The Peer Group as a Context for the Development of Young Adolescent Motivation and Achievement

Allison M. Ryan

This study investigated the peer group as a context for the socialization of young adolescents' motivation and achievement in school. Social network analysis was used to identify peer groups of adolescents in middle school whose members regularly interacted with each other ($N = 331$). Actual reports from these peer group members were used to assess peer group characteristics. Multilevel analyses indicated that peer groups did socialize some academic characteristics, controlling for selection factors. Students' peer group context in the fall predicted changes in their liking and enjoyment of school (intrinsic value) and their achievement over the school year. Students' peer group context was unrelated to changes in their beliefs about the importance of school (utility value) or expectancies for success over the school year.

INTRODUCTION

Adolescence marks the beginning of a downward trend in motivation and achievement in academics for many children (Anderman & Maehr, 1994; Carnegie Council on Adolescent Development, 1995; Eccles et al., 1993). This negative pattern, which occurs for many adolescents, has been of concern to psychologists and educators for some time. Many explanations have been offered to account for these negative changes. Some researchers have suggested that such declines are the result of the "storm and stress" that accompanies the developmental changes of adolescence. Recent theories, however, have stressed the context in which these developmental changes unfold as critical to understanding the changes during this stage of life. Over the last decade, a growing body of evidence has emerged that shows that the nature of the school and classroom context are critical to understanding changes in motivation and engagement during this stage of life (Anderman & Maehr, 1994; Eccles et al., 1993; Maehr & Midgley, 1996; Midgley, 1993; Simmons & Blyth, 1987).

The peer group is also an important context of development during adolescence. Less is known about how the peer group influences motivation and achievement (Blumenfeld, 1992; Eccles, Wigfield, & Schiefele, 1998; Kindermann, 1993; Kindermann, McCollam, & Gibson, 1996; Ryan, 2000). Schools and classrooms are inherently social places, and it seems likely that peers have an important influence on adolescent achievement beliefs and behaviors. Furthermore, notions of a teenage subculture that undermines the aims of parents and teachers abound in the popular press and have long been fodder for debate in scholarly work (Brown, 1990; Coleman, 1961; Hollingshead, 1949; Steinberg, 1996). However, norms and values of peer groups vary widely (Brown, 1990). The extent and nature of peer group influence on adolescent achievement beliefs and behaviors is likely to be complex. The goal of this study was to investigate how contextual differences between peer groups influence the development of students' motivational beliefs and achievement in school. An Expectancy × Value framework was used to conceptualize motivation (Eccles, 1983). In this study, *expectancy for success* referred to individuals' belief about how well they would do in school. Value was differentiated between adolescents' interest and enjoyment in their schoolwork (*intrinsic value*) and how important and useful they perceived their schoolwork to be (*utility value*). Grades were used to measure adolescents' achievement in school.

Recent reviews note that although the peer group is widely acknowledged as important, relatively little attention has been paid to how the peer group—compared with other aspects of children's experiences with peers (e.g., sociometric status)—influences child and adolescent development, (Magnussen & Statin, 1998; Rubin, Bukowski, & Parker, 1998). Magnussen and Statin (1998, p. 714) comment that "The wealth of studies on peer relations has been more informative about the relation between peer status and behavior . . . than about how the peer climate, over time, reinforces behavior; what characterizes the peer group and its stabilization; group processes; and how behavior develops in the peer group context ." One exception is research in the area of peer influence on adolescent risk-taking behavior (e.g., smoking, drinking, drug use, and sexual behavior). Such research indicates that the peer group is an important context for the development of adolescent beliefs and behaviors.

The aim of the present study was to extend our understanding of peer group influence by considering its effect on achievement-related outcomes in young adolescents.

Peer groups are likely to be particularly important during early adolescence, because they become a more prominent context during this stage (Brown, 1990). As children develop into adolescents, the amount of time they spend with their peers increases relative to that spent with their parents or other adults (Csikszentmihalyi & Larson, 1974). Peer relationships during this period are viewed widely as more intense, closer, and more influential than those formed during childhood (Berndt, 1982). Several studies have found an increase in individuals' need for conformity in the early adolescent years, followed by a steady decline in that need in later adolescence (Berndt, 1979; Steinberg & Silverberg, 1986). Thus, young adolescents may be particularly susceptible to peer group influence.

Rubin et al. (1998) comment that the neglect of research on peer groups is due to complex conceptual and methodological issues involved in studying peer groups. Indeed, extant research on socialization within peer groups is characterized by several conceptual and methodological difficulties that leave understanding of these processes incomplete. Specifically, four methodological issues have been problematic in prior research on peer group effects: (1) the confounding of socialization and selection effects regarding peer group homophily, (2) the measurement of peer groups, (3) the use of perceived versus actual reports to analyze peer group characteristics, and (4) the use of single-level analysis for multilevel data. The present investigation is the first to simultaneously address these four issues and, therefore, broadens understanding of socialization processes of achievement-related outcomes in the peer group context.

Homophily, Socialization, and Selection

Research has documented that adolescent peer groups exhibit similarity on many characteristics and attributes. The tendency of individuals to affiliate with others who are similar on various attributes is a social dynamic called homophily. Homophily of peer group beliefs and behaviors has been found across a wide range of outcomes. For example, peer groups have been found to be more homogeneous than the student body as a whole on reported frequency of smoking, drinking, drug use, and dating (Cohen, 1977; Ennett & Bauman, 1994; Kandel, 1978b; Urberg, Degirmencioglu, & Pilgrim 1997). Homophily in peer groups has also been found for academic characteris-

tics such as GPA (Epstein, 1983; Kandel, 1978b), college aspirations (Epstein, 1983; Hallinan & Williams, 1990; Kandel, 1978a), time spent on homework (Cohen, 1977), and general engagement in schoolwork (Kindermann, 1993). Two processes contribute to homophily: socialization and selection. Socialization refers to the tendency for friends to influence similar attributes in each other over time. Selection refers to the tendency for individuals to choose friends with similar attributes.

Socialization, or peer influence, most likely manifests itself in both direct and indirect ways. For example, social reinforcement may play a role. Achievement beliefs and behaviors that are discouraged or received negatively by the peer group are less likely to be displayed again by an individual. Conversely, achievement beliefs and behaviors that are encouraged or positively received by the peer group are more likely to surface again in the presence of one's peers. Adolescents report that they feel peer pressure regarding school involvement and such perceptions are significantly correlated with individual attitudes and behavior regarding school (Brown, Clasen, & Eicher, 1986). Peer influence is also likely to occur in less direct ways. For example, modeling processes are likely to be involved in peer influence (Hundleby & Mercier, 1987; Kandel & Andrews, 1987). Observing a friend's commitment to schoolwork or hearing a friend voice a belief about the meaning of school may introduce an individual to new behaviors and viewpoints. Finally, peer influence may occur through subtle means such as gossip, teasing, and humor. Gossiping about others, for example, is a means of clearly communicating unacceptable behavior without direct confrontation (Eder & Sanford, 1986). Thus, students share experiences and exchange information (in subtle and not so subtle ways), and out of these interactions among peer group members a context emerges with regard to the norms, values, and standards that concern academic motivation and achievement. This shared peer group context is likely to influence adolescent motivation and engagement in school.

The finding that adolescent peer groups are similar with regard to various characteristics, however, might also be a result of selection. It may be that adolescents select friends who are similar to them to begin with. Much of the research that examines similarities among friends has used data from one point in time and therefore cannot elucidate the processes at work behind the documented similarity (as noted in reviews by Berndt, 1992; Epstein, 1983; Hartup, 1993). Longitudinal studies that have addressed the relative contributions of selective association and peer influence, however, have found that both processes con-

tribute to the observed similarity among friends (Cohen, 1977; Downs, 1987; Ennett & Bauman, 1994; Epstein, 1983; Kandel, 1978a; Kindermann, 1993; Urberg, Cheng, & Shyu, 1991). The sharing of certain characteristics contributes to friendship formation, and this similarity is strengthened further by continued association. At any given time, homophily of peer groups is due to both selection and socialization. Thus, longitudinal data are needed to differentiate the effects of socialization and selection. The present study examined the influence of peer group characteristics at Time 1 on changes in motivation and achievement from Time 1 to Time 2 to provide additional data supporting the hypothesis that the peer group is a context for the socialization of these academic characteristics.

Definition and Measurement of Peer Groups

The literature on peer relations in adolescence has lacked conceptual clarity, in part due to the varied usage of terminology. Brown (1990) notes that the term "peer group" has been applied to everything from interactions with best friends to individual's ties with their entire age cohort. In this study, the term peer group is used to refer to an individual's small, relatively intimate group of peers who interact with each other on a regular basis (often referred to as a clique; Brown, 1990). Most studies of peer influence have not measured peer groups according to this definition. Researchers have examined peer influence in the context of best friend pairs (e.g., Kandel, 1978a) or crowds of adolescents (e.g., Brown, Eicher, & Petrie, 1986). As defined in this article, peer groups encompass more than a best friend for most students. This definition of peer group is also distinct from the notion of "crowds," which refers to large collectives of similarly stereotyped individuals who are grouped together because of reputation-based traits (e.g., "jocks," "brains," or "druggies" and not because they spend time together).

Another way in which researchers have investigated peer groups is to use students' self-nominated friends, typically by asking for a list of their three closest friends (e.g., Berndt & Keefe, 1995; Cohen, 1977; Epstein, 1983). This practice arbitrarily restricts the number of friends in an individual's peer group, however. Generally, peer groups or cliques are conceptualized as having 2 to 12 members, with an average of 5 or 6 members (Steinberg, 1999). Empirical investigations have found that the average peer group of 8th and 10th grade students consist of 5 students (Ennett & Bauman, 1994). One investigation found that most peer groups of 6th- through 12th-grade students consisted of 5 to 8 students (Urberg et al., 1997).

Furthermore, when the number of friends was specified, adolescents with less than three friends may have felt compelled to include the names of other students who were not actually their close friends (Hallinan, 1981; Rubin et al., 1998).

Peer groups need to be clearly identified to effectively investigate peer group influence on motivation and achievement. Social network analysis techniques have been used to identify peer groups (Ennett & Bauman, 1994; Urberg et al., 1995; Wasserman & Faust, 1994). These techniques use participants' reports on their relationships with other individuals in a given network to identify subgroups among whom there are relatively strong and intense ties. In the present study, network analysis was used to identify peer gropups in a middle school based on adolescents' reports of their friendships. The use of social network methodology should provide a more complete picture of socialization processes in adolescent peer groups. Social network analysis techniques have been used to examine peer group influence with respect to adolescents' smoking (Ennett & Bauman, 1994; Urberg et al., 1997), adolescents' drinking (Urberg et al., 1997), young children's aggressive behavior (Cairns, Cairns, Neckerman, Gest, & Gariepy, 1988), and young children's and adolescents' engagement in school (Kindermann, 1993; Kindermann, McCollam, & Gibson, 1996).[1] Social network analysis has not been used to examine adolescent motivation and achievement in school.

Perceived versus Actual Reports

Many studies of peer group influence on adolescents' behavior have measured peer group characteristics using adolescents' perceptions of their friends' behavior (perceived reports) rather than asking the friends to report on their own behavior (actual reports). This strategy is undermined by studies showing that perceived reports are not necessarily accurate, and may consist of individuals' projections of their own values onto others (see Elliot & Voss, 1974; Ennett & Bauman, 1993; Fisher & Bauman, 1988). By comparing perceived and actual reports, Elliot and Voss (1974) found that delinquent youth overestimated their friends' delinquent behavior, whereas nondelinquent youth underestimated their friends' delinquent behavior. Similarly, researchers have found that adolescent's perceptions of others' alcohol use is exaggerated in the direction of their own attitudes and behav-

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[1]Cairns et al. and Kindermann and colleagues used observer reports in their analyses, whereas Urberg et al. and Ennett and Bauman used students' self-reports.

ior (Davies & Kandel, 1981; Fisher & Bauman, 1988). Such research indicates that adolescents overestimate how similar they are to their friends. Thus, by using perceived reports, studies generate inflated correlations between respondents' and friends' behavior.

Researchers often justify the use of perceived reports by reasoning that what adolescents think their friends do is more influential than what the friends actually do. Perception, is vital to influence, and it may be the subjective (albeit less accurate) report that is key to understanding influence. This line of reasoning assigns the cause of adolescent behavior to adolescents' perceptions and not to actual peer group characteristics (Bauman & Ennett, 1996). Both perceived and actual reports are informative, but they target different processes related to peer group influence. The purpose of this investigation was to discover whether actual peer group characteristics (rather than personally construed peer group characteristics) influence the development of adolescent achievement beliefs and behaviors. As described previously, students interact and exchange information with other students in the peer group, and such interactions influence adolescent motivation and engagement in school. Actual reports are more appropriate than perceived reports to investigate this conceptualization of socialization in the peer group context.

Multilevel Analyses

Multilevel methods have not been used to examine peer group effects, even though many research questions inherently involve individuals nested within groups. As described previously, there is a shared experience in the peer group with regard to the norms, values, and standards that concern motivation and achievement in school. This shared context among peer group members affects each individual in the peer group. The nested structure of students within peer groups produces a different variance at each level. Typically, research that has used peer group characteristics to predict student outcomes has used a single-level model of these relationships using ordinary least squares (OLS) regression analysis. In this type of analysis, variables from different levels (student and peer group) are included in the regression equation, and thus the variance at each level is not estimated separately. Hierarchical Linear Modeling (HLM) is a statistical technique that has several advantages over OLS regression that make it ideally suited to investigate the shared peer group context (Bryk & Raudenbush, 1992). As described by Arnold (1992, p. 58), HLM "estimates linear equations that explain out-comes for members of groups as a function of the characteristics of the groups as well as the characteristics of the members." HLM can model the between- and within-group variance at the same time, and thus can provide more accurate estimates of student outcomes (Arnold, 1992). In this study, HLM was used to partition the variance of student motivation and achievement into within- and between-group components. This study explored whether the proportion of the total variance that lies systematically between peer groups can be explained by the shared peer group context. HLM has been used increasingly over the last 10 years to investigate how the school and, to a lesser extent, the classroom context can influence student outcomes (e.g., Lee & Bryk, 1989; Ryan, Gheen, & Midgley, 1998). These well-established techniques for assessing group effects were extended here to a different group—the peer group—to further our understanding of how the shared peer group context influences young adolescents' motivation and achievement.

Summary

In summary, this study investigated the peer group as a context for the socialization of adolescent motivation and achievement in school. The peer group is conceptualized as an individual's smaller, relatively intimate group of friends who interact with each other on a regular basis. In this context, socialization is conceptualized as occurring through frequent interactions, shared experiences, and exchanged information among group members. In line with this conceptual framework, social network analysis is used to identify subgroups of adolescents in a school who regularly interact with each other. Actual reports of these peer group members are used to assess peer group characteristics. Longitudinal data are used to disentangle selection and socialization effects. Multilevel analyses are used to assess group effects, which is appropriate given the nested nature of the data. Using this conceptual and analytic approach, two research questions were posed:

Research Question 1: Do changes in motivation and achievement vary systematically between peer groups? It is hypothesized that even when prior motivation and achievement characteristics of participants are taken into account, young adolescents' motivation and achievement vary between peer groups.

Research Question 2: Do characteristics of adolescents' peer groups assessed in the fall predict changes in adolescents' motivation and achievement across their first year in middle school? It is hypothesized that the motivation and achievement context of

young adolescents' peer groups in the fall predicts differences between peer groups in the development of motivation and achievement across the school year.

METHOD

Participants

The participants in this study were seventh-grade students from an urban middle school. All students had made the transition to middle school at the end of sixth grade. The school serves an economically and ethnically diverse community. All seventh-grade students in the school were recruited for the study. Parental permission, required for students to participate, included access to students' school records. Of the 403 seventh-grade students, 82% received permission, resulting in a sample of 331 students in the fall. Three hundred and twenty-one participated in the spring (10 students were lost due to students moving out of the school district or chronic absenses). The sample, which was 68% White, 19% Hispanic, 10% African American, and 3% Asian American, and included 158 boys and 173 girls.

Procedure

Data for this study were collected by survey in October of 1996 (Time 1) and May of 1997 (Time 2). Surveys were administered to students in their classrooms. Instructions and items were read aloud by the survey administrator while students read along and used pencils to fill in the surveys. Students were told that the survey was not a test, that there were no right or wrong answers, and that the purpose of the survey was to find out what seventh-grade students thought about school and this was a chance for them to express their opinions. Students were assured that the information in the survey would be kept confidential. In addition, they were told that filling out the survey was voluntary, and if at any point they wanted to stop, they could do so.

Individual Measures of Motivation and Achievement

Motivation. Items developed by Eccles (1983) were used to assess students' expectancy for success and values regarding school. The response format for all items in the survey was a 5-point scale. Expectancy for success referred to students' beliefs about how well they would do in school. A single item was used to measure students' expectancies: How well do you expect to do in school this year? (1 = not at all well, 5 = very well).

A differentiation was made between intrinsic value and utility value. Intrinsic value referred to adolescents' interest and enjoyment in their schoolwork (e.g., "How much do you like doing schoolwork?" 1 = a little, 5 = a lot). Utility value referred to adolescents' perceived importance and usefulness of their schoolwork (e.g., "In general, how useful is what you learn in school?" 1 = not at all useful, 5 = very useful). All value items were entered into a single factor analysis and results supported the distinctiveness of each scale. Thus, two scales were created for value: intrinsic value (three items, $\alpha = .85$ at Time 1 and $\alpha = .86$ at Time 2) and utility value (three items, $\alpha = .60$ at Time 1 and $\alpha = .72$ at Time 2).

Achievement. Students' grades in the academic core subjects (English, math, science, and social studies) for the final quarter of sixth grade, first quarter of seventh grade, and final quarter of seventh grade were collected from their school records. The grades were coded 00 through 99, corresponding to the actual numeric scores given to students on their report cards. An overall grade point average (GPA) was computed by calculating the arithmetic mean of the scores in the four core academic subjects for each student.

Peer Group Motivation and Achievement Characteristics

Peer group motivation and achievement scores were calculated by averaging the motivation and achievement scores of individual peer group members at Time 1. Peer group scores were calculated for expectancy for success, intrinsic value, utility value, and achievement.

Measurement of Peer Groups

Adolescents' peer groups within school were measured by asking students to list their closest friends, described to students as "the friends you hang around with and talk to the most." Ten spaces were provided but students were told that they could list as many or as few friends as they wanted. At both time points, approximately 3% of students did not list any friends; and approximately 7% of students listed more than 10 friends. On average, students listed between 4 and 8 friends. Approximately half of all friendship choices were reciprocated.

A social network analysis computer program (UCINET IV, Version 1.64; Borgatti, Everett, & Freeman, 1996) and sociograms were used to assign individuals to peer groups on the basis of friendship patterns. A primary purpose of social network analysis is to identify cohesive subgroups of individuals in a

given social network. Cohesive subgroups are "subsets of actors in a network among whom there are relatively strong and intense ties" (Wasserman & Faust, 1994, p. 249). The identification of cohesive subgroups hinges on the notion that social forces operate through direct contact among subgroup members, indirect contact transmitted via intermediaries, and relative cohesion within as compared to outside the group. In this study, social network analysis was used to identify subgroups (peer groups) of students in one middle school, based on students' friendship nominations.

The goal was to detect peer groups that consisted of students who interacted more with each other than with individuals in other groups. The extent of students' interaction with others was presumed to be due both to reciprocated friendships and common friendships. Reciprocated friendships were considered direct links. Common friendships represented indirect links. Thus, in the following scenario— Amy chooses Kate, Val chooses Kate, and Kate chooses Amy and Val—there would be two direct links (between Kate and Amy and Kate and Val) and one indirect link (between Amy and Val). The following criteria were used to determine peer groups: (1) ≥ 50% of an individual's direct links had to be within the peer group, (2) a path (direct or indirect) had to exist from each member to every other member of the peer group, and (3) there could not be more than five indirect paths from any one member. If an individual had only one link to the peer group, however (which only happened when an individual had one or two mutual friendship nominations), the number of indirect paths from that individual to all other members of the group could not exceed three. These criteria were consistent with those of other studies using social network analysis to identify adolescent peer groups (Ennett & Bauman, 1994; Urberg et al., 1997). The UCINET computer program generated lists of peer groups that met these criteria. The UCINET program's procedure for generating subgroups is to consider one criterion at a time. Thus, several lists of peer groups were generated, each of which was based on one of the specified criteria. A large sociogram was drawn and, each peer group and all individuals within each peer group were independently checked against each list, to ensure that they met the multiple criteria.

Individuals had one of five possible positions in the social network: (1) clique member, (2) loose group member, (3) dyad member, (4) isolate, or (5) liaison. A *clique* consisted of three or more members with direct links between all of the members. *Loose groups* were variable in their degree of interconnectedness but were less interconnected than cliques. *Dyads* con-

sisted of only two members. *Isolates* were individuals who had no reciprocated friendship choices in the school. Cliques, loose groups' and dyads were considered peer groups. Isolates were excluded from analyses of peer group effects.

Students could be members of only one peer group. If students had links to multiple peer groups, they were put in the peer group that contained the majority of their direct and indirect links. Some students could not be assigned to one peer group because they had an equal number of links to multiple peer groups. These students were considered *liaisons* because they did not have primary membership in any individual peer group but rather provided a link between multiple peer groups. For example, a liaison might have three links in three different groups. Liaisons were excluded from analyses of peer group effects, because the methodology used to analyze the data could only be applied to independent groups.

Analysis Plan

Measuring change over time. A covariance approach was used to explore change in young adolescents' motivation and achievement over the school year. That is, the analytic models used Time 2 measures of motivation and achievement while controlling for Time 1 measures of motivation and achievement.

Multilevel analyses. Peer group influence on the development of motivation and achievement was investigated using multilevel analysis techniques (HLM; Bryk & Raudenbush, 1992). The multivariate models in the present study had a two-level hierarchical structure, with individual students nested in peer groups. There were three steps in the multilevel analyses: (1) estimating the fully unconditional models, (2) estimating the within-group models, and (3) estimating the between-group models. First, the fully unconditional models were estimated, which was equivalent to what one would find using unbalanced one-way random-effects ANOVAs, in which peer group is a random factor with the varying number of students per peer group. The fully unconditional models were used to partition the total variance in the outcome variable into within- and between-group components and to estimate the proportion of the total variance that lies systematically between groups. The unconditional models thus indicated the homophily of peer groups with regard to motivation and achievement. Next, within-group models are run to estimate regression coefficients in each peer group. At this level, individual effects were investigated. Regression equations for each peer group predicted student motivation and achievement as a function of stu-

dents' prior motivation and achievement within each peer group. The intercepts in these equations varied randomly across peer groups. These randomly varying intercepts were then used as the dependent variables in the between-group models to be simultaneously explained as a function of contextual differences between peer groups. Thus, in the between-group models, the unit of analysis was the peer group and the independent variables were the peer group context measurements at Time 1. At this level, the effect of the fall peer group context on changes in the development of motivation and achievement over the seventh-grade school year was examined. (For more information about HLM, see Bryk & Raudenbush, 1992 or Kreft & de Leeuw, 1998; for an example of a study that employed a similar analytic approach to examine contextual effects on student development, see Lee, Loeb, & Lubeck's 1998 investigation of classroom effects on children's cognitive development across the school year.)

RESULTS

Several sets of analyses were conducted to investigate the peer group as a context for the socialization of young adolescent academic motivation and achievement. First, a description of the peer groups is presented. Second, results from preliminary analyses of the motivational and achievement variables are presented. Finally, results from the multilevel analyses, which proceeded in three steps (unconditional models, within-group models, and between-group models), are presented.

Description of Peer Groups

At the beginning of the school year, 251 seventh graders (of the 331 who completed surveys) were situated in 52 peer groups. The size of the peer groups ranged from 2 to 11 members ($M = 4.8$). On average, 83% of students' direct links, or reciprocated friendships, were in their peer group. The majority of peer groups were homogeneous with regard to gender ($n = 48$, or 92%) and ethnicity ($n = 28$, or 54%). There were 50 isolates (students who did not have any reciprocated friendship choices; 15% of the total sample). Although some of these students may have been true social isolates, some may have had friends in school who did not participate in the study, friends in other grades, or friends in contexts other than school. There were no ethnic differences, but males ($n = 31$) were more likely than females ($n = 19$) to be isolates, $\chi^2(1, N = 331) = 4.804$, $p < .05$. There were 18 students who had one reciprocated friendship but who were such

marginal members that they were not considered as members of that peer group for the purposes of this study (see criteria for determining peer groups, described previously). There were 12 liaisons (students who did not have primary membership in any one peer group). In the fall, liaisons had between two and five direct links (reciprocated friendships) to various peer groups ($M = 2.64$). There were no gender or ethnic differences among the marginal students or liaisons.

At the end of the school year, 269 seventh graders (of the 321 who completed surveys) were situated in 55 peer groups.[2] The number of members in these groups ranged from 2 to 16 ($M = 4.9$). On average, 83% of students' direct links, or reciprocated friendships, were in their peer group. The majority of peer groups remained homogeneous with regard to gender ($n = 44$, or 80%) and ethnicity ($n = 32$, or 58%). There were 36 isolates (students who did not have any reciprocated friendship choices). As was found in the fall, there were no ethnic differences, but males ($n = 25$) were more likely than females ($n = 11$) to be isolates, $\chi^2(1, N = 321) = 4.63$, $p < .01$. There was one student who had one reciprocated friendship but was too marginal to be considered a peer group member and there were 12 liaisons (students who did not have primary membership in any one peer group). Liaisons had between two and five direct links to various peer groups ($M = 2.92$). As was found in the fall, there were no gender or ethnic differences among liaisons.

Two hundred and seven students were situated in a peer group at both the beginning and end of the school year. Adolescents' peer group membership in the fall was compared with their peer group membership in the spring. For each student, the number of members in their peer group that remained at Time 2, the number that joined the peer group, and the number that left the peer group during the school year were analyzed. Sixty-four percent of the students had at least one stable peer group member, that is, one member from Time 1 who remained in the group at the end of the school year. Forty percent of the students had at least two stable peer group members from the beginning to the end of the school year. Almost all students experienced the addition and loss of peer group members over the school year (90% and 95%, respectively).

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[2] It is important to remember that in the HLM analyses, students' peer group context at Time 1 was used to predict changes in motivation and achievement from Time 1 to Time 2. Description of peer groups at Time 2 and change in peer groups from Time 1 to Time 2 are presented here because complete information about the peer groups in this young adolescent sample is important for a full appreciation of the peer group as a context for the socialization of motivation and achievement.

Some recent studies have defined a peer group as stable if at least 50% of the members at Time 1 were still together at Time 2, or if the membership at Time 2 was at least 50% of the membership at Time 1 (Ennett & Bauman, 1994; Urberg et al., 1997). Defined this way, 37% of adolescents in this sample were in stable groups from fall to spring of their seventh-grade school year. This is comparable to Urberg et al.'s finding (32%), but lower than Ennett and Bauman's finding that 67% of high school peer groups were stable during a 1-year period.

Preliminary Analyses of Motivational and Achievement Variables

Descriptive statistics for individual student characteristics are shown in Table 1.

Changes in motivation and achievement. Mean level changes were examined using paired sample t tests. Across all motivation measures, there was a decrease from the beginning to the end of the school year. In general, students had lower expectancies for success and saw less value in their work at the end of the year compared with the beginning of the year. Thus, by the end of the school year, students in general showed a more negative motivation profile. From the end of sixth grade to the end of seventh grade (over the transition to middle school), students' grades declined, perhaps due to loss of motivation or to more stringent grading practices in middle school than in elementary school.

Gender differences in motivation and achievement. Gender differences were examined using independent sample t tests. Girls reported higher levels of intrinsic value ($M_{fall} = 3.11$, $M_{spring} = 2.96$) compared with boys ($M_{fall} = 2.83$, $M_{spring} = 2.57$) at the beginning and end of the school year, $p < .01$ and $p < .001$, respectively. Girls also reported higher levels of utility value ($M_{fall} = 4.54$, $M_{spring} = 4.54$) compared with boys ($M_{fall} = 4.37$, $M_{spring} = 4.13$) at the beginning and end of the school year, $p < .05$ and $p < .01$, respectively. Interestingly, while girls valued their schoolwork more, neither their expectancies for success nor their grades differed from those of boys at either time point. Thus, higher value did not translate into better grades for girls and this was in line with girls' expectancies regarding their grades.

Ethnic differences in motivation and achievement. Ethnic differences were examined using one-way ANOVAs and Scheffe's tests. Sample size was not sufficient to examine Asian American students. In the fall, Hispanic students saw less utility value in their schoolwork ($M = 4.19$) than did White students ($M = 4.52$) and African American students ($M = 4.55$) $p < .05$. Hispanic students also reported lower expectancies for success in school ($M = 3.98$) than did African American ($M = 4.22$) or White students ($M = 4.29$). By the spring, all students reported similar utility value and expectancies for success. There were no ethnic differences at either time point in students' reported intrinsic value. Hispanic and African American students had lower grades than did White students at both time points, Hispanic: $M_{6th} = 83.18$, $M_{7th} = 75.06$; African American: $M_{6th} = 83.34$, $M_{7th} = 75.80$; White: $M_{6th} = 87.15$, $M_{7th} = 83.01$, $p < .05$. By the end of seventh grade the average letter grade for Hispanic and African American students was a C, whereas the average grade for White students was a B.

Table 1   Means, Standard Deviations, and Zero-Order Correlations for Individual-Level Variables

	M (SD)	1	2	3	4	5	6	7	8
Time 1[a]									
1. Expectancy for success	4.23 (.79)								
2. Intrinsic value	2.98 (.93)	.37**							
3. Utility value	4.45 (.58)	.41**	.47**						
4. Achievement	85.64 (7.04)	.31**	.08	.23**					
Time 2									
5. Expectancy for success	3.86 (.98)	.40**	.29**	.34**	.28**				
6. Intrinsic value	2.76 (.96)	.19**	.61**	.30**	.02	.37**			
7. Utility value	4.24 (.70)	.33**	.38**	.48**	.22**	.51**	.52**		
8. Achievement	80.81 (11.45)	.27**	.18**	.22**	.61**	.35**	.21**	.33**	

Note: Paired t tests indicated that all three motivation measures and achievement scores significantly decreased from Time 1 to Time 2, $p < .001$.

[a] Time 1 measurements are from the fall of students' seventh-grade school year, except for achievement scores, which are from the spring of students' sixth-grade year. All Time 2 measurements are from the spring of students' seventh-grade school year.

** $p < .01$.

Stability of the peer group and motivation and achievement. Mean level differences on the motivation and achievement variables were between students who did and those who did not belong to a stable peer group (using Ennett & Bauman, 1994, and Urberg et al., 1997, criteria described previously) were examined. There were no significant differences. During seventh grade, it seemed to be the normal course of social development for students' friendships to fluctuate: this was neither a protective nor a risk factor for academic adjustment. Having a stable or unstable peer group was unrelated to motivation and achievement outcomes.

Correlations among motivation and achievement variables. Bivariate correlations among variables measured at the individual level are shown in Table 1. First, the correlations among the motivation and achievement variables at each time point indicated that students high on one aspect of motivation/achievement tended to be high in other areas of motivation/achievement. For example, students with high expectancies for success tended to value schoolwork more and have higher grades. Second, there was relatively high stability of motivation across the seventh-grade school year, r ranged from .40 to .61. GPA was also relatively stable across the transition (from the end of sixth grade to the end of seventh grade), $r = .61$. Thus, the high achievers in elementary school tended to be the high achievers in middle school.

The means, standard deviations, and correlations for peer group motivation and achievement characteristics at Time 1 are shown in Table 2. The correlational patterns seen at the individual level were also present at the peer group level. There were moderate to high correlations among the different indices of motivation and achievement at both time points, r ranged from .36 to .58. Thus, peer groups that were high on one aspect of motivation were high on other aspects of motivation. Further, peer groups that reported high levels of motivation tended to be the higher achievers.

Table 2   Means, Standard Deviations, and Zero-Order Correlations for Peer Group Variables at Time 1

	M (SD)	1	2	3	4
1. Expectancy for success	4.22 (.53)				
2. Intrinsic value	3.00 (.59)	.53**			
3. Utility value	4.44 (.39)	.58**	.55**		
4. Achievement	80.14 (8.28)	.46**	.36**	.57**	

Note: Time 1 measurements are from the fall of students' seventh-grade school year, except for achievement scores, which are from the spring of students' sixth-grade year. There were 52 peer groups in the fall.
**$p < .01$.

Multilevel Analyses

Unconditional models. HLM (Bryk, Raudenbush, & Congdon, 1994) was used to partition the total variance in the outcome variables into their within- and between-group components (estimated with a fully unconditional model). The intraclass correlation (ICC) indicates the proportion of the total variance in the outcome that is between peer groups. The ICCs indicated peer group homophily with regard to academic variables; in other words, young adolescent peer groups did exhibit similarity to each other with regard to motivation and achievement in school. Adolescents with similar levels of motivation and achievement associated with each other. Motivation and achievement varied between peer groups. More than a third of the variance in achievement (37%) was between peer groups in the fall. Although not quite so high, more than 10% of the variance in the motivation variables was between peer groups (expectancy for success, 13%; intrinsic value, 12%; and utility value, 18%). Similarly, in the spring, close to a third of the variance in achievement (28%) was between peer groups and more than 10 % of the variance in the motivation variables was between peer groups (expectancy for success, 14%; intrinsic value, 15%; and utility value, 13%). The ICCs thus provided preliminary evidence to support the hypothesis of Research Question 1, that motivation and achievement vary between peer groups.

Within-group models. The within-group models, which more fully addressed Research Question 1, estimated students' motivation and achievement at Time 2 as a function of their motivation and achievement at Time 1. Separate within-group models were created for the motivation and achievement measures at the end of the school year (expectancy for success, intrinsic value, utility value, and achievement). Main effects for gender and ethnicity were also investigated. Neither gender nor ethnicity was related to any motivation or achievement outcomes at the end of the school year, with prior motivation and achievement in the model. Although gender and ethnicity were related to motivation and achievement at both time points, they did not influence change in the average levels of motivation and achievement. Further, controlling for gender and ethnicity did not change the pattern of effects, and therefore, these factors were not included in the final models.

In the final within-group models presented in Table 3, the intercepts, or peer group averages, of Time 2 motivation and achievement were adjusted for the characteristics of individual adolescents in each peer group and modeled as random parameters ("free" in

Table 3   Hierarchical Linear Within-Group Models for Motivation and Achievement Variables

| | Dependent Variables at Time 2 | | | |
	Expectancy for Success	Intrinsic Value	Utility Value	Achievement
Average intercept ($\gamma00$)	3.88***	2.73***	4.26***	81.85***
Individual motivation/ achievement at Time 1 ($\gamma10$)	.45***	.59***	.52***	.92***
Parameter variance (τ)	.091**	.050*	.058***	13.850***

Note: Time 1 measurements are from the fall of students' seventh-grade school year, except for achievement scores, which are from the spring of students' sixth-grade year. Time 2 measurements are from the spring of students seventh-grade school year.
* $p < .05$; ** $p < .01$; *** $p < .001$.

HLM). Time 1 motivation and achievement scores were included as controls and centered around the grand means (i.e., the means for all adolescents in the study). This was appropriate, because these parameters (the stability coefficients of motivation and achievement from Time 1 to Time 2) were not the focus of the study and were not examined in the between-group models. Further, it was prudent because the within-group sample size was small (about 5 students). With this centering decision, the intercepts could be interpreted as the peer group motivation and achievement averages at Time 2, adjusted for Time 1 motivation and achievement characteristics.

Not surprisingly, for all outcomes, students' motivation and achievement at Time 1 was a strong, significant predictor of their motivation and achievement at Time 2. This indicated that students' expectancies for success and values were relatively stable across the school year, γs ranged from .45 to .59, $ps < .001$. Students who reported high levels of motivation in the fall were more likely to report high levels of motivation in the spring. Achievement was also stable from the end of sixth grade to the end of seventh grade ($\gamma = .92$). Students who were high achievers at the end of sixth grade were more likely to be high achievers at the end of seventh grade.

Additionally, the within-group models showed that the level of student motivation and achievement at the end of the school year varied across peer groups (the intercepts within each peer group), controlling for students' prior motivation and achievement: parameter variance ranged from .05 to .09 for motivation variables, $p < .05$, and parameter variance = 13.85 for achievement, $p < .001$. Thus, although there was moderate to high stability in adolescent motivation and achievement over time, there was still significant variability between peer groups in these residual outcomes. This further supports the hypothesis for Research Question 1: Motivation and achievement do vary between peer groups, even when adolescents' prior motivation and achievement are taken into account. Accordingly, the goal of the between-group models was to explain this variation in motivation and achievement between peer groups.

Between-group models. The final between-group HLM model investigated differences between peer groups. This model addressed Research Question 2: Do characteristics of adolescents' peer groups in the fall predict changes in their motivation and achievement across their first year in middle school? In the between-group models, the intercepts in the within-group equations became the dependent variables that were modeled as a function of peer group characteristics. The within-group control (students' Time 1 motivation and achievement) was included in the two-level HLM model. Thus, the outcome was change rather than status. A separate between-group model was estimated for each outcome (expectancy for success, intrinsic value, utility value, and achievement). The possibility that peer group influence was moderated by gender, ethnicity, or stability of the peer group was investigated. In all cases, these interactions were not significant. Thus, the final between-group models were rerun without the nonsignificant gender, ethnicity, or stability interaction terms.

As noted previously, students' prior motivation and achievement were centered around the grand means at Level 1. Centering has important implications for how the Level 2 coefficients are interpreted. In this study, a particular type of Level 2 effect—a contextual effect—was investigated. Contextual effects occur when the aggregate of an individual-level characteristic is related to the outcome, even after controlling for the effect of the individual characteristic. When the individual-level characteristic is centered around the grand mean, the contextual effect is esti-

mated directly. In all analyses in this article, individual-level motivation and achievement variables were centered around the grand mean and, thus, coefficients associated with peer group effects represent contextual effects (Bryk & Raudenbush, 1992).

Centering the Time 1 individual-level motivation and achievement variables around the grand mean was also appropriate given the focus on assessing change over time. The best predictor of motivation and achievement at any point in time is prior motivation and achievement. To truly assess change, any variance due to prior levels of motivation and achievement had to be partialled out. Centering an individual-level variable around the grand mean is a conservative approach and diminishes much of the variance between groups. It was appropriate to take this conservative approach to ensure that the models were truly predicting change in the peer groups' average levels of motivation and achievement over time.

The results from the between-group HLM models that examined the variation between peer groups with regard to change in average levels of motivation and achievement are shown in Table 4. The peer group motivation context had an effect on group differences in the development of intrinsic value and achievement. That is, peer group intrinsic value in the fall predicted

peer group differences in changes in intrinsic value over the school year, $\gamma = .29$, $p < .05$, and peer group achievement in the fall predicted peer group differences in changes in achievement over the school year, $\gamma = .56$, $p < .001$. Peer group utility value in the fall had no effect on peer group differences in changes in utility value. That is, once students' individual utility value in the fall was taken into account, the average level of students' utility value within each peer group had no additional influence on this facet of motivation. Similarly, peer group expectancies for success in the fall had no effect on peer group differences in changes in expectancies for success. The between-group models accounted for 46% of the variance between peer groups in average intrinsic value and 98% of the variance between peer groups in average achievement. These values reflect the proportional decrease in estimates of parameter variance in the between-group models as compared with the within-group models.

DISCUSSION

This study supported the contention that peer group context affects the development of young adolescents' achievement beliefs and behaviors. Previous

Table 4   Hierarchical Linear Between-Group Models for the Effects of Peer Group Motivation and Achievement on Change in Adolescents' Motivation and Achievement

	Dependent Variables at Time 2			
	Expectancy for Success	Intrinsic Value	Utility Value	Achievement
Average intercept ($\gamma 00$)	3.86***	2.72***	4.26***	81.23***
Effects of peer group motivation/ achievement at Time 1 ($\gamma 01$)[a]	.26[+]	.29*	−.08	.56***
Control				
Individual motivation/ achievement at Time 1 ($\gamma 10$)	.40***	.53***	.53***	.66***
Parameter variance (τ)	.084**	.027*	.060***	.290
% Variance explained[b]	8	46	0	98

Note: At the individual level, Time 1 measurements are from the fall of students' seventh-grade school year, except for achievement scores, which are from the spring of students' sixth-grade year. At the peer group level, Time 1 measurements are from the fall of students' seventh-grade school year, and Time 2 measurements are from the spring of students' seventh-grade school year.

[a] Contextual effects occur when the aggregate of an individual-level characteristic is related to the outcome, even after controlling for the effect of the individual characteristic. When the individual-level characteristic is centered around the grand mean, the contextual effect is estimated directly. In all analyses, individual-level motivational and achievement variables were centered around their grand means and, thus, coefficients associated with peer group effects represent contextual effects (Bryk & Raudenbush, 1992).

[b] The percentage of variance explained refers to the proportional decrease in the estimates of parameter variance in the between-group models compared with the within-group models.

*$p < .05$; **$p < .01$; ***$p < .001$; [+]$p < .15$.

research has documented a decline in motivation and engagement at this age for many students (Eccles et al., 1993). In this study it was found that, on average, students' grades decreased from the end of elementary school to the end of their first year in middle school. Additionally, students' motivation decreased from fall to spring of their first year in middle school. Students' peer groups were an important influence on the nature of changes regarding several of the outcomes.

With regard to achievement and motivation outcomes, young adolescent students tended to affiliate with other students who had academic characteristics similar to their own. For example, high achievers tended to belong to a peer group with other high achievers, and low achievers tended to belong to a peer group with other low achievers. Controlling for the fact that students selected friends who had achievement levels similar to their own in school, students' peer groups still accounted for change in students' achievement over time. Although on average students showed a decrease in achievement from sixth to seventh grade, when students were members of a peer group that consisted of high achievers, their level of achievement showed less of a decline. When students spent time with low-achieving students, their level of achievement showed a greater decline.

There were differences regarding peer group influences on the different facets of motivation. The peer group was found to influence changes in students' intrinsic value for school, that is, whether they liked and enjoyed school. Students who "hung out" with a group of friends who disliked school showed a greater decrease in their own enjoyment of school over the course of the school year compared with students who spent time with friends who liked school.

Interestingly, the peer group was not influential with regard to changes in students' utility value for school, that is, the usefulness and importance of school in adolescents' lives. Perhaps parents and teachers are more important influences in this area. This finding is important, because it indicates that peer groups are not equally influential on all academic characteristics. This finding about utility value is in line with previous research that found that adolescents are more likely to talk about future educational plans and career choices with adults than with their peers (Young & Ferguson, 1979). Other research, however, found that best friends have an influence on high school students' college aspirations (Hallinan & Williams, 1990; Kandel, 1978a). This may reflect a difference between the influence of best friends and that of peer groups or, perhaps, a developmental difference: as adolescents move closer to adulthood and make decisions (e.g., about college) that have much to do with the utility value of school, peers become a more important influence. Future studies that compare best friends with the peer group in terms of influence on students' utility value for school, and follow students through adolescence could answer this question.

Analyses examining peer group effects on changes in students' expectancies for success in school revealed only a trend; findings were not statistically significant. This indicates that peer groups had limited influence on adolescents' beliefs about whether they would be successful in school. As Berndt and Keefe (1995) have suggested, however, even low levels of peer influence may have a large cumulative effect over several years. In the present study, peer influence on changes in motivation was examined over an 8-month period. Thus, even though the effects were small, they may be meaningful, given the time frame. Greater effects might have been found by following individuals for a longer period of time. Indeed, the strongest effects were found for achievement, which was examined for a full year (from end of the sixth grade to the end of seventh grade, and across the transition from elementary to middle school).

The findings presented here reinforce Brown's assertions that peer influence is multifaceted, despite the pervasive and persistent portrayal in the media and popular press of peer influence as a negative "monolithic force guiding adolescents into unhealthy and undesirable behavior" (Brown et al., 1997, p. 161). There was considerable variation among peer groups with regard to their members' motivation and achievement in school at the beginning of middle school. Peer groups have the potential to bring about both positive and negative changes. An aim for future research is to investigate how to capitalize on the benefits of some peer relationships and ameliorate the negative influence of other peer relationships.

There were no gender or ethnic differences for peer influence. This finding is in line with the few other studies that used similar methods to measure peer groups and peer characteristics (e.g., Urberg et al., 1997). Studies using other methods have yielded inconsistent findings, however. Future research should investigate why gender and ethnic differences are sometimes found. For example, perhaps there are gender differences regarding the influence of a best friend. Findings of the present and similar studies (e.g., Urberg et al., 1997), however, indicate that there are no gender or ethnic differences in influence from an individual's small, relatively intimate group of peers who interact on a regular basis.

There was no difference between stable and unstable peer groups with regard to their influence on adoles-

cents' motivation. This finding may be due to the fact that friendships formed at the beginning of the school year have an influence on individuals' motivation regardless of whether they are short-term or last throughout the school year. For example, if a student spends the first month of school with peers who are highly motivated, this might set the student on a certain path for the school year. There may also be a lack of difference in the influence of stable versus unstable peer groups because individuals' peer groups retain similar values and achievement levels over time, despite membership turnover (Kinderman, 1993). Despite the fact that a given peer group does not consist of the same members across the school year, most individuals stay in peer groups with a similar motivation context (Kinderman, 1993). The measurement of the peer group at the beginning of the school year serves as a proxy for peer group context across the school year. These are general trends, however. Certainly, some students might end up in a peer group with a motivation context dramatically different from that of the group they started in. It would be interesting to study students who do not follow the general trend. In many ways, a move to a different group could land a student in a more protective or more risky context with regard to the development of achievement beliefs and behaviors. Such a transition could have a major effect on their developmental trajectory in school.

This study used a research design that captured the nested nature of peer groups and statistical methods that are designed to evaluate group effects on individuals. It was assumed that to some degree there is a common or shared experience in the peer group with regard to the norms, values, and standards that concern motivation and achievement in school. A climate or context emerges out of interactions and experiences among peer group members that affects each individual in the peer group. There was support for this view: multilevel analyses revealed that some of the variation in student motivation and achievement (12–37%) reflected between-group differences. There was substantial within-group variation, however. Individual differences in how the peer group context is experienced may be due to unique interactions that an individual has with another peer group member (i.e., not all members are present and involved in all interactions), unique interactions with a nonmember, or different roles that members have within peer groups (e.g., leader or follower). Further, individuals have their own perspective that frames the peer group experience uniquely for them. Such individual differences in peer group experiences are also important for understanding the impact of the peer group on development. Appreciation of the varying levels

or pathways of experience (shared and nonshared) is important for a comprehensive understanding of peer group influence. Future research that considers how the different levels or pathways of experience interact could add to our understanding of the peer group's impact on development.

One feature of the peer group context that makes it challenging to measure is that peer groups are often overlapping because some individuals belong to more than one peer group (Kindermann et al., 1996). The use of multilevel analyses to determine variance in outcomes that is due to peer group effects requires that peer groups be considered as independent groups. Thus, in this study individuals were assigned to their primary peer groups, and membership in multiple peer groups was not considered. This approach is not uncommon in peer group investigations (e.g., Urberg et al., 1997), but it is important to note that there is an element of peer group experience that exists (i.e., membership in multiple groups) for some students that is not captured when using multilevel analyses. Further, some students did not have primary membership in any one peer group but rather had equal membership in multiple peer groups. These students were excluded from the present analyses, but they likely play an important role in peer groups. Additionally, it should be noted that some seventh-grade students were not members of any peer group in their school. Although some of these students may have had peer groups whose members did not participate in the study, some were social isolates in school. The conceptualization and analyses of peer group influence would not apply to such students.

There are several aspects of peer groups not considered in this study that might be important for understanding the nature and magnitude of peer group influence. For example, future studies might consider whether variability in size and cohesiveness between peer groups impacts socialization processes. It would also be interesting to examine other aspects of adolescents' social world, such as crowd affiliation and best friendship, in a study of peer group membership to determine joint, independent, and possibly interactive effects of these different social phenomena on adolescents' motivation and achievement. One study that investigated how peers influence adolescents with regard to alcohol use found that best friends influenced adolescents to initiate alcohol use whereas peer groups influenced members to drink to intoxication (Urberg et al., 1997). This suggests that different relationships might be important at different stages in the progression of behaviors from the experimental stage to more extreme or regular involvement. Maladaptive beliefs and behaviors in school may begin

with minor infractions (e.g., not turning in a homework assignment) and escalate to behavior with more serious consequences (e.g., skipping school), and best friends and peer groups may play different roles in this process.

Another task for future research is to consider simultaneously a wide variety of characteristics of adolescents and peer groups. Separate investigations have found that academic characteristics, smoking, alcohol use, and drug use are criteria for peer group membership (e.g., Ennett & Bauman, 1994; Kindermann et al., 1996; Urberg et al., 1997). Athletics and involvement in various extracurricular activities are also likely to be important. By examining multiple variables in numerous domains, future studies could determine the relative importance of these variables to adolescents' selection of peer groups. It could be that adolescents select peer groups primarily for nonacademic characteristics, but academic characteristics are socialized as a result of spending time with the peer group.

In conclusion, this study contributes to current understanding of the peer group as a context for the socialization of achievement beliefs and behaviors during early adolescence. There is a growing recognition that adolescent adjustment in general is related to the nature of the context that youth experience (e.g., Eccles et al., 1993; Goodenow, 1992; Graber, Brooks-Gunn, & Petersen, 1996; Lerner & Miller, 1993; Silbereisen & Todt, 1994). Although psychologists have long acknowledged that behavior cannot be understood apart from the environment in which it occurs, context has not always been taken into account in models of adolescent development (Magnussen & Statin, 1998). Increasingly, however, these models include both personal and contextual factors, reflecting the view of individual development as a joint function of individual and environmental forces (Schulenberg, Maggs, & Hurrelmann, 1997). Further, recent advances in multilevel statistical analyses can aid researchers in distinguishing individual from contextual effects. The results of the present study illustrate how the peer group context can support or undermine adolescent motivation and achievement. The nature of peer group influence is complex. Peer groups vary widely in their motivation characteristics. Students tend to select friends who are similar to themselves with respect to academic characteristics. Controlling for selection, however, the peer group context is related to changes in young adolescents' intrinsic value for school and their achievement during the first year of middle school.

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ADDRESS AND AFFILIATION

Corresponding author: Allison M. Ryan, Department of Educational Psychology, College of Education, University of Illinois, 230 Education Bldg., 1310 South Sixth Street, Champaign, IL 61820-6990; e-mail: ryan2@ uiuc.edu.

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