficulties.
CHAPTER 4

DISSERTATION CONCLUSION

The overarching aim of this two-study dissertation was to investigate the role of peer groups in children’s social-emotional adjustment during middle childhood. In order to achieve this goal, two related studies were conducted using data from a sample of 455 third, fourth, and fifth grade students attending four elementary schools in the southeastern United States. Study one of this two-study dissertation examined the agreement between two methods commonly used to assess peer group membership among children, the self-reported friendship group (SRFG) and peer-reported cliques derived through Social Cognitive Maps (clique). A secondary aim of study one addressed which group, the SRFG or clique, children referenced when asked to evaluate the behavioral characteristics of their friend group. Study two of this dissertation explored person-level (i.e., personality and behavior motivation) and group-level (i.e., group norms) characteristics that predicted children’s self-reported feelings of social identity. The interaction between individual and group characteristics in predicating social identity was of particular interest.

Findings from study one indicated that the SRFGs and cliques shared moderate agreement; however, evidence of distinction between the methods also emerged. For instance, although approximately 65% of SRFG members also belonged to a child’s clique, only 45% of clique-mates also belonged to the child’s SRFG. Additionally, data indicated that a larger percentage of children had at least one reciprocated friendship represented within their SRFG
compared to cliques. Regarding the second question in study one, hierarchical regression analyses indicated that children’s perceptions of their friendship group’s characteristics were influenced by both the SRFG and clique. Taken together, the results of study one suggest that the SRFG and Clique may provide complimentary information when used in combination.

Findings from a series of hierarchical regression analyses conducted in study two indicated that for some behavioral domains, namely misbehavior, boyfriend/girlfriend relations, and trends (marginally significant), the perceived norms of the friend group significantly moderated the relationship between children’s self-reported norm motivations and their self-reported feelings of social identification with the group. Consistent with the goodness-of-fit model (Chess & Thomas, 1999; Thomas & Chess, 1977), results suggest that perceive fit with the friendship group impacts children’s social-emotional adjustment, as indicated by self-reported feelings of social identity.

Future research is needed in order to test the generalizability of these findings among other samples of children and adolescents. Building upon study one, a more extensive study of methodological agreement is needed to compare the numerous methods available for assessing children’s peer group belonging. A more comprehensive study of peer group methodology could help to systematically identify the overlap and distinction among methods and the strengths and weaknesses to each approach. Building up the findings in study two, a longitudinal research study is needed to help test whether the correspondence between individual- and group-level characteristics cause increased feelings of social identity among children and adolescents.
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APPENDIX A

Example of Agreement Calculation

*Example Data: SRFG Nominations and Clique Membership*

<table>
<thead>
<tr>
<th>Nominator</th>
<th>Clique Membership</th>
<th>SRFG Nominations</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>B, C</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>A</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>A, B, D, E</td>
</tr>
<tr>
<td>D</td>
<td>2</td>
<td>E</td>
</tr>
<tr>
<td>E</td>
<td>2</td>
<td>A, B, D</td>
</tr>
</tbody>
</table>

*Example Data: Clique Matrix, Symmetrical Triangular*

<table>
<thead>
<tr>
<th>Student</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

*Note. 1 = subjects are members of the same clique. 0 = subjects are not members of the same clique.*

<table>
<thead>
<tr>
<th>Nominee</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>-</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>1</td>
<td>1</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>D</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>E</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>-</td>
</tr>
</tbody>
</table>

*Example Data: SRFG Matrix, Asymmetrical Rectangular*

*Note. 1 = Nominator chose this Nominee as a SRFG member. 0 = Nominator did not choose this Nominee as a SRFG member.*
**Example: Total Sample Agreement, 2 x 2 Contingency Table**

<table>
<thead>
<tr>
<th>SRFG Group-mates</th>
<th>Clique Group-mates</th>
<th>1</th>
<th>0</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
<td>8&lt;sup&gt;a+b&lt;/sup&gt;</td>
</tr>
<tr>
<td>0</td>
<td>4&lt;sup&gt;c&lt;/sup&gt;</td>
<td>8&lt;sup&gt;d&lt;/sup&gt;</td>
<td></td>
<td>12&lt;sup&gt;b+d&lt;/sup&gt;</td>
</tr>
<tr>
<td>Totals</td>
<td>11&lt;sup&gt;a+c&lt;/sup&gt;</td>
<td>9&lt;sup&gt;b+d&lt;/sup&gt;</td>
<td></td>
<td>20&lt;sup&gt;a+b+c+d&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>Dyad identified as group-mates by SRFG and clique methods.  
<sup>b</sup>Dyad identified as group-mates by clique but not by SRFG method.  
<sup>c</sup>Dyad identified as group-mates by SRFG but not by clique method.  
<sup>d</sup>Dyad identified as not group-mates by SRFG and clique methods.

**Formula for Cohen's Kappa Calculation**

\[ \kappa = \frac{Pr(a) - Pr(e)}{1 - Pr(e)} \]

\[ Pr(a) = \text{observed agreement } [a + d / (a + b + c + d)] \]

\[ Pr(e) = \text{probability of random agreement} \]

**Kappa for Example Data**

\[ \kappa = \frac{.75 - .49}{1 - .49} \]

\[ \kappa = .5098 \]