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Friendship Formation In Early Adolescence

Cindy Hardy

A Thesis

in

The Department

of

Psychology

Presented in Partial Fulfilment of the Requirements
for the Degree of Doctor of Philosophy at
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ABSTRACT

Friendship Formation in Early Adolescence

Cindy Hardy, Ph.D.
Concordia University, 1997

The objectives of this study were to (a) examine temporal features of youths' peer relationships during the transition to high school and (b) examine prospectively the earliest phases of friendship formation. Students were tested six times as they moved from Grade 6 in small elementary schools into Grade 7 in one larger high school. In May of Grade 6 and in September, October, November, December, and May of Grade 7, participants completed sociometric nominations. Upon entry to Grade 7, they identified same-gender target peers who they had just met and with whom they thought they would become friends, and reported their perceptions of these relationships throughout Grade 7. Sociometric nominations were used to assess whether the relationships developed into friendships. Examination of temporal features of peer relationships revealed that peer relationships demonstrate both stability and change during the transition to high school, and that girls experience greater change in their friendships than boys. That is, during the fall term of Grade 7, both boys and girls lost old friendships, but girls lost more than boys and did so earlier in the school year. In addition, both boys and girls formed new friendships with previously unfamiliar peers, but girls did so more often and earlier in the school year. Youth appeared to base their selections of potential friends on peers' degree of acceptance and, to a lesser extent, rejection by the peer group. Initial perceptions of

the qualities of relationships with potential friends did not appear to differentiate relationships which later became friendships from those which did not, but the validity of that conclusion was limited by insufficient statistical power. The transition from acquaintanceship to reciprocated friendship was characterized by increases in perceived positive relationship qualities, and perceptions of relationship qualities did not change during the first four months of friendship. The continued study of temporal features of friendship is needed to clarify the causes and correlates of stability and change in adolescent friendships, both in terms of overall friendship networks and in terms of the development of specific friendships.

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In loving memory of Dana King

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Introduction

Friendships with peers become increasingly important in the lives of young people during adolescence. Although relationships with family members remain important, adolescence is characterized by a movement away from reliance on the family as a primary source of social support, companionship, and intimacy toward greater reliance on close relationships with age mates (Csikszentmihalyi & Larson, 1984; Furman & Buhrmester, 1992).

In this prospective study of friendship formation during early adolescence, relationships with friends are conceptualized as dynamic entities which unfold over time. Across the lifespan, the temporal course of friendship is one of its more salient features (Hinde, 1979). The importance of temporal features of friendship are evident in youths' reports of their friendships. When asked about specific friendships, youth often refer to aspects of friendship that are temporal in nature, such as "He always calls me up" (Berndt, 1986, p. 191) or "We've been friends since second grade" (Berndt, 1986, p. 194).

The importance youth attach to temporal features of friendship is reflected in some of the research that has been done on the topic of friendship during childhood and adolescence. For example, measures of friendship qualities assess youths' perceptions of reliable alliances and loyalty in their best friendships (Bukowski, Hoza, & Boivin, 1994; Parker & Asher, 1993), and research attention has been devoted to understanding correlates of friendship stability (e.g., Berndt, Hawkins, & Hoyle, 1986; Bukowski et al., 1994). However, the research methodologies used in most extant research on child and adolescent friendships fail to capture temporal features such as the formation,

maintenance, or decline of friendships, and only recently have temporal features of friendship received explicit attention in the literature on child and adolescent friendship (e.g., Parker & Seal, 1996; Shulman, Elicker, & Sroufe, 1994). As a result, little is known about the temporal course of child and adolescent friendships.

Researchers studying adult relationships, in contrast, have empirically studied the dynamic nature of relationships for some time, and have developed theories regarding the temporal course of friendship (e.g., Altman & Taylor, 1973; Levinger & Levinger, 1986). Drawing upon ideas from the literature on adult relationships, the present study was an exploration of temporal features of friendship in early adolescence. Specifically, objectives for the present study were to assess the extent of friendship formation, maintenance, and loss that occurred when youth entered a high school peer group containing both familiar and unfamiliar peers, and to assess youths' perceptions of relationships prospectively, as friendship formation occurred. It was anticipated that an explicit focus on the temporal features of friendship would extend our current understanding of the nature of close friendships during adolescence.

Friendship in Childhood and Adolescence

A general conclusion that has emerged from the literature on peer relations in childhood and adolescence is that young people who fail to establish adequate peer relationships are at risk for a variety of adjustment problems later in life (for review, see Parker & Asher, 1987). This conclusion has been based on studies of the dimensions of peer relations known as peer acceptance and peer rejection, rather than friendship. Peer acceptance and peer rejection reflect, respectively, the extent to which an individual is

liked and disliked by his or her peer group. In contrast, friendship is a mutual relationship that exists between two individuals (Bukowski & Hoza, 1989). Peer acceptance is antecedent to friendship in the sense that an individual must be liked by at least one peer before he/she can participate in mutual friendship, and opportunities for participation in friendships increase with increasing peer acceptance (Bukowski, Pizzamiglio, Newcomb, & Hoza, 1996). Peer rejection is indirectly linked to friendship through its inverse association with peer acceptance (Bukowski et al., 1996).

When studied simultaneously, friendship, peer acceptance, and peer rejection have been shown to make independent contributions to predictions of concurrent psychosocial adjustment (Bukowski, Hoza, & Boivin, 1993; Parker & Asher, 1993; Vandell & Hembree, 1994). Empirical links between the various dimensions of peer experience and future psychosocial adjustment are less clearly defined. In a long-term outcome study which included indices of peer relations with the peer group in general and with specific friends, Bagwell, Newcomb, and Bukowski (as cited in Newcomb & Bagwell, 1996) found that, relative to individuals who were friendless in Grade 5, those who participated in mutual friendship in Grade 5 evidenced better adjustment as adults. However, when peer preference (a difference score calculated by subtracting peer rejection from peer acceptance) was covaried, differences were no longer apparent. Furthermore, when behavioral adjustment in Grade 5 was controlled, neither peer preference nor participation in friendship significantly predicted adult adjustment. Thus, difficulties in early peer relations, whether with the peer group in general or with particular friends, may simply be markers for future risk, rather than causal agents.

Nevertheless, there is compelling evidence that interactions and relationships with close friends have the potential to offer developmental benefits (Newcomb & Bagwell, 1996). The ability to establish and maintain friendships has been found to predict successful adjustment to kindergarten (Ladd, 1990). Similarly, features of adolescents' friendships are associated with school adjustment in Grades 7 and 8, although at that age it has been demonstrated that friends' influences on one another are not always positive and friends may encourage maladaptive behaviors, depending upon their personal characteristics (Berndt & Keefe, 1995). Compared to children and young adolescents with close friendships, however, those without close friendships evidence poorer academic adjustment (Vandell & Hembree, 1994) and report higher levels of loneliness (Bukowski et al., 1993; Parker & Asher, 1993), more negative self-concepts (Vandell & Hembree, 1994) and lower self-esteem (Bukowski & Hoza, 1989). Interactions between friends, relative to those between acquainted nonfriends, provide unique opportunities for learning and practising skills related to joint performance of tasks (e.g., Newcomb & Brady, 1982), conflict management (e.g., Hartup, French, Laursen, Johnston, & Ogawa, 1993), and intimacy (e.g., Mettetal, 1983; see Newcomb & Bagwell, 1995 and 1996, for a meta-analysis of differences between friends and nonfriends). In summary, depending upon the characteristics of the individuals involved, close friendships with age mates demonstrate positive or negative associations with emotional well-being and psychosocial adjustment, and offer unique opportunities to learn social skills. The absence of close friendships is consistently associated with negative outcomes.

Whether friendship experiences play a causal role in development or are merely

markers for pre-existing adjustment, it is apparent that children and adolescents with friends are generally better off than those without friends. Interventions designed to help children and adolescents improve their peer relations have taught social skills thought, but not known, to be required for the formation and maintenance of friendships. Social skills interventions have not demonstrated increases in friendship participation, mainly because the outcomes typically assessed reflect peer acceptance, rather than friendship (Asher, Parker, & Walker, 1996). In their review of social skills training outcome research, Asher et al. (1996) identified a need for more research on the correlates of friendship formation, maintenance, and loss, to aid in the identification of skills specific to friendship formation and maintenance. A central premise of this dissertation was that our understanding of factors which facilitate and/or inhibit friendship formation and maintenance would be enhanced by consideration of the temporal aspects of friendship.

As noted previously, the idea that relationships develop over time has received relatively little explicit treatment in the literature on child and adolescent friendship. However, relationships, like individuals, have developmental histories, and the interactions that occur between two individuals at one point in time are determined, in part, by their previous interactions (Hinde, 1979; Park & Waters, 1988). Cumulative interactions with a given partner result, for example, in accumulated knowledge of the partner's characteristics and a set of expectations regarding the course and outcomes of current interactions (Hartup, 1996; Hinde, 1979). Effects of cumulative interactions with specific partners have been demonstrated in a study of friendships between 4-year-olds in group daycare settings (Howes, Droege, & Matheson, 1994). Compared to dyads who

had been friends for 6 months or less, dyads who had been friends for 3 years were more likely to engage in cooperative pretend play and to use communicative behaviors that extended play. Furthermore, dyads who had been friends for 6 months or less engaged in these behaviors more often than acquainted nonfriend dyads. However, during play episodes, long-term, short-term, and nonfriend dyads did not differ in rates of use of clarifying communications, including suggestions, explanations, and requests for information. Thus, although children displayed similar levels of basic social skills regardless of the status of their relationship, interactions between long-term friends were the most sophisticated and elaborate. These observations by Howes et al. (1994) offer empirical support for the idea that cumulative interactions produce changes in the nature of relationships, and suggest that the temporal features of friendship during childhood and adolescence are worthy of further study.

Adult Relationships as Dynamic Entities

Researchers and theorists concerned with close relationships in adulthood have developed a variety of theories in which relationships are explicitly construed as developing entities (e.g., Altman & Taylor, 1973; Murstein, 1970). One developed by Levinger and Levinger (1986) incorporates elements common to many of these theories and serves as a starting point for review. Consistent with the focus of this dissertation, the primary focus in the following review is on relationship formation and maintenance, rather than relationship decline or termination, although the theories discussed have been applied to all phases of relationships.

Defining close relationships as those in which members demonstrate a high degree

of influence on each others' thoughts, feelings, and behaviors, Levinger and Levinger (1986) presented two inter-related models of the dynamics of close relationships. First, they emphasized the distinction between the interactions that take place between two individuals and the personal, dyadic, physical, social, and temporal contexts within which those interactions occur. With that distinction in mind, they proposed a transactional model of dyadic interaction in which a dyad's current interactions are influenced by, and influence, the personal characteristics of each dyad member, the physical and social environments, and the course of the dyad's relationship.

In their second model, Levinger and Levinger (1986) outlined the following stages in the development of close relationships:

A. Acquaintance with another person.

B. Buildup of a relationship.

C. Continuation and consolidation.

D. Deterioration or decline of the bond.

E. Ending, either voluntary or involuntary (p. 119).

They noted that although all relationships necessarily start with acquaintanceship, many relationships do not become close and those that do become close may not progress through all the stages. Therefore, their five-stage sequence should be viewed as a general framework within which the development of close relationships can be conceptualized, rather than as an inevitable sequence of relationship development.

Hypotheses regarding links between dyadic interactions and the stage of relationship development are central to Levinger and Levinger's (1986) theory. They

hypothesized that across the five phases of relationship development, specific aspects of the dyadic interaction model will have greater or lesser influence on subsequent relationship development (Levinger & Levinger, 1986). For example, in the acquaintanceship phase, the physical environment (e.g., classroom structure) may be of paramount importance, in that it may influence the amount of time two individuals spend interacting, whereas in the buildup phase, physical environment may become less important, as partners broaden the physical context of their relationship by, for example, meeting and spending time together in other places. Furthermore, components of the dyadic interaction model may interact with each other to influence the course of relationship development. For example, characteristics of dyad members may interact with characteristics of the social environment to differentially predict relationship progression. In summary, Levinger and Levinger (1986) argued that (a) both interactional processes and background variables are important for understanding relationship development, (b) factors influencing relationship development may interact, and (c) factors which influence relationship development may change over time as relationships pass through the various stages of relationship development.

The theory outlined by Levinger and Levinger (1986) shares features with the social penetration theory developed by Altman and Taylor (1973). Altman and Taylor theorized that as relationships develop interactions change along two fundamental dimensions, breadth and depth. Breadth refers to the content of activities whereas depth refers to intimacy level. In this view, relationship buildup consists of repeated interactions of progressively increasing breadth and depth, during which members of a

dyad continuously monitor and evaluate the costs and benefits of interactions with their partner and make decisions regarding their willingness to broaden and/or deepen future interactions with the partner.

Filter models of relationship development (Kerckhoff & Davis, 1962; Murstein, 1970), originally developed to predict progression of courting relationships to marriage, posit a series of stages in relationship development based on members' evaluations of similarity and/or compatability. In this view, it is hypothesized that the criteria used to judge similarity and/or compatability change as relationships progress. Dyad members may initially evaluate their partners in terms of social similarity (e.g., age, preferred activities) then, as the relationship progresses, in terms of value similarity, and finally in terms of personality or role complementarity. Application of filter theory to adult friendships indicated that value similarity was correlated with friendship ratings after three months of acquaintanceship, whereas personal construct similarity was more strongly correlated with friendship ratings after eight months (Duck & Craig, 1978).

Stage theories of relationship development (e.g., Altman & Taylor, 1973; Levinger & Levinger, 1986) have received varying degrees of empirical support with respect to adult friendships (see Hays, 1988, for a review). Perhaps their greatest contribution to the study of relationships has been in their provision of conceptual structures within which the multitude of interactional characteristics and background variables related to relationship progression can be organized. Levinger and Levinger's (1986) theory is more comprehensive in this regard than either social penetration theory (Altman & Taylor, 1973) or filter theories (Kerckhoff & Davis, 1962; Murstein, 1970).

Working from Levinger and Levinger's (1986) theoretical structure, research can be designed to identify which interactional processes and background variables are important under what conditions of relationship development.

A major criticism of stage theories of relationship development has been that although stage models assume that relational closeness develops over time, there is evidence that events occurring early in acquaintanceship differentiate relationships that later become close from those that do not (Berg & Clark, 1986). Stage theories are not useful for predicting when relational transitions will occur, as illustrated in the results of a study by Hays (1985).

Hays (1985) tested predictions from social penetration theory by studying friendship formation between university students. Hays asked students in the second week of their first term at university to identify two same-gender target peers whom they did not previously know and with whom they thought they "might become good friends as the school year progressed" (Hays, 1985, p. 911). On that occasion and at three-week intervals for the remainder of the fall term (four times in all), participants completed checklists of behaviors, indicating which behaviors they had engaged in with each target peer during the previous three weeks. The behaviors on the checklists were selected to represent different domains of interaction (communication, companionship, affection, and consideration). Within each domain, the listed behaviors represented superficial, casual, and intimate levels of exchange. Self-reported ratings of closeness obtained at the end of the fall term were used to classify relationships as close or not close.

Consistent with predictions from social penetration theory, Hays (1985) found that

relationships rated as close at the end of the fall term were differentiated from those which were not by a greater variety of activities and by more intimate exchange within each activity domain. These differences were apparent during the second week of classes and increased over the fall term. Thus, interaction patterns apparent early in the relationship process differentiated relationships which became close from those which did not become close, and differences between relationships with different outcomes increased over time. Social penetration theory could not predict the speed with which successful and unsuccessful relationships became differentiated.

Thus, specification of particular stages of relationship development is problematic, in that the rate of relationship development appears to vary dramatically from one relationship to another (Hays, 1985). Furthermore, markers of transitions through various stages also appear to vary across relationships (Conville, 1991). Thus, stage models of relationship development such as the one proposed by Levinger and Levinger (1986) must be viewed as rough maps of relationship development, rather than as stage models in the strictest sense, which implies an invariant sequence of necessary steps with predictable transitions.

Factors predicting the speed of relationship development have not been studied in detail (Berg & Clark, 1986). Some potentially explanatory variables have been suggested, including the extent to which both partners are available to enter into a new close relationship, and the degree to which partners are responsive to, and are perceived as being responsive to, each others' needs (Berg & Clark, 1986). Similarly, qualities and long-term outcomes of slowly- versus rapidly-evolving relationships have not been

studied. It is conceivable that, because of immediate personal needs and/or situational characteristics, a dyad may quickly establish what is perceived by its members to be a close relationship, only to later discover that the relationship can not be sustained due to irreconcilable differences in values or personalities. Relationships that develop more slowly may be less likely to yield such disappointing outcomes, because the individuals involved may know more about each others' characteristics, and thus have more accurate expectations for the relationship, before they develop an interdependent relationship.

Despite difficulties in the specification of stages of relationship development, stage theories of relationship development in adulthood and the evidence that supports them indicate that temporal transformations are inherent in relationships, including friendships. Even when a given relationship is ongoing and relatively stable, change is inevitable because characteristics of the relationship and/or its members will change over time (Hinde, 1979). Hinde has suggested that temporal aspects are central to dyadic relationships for the following reasons. First, each interaction in which a dyad engages has the potential to affect the course of the relationship, by altering participants' affective and cognitive reactions to the relationship. Second, participants' perceptions of and satisfaction with the relationship are directly linked to the relative frequency and patterning of interactions over time. Third, many dyadic relationships are predicated on the idea of commitment, which implies a future orientation and expectation that the relationship will continue. Temporal features are inherent in dyadic relationships and if we seek to understand relationships, we must understand their temporal features.

Child and Adolescent Friendships as Dynamic Entities

The theories reviewed above were originally developed to describe the dynamics of close relationships in adulthood. To assess the theories' utility for extending our knowledge of the nature and functions of friendship in childhood and adolescence, the extent to which these conceptualizations are consistent with current knowledge of the development of child and adolescent friendships must be considered.

In approaching the task of evaluating the utility of theories based on adult relationships for understanding child and adolescent friendships, the distinction made by Hartup and Stevens (1997) between deep and surface structures of friendships is useful. Deep structure refers to the social meaning of friendship. Hartup and Stevens argue that in Western cultures, the social meaning of friendship is best characterized by the idea of symmetrical reciprocity. That is, individuals expect friendships to be mutual and reciprocal, and conceive of friendships as mutual, reciprocal relationships. Surface structure, in contrast, refers to the day-to-day enactment of the deep structure of friendship. Thus, specific interactions and exchanges are expressions of the deep structure. Hartup and Stevens (1996) argue that the deep structure of friendship changes little over the lifespan, whereas the surface structure changes as individuals develop. Thus, we would expect the expression, but not the meaning, of friendship to be different for adolescents and adults. The extent to which theories of relationship development in adulthood apply to the expression, rather than meaning, of friendship in childhood and adolescence is, therefore, the primary focus of the following review.

As noted previously, temporal aspects of child and adolescent friendships have

received scant research attention to date. The work that has been done can be characterized by three research strategies. First, temporal aspects of child and adolescent friendships have been studied by examining changes that occur in dyadic interactions as relationships develop. Second, changes in individuals' perceptions of specific relationships have been related to changes in the status of those relationships. Third, environmental and personal correlates of friendship stability have been examined. In the sections that follow, research based on the first two of these strategies is reviewed. Research examining correlates of friendship stability is reviewed in a later section on the stability of peer relationships during school transitions.

Examination of changes that occur in dyadic interactions as relationships develop by necessity involves observation of interactional behaviors. Naturalistic observations of interactions between previously unacquainted children aged 3 to 9 years have revealed that certain communicative behaviors are predictive of acquaintanceship success (Gottman, 1983; also see Parker, 1986, for a summary of Gottman's work). In Gottman's (1983) study, acquaintanceship success was indexed by maternal reports of children's interest in and involvement with their assigned play partner two months after the last of three researcher-arranged play sessions. In the first play session, communication clarity and connectedness, informational exchange, conflict resolution talk, and talk which functioned to establish common activities predicted acquaintanceship success. In the second and third play sessions, the same aspects of communication continued to predict acquaintanceship success, but self-disclosure and exploration of similarities and differences gained importance as predictors of relationship success. These findings are

consistent with predictions from Levinger and Levinger's (1986) dynamic conceptualization of friendship, in that associations between specific types of interactions and relationship success changed as relationships progressed. Early differentiation of successful and unsuccessful acquaintanceships occurred, but it is not possible to specify a particular stage of relationship development attained by the dyads in Gottman's (1983) study.

A stage model of friendship growth in preadolescence has been generated from observations of interactions occurring between 10-year-old children at 4-week-long summer day camps (Shulman et al., 1994). Friendship reciprocity was assessed via mutual sociometric nominations given at the end of camp and frequency of association during camp. Three stages of friendship growth were identified: (a) pre-togetherness orientation, during which children mutually signalled interest in forming a friendship; (b) connectedness, during which members of emerging friendship dyads engaged in mutual activities; and (c) creative relatedness, during which some dyads demonstrated increasingly elaborate forms of play and conflict resolution (Shulman et al., 1994). Some of the dyads consisted of children with histories of secure attachments to parents, while others consisted of children with histories of insecure attachments to parents. The nature of interactions occurring within each of the three stages of friendship growth varied as a function of attachment history. Dyads consisting of children with histories of insecure attachments to parents had particular difficulty negotiating the creative relatedness stage, displaying rigid interaction patterns that seemed designed to avoid or minimize conflict rather than to promote enjoyable and rewarding relations. In contrast, during the creative

relatedness stage, children with histories of secure attachment displayed fluid interactional sequences that appeared rewarding, and occasional escalations into conflict were resolved in ways that seemed to strengthen the relationship. Shulman et al.'s (1994) work highlights the contributions of specific types of interactions to friendship formation, and identifies attachment history as an influential background variable in children's friendship development. Furthermore, as predicted by Levinger and Levinger (1986), the impact of attachment history on children's friendships varied as a function of the stage of friendship growth, with its influence being most apparent during the creative relatedness stage.

Studies based on the research strategy of examining transitions in relationships by relating them to changes in youths' perceptions of relationships offer information not attainable through observations of interactions. Specifically, such studies are based on insiders' views of the dynamics of friendship, and permit the identification of relationship features which children and adolescents perceive as being related to relationship transitions. Perceptions of relationships have been studied both retrospectively, after relationship transitions have occurred (Berndt, 1986; Bigelow & LaGaipa, 1980), and prospectively, before relationship transitions have occurred (Berndt et al., 1986).

Retrospective reports from children and adolescents about incidents that deepened specific friendships have revealed that shared activities, helping behaviors, and behaviors that were ego reinforcing (i.e., that made one feel valued and special) were salient. Adolescents also highlighted behaviors indicative of loyalty and commitment (Bigelow & LaGaipa, 1980). Retrospective reports of incidents that led to the decline of specific

friendships included references to behaviors or circumstances that initiated a loss of admiration for the friend, a decline in loyalty or commitment, or a decline in ego reinforcement (Berndt, 1986; Bigelow & LaGaipa, 1980). Aggressive behavior and other personal attributes of the friend were also identified as reasons for terminating friendships (Berndt, 1986). Although there were no gender differences in the reports of younger children (Berndt, 1986; Bigelow & LaGaipa, 1980), adolescent girls were more likely than adolescent boys to refer to issues of loyalty and commitment when discussing either the deepening or decline of friendship bonds (Bigelow & LaGaipa, 1980). Gender differences in expectations of loyalty and commitment have been noted in friendship conceptions generally (Bukowski, Newcomb, & Hoza, 1987) and are probably not specifically related to friendship formation and decline. Consistent with the dyadic interaction component of Levinger and Levinger's (1986) theory of relationship development, young people identify specific interactional events and background variables, such as behavioral characteristics of the friend, as being salient features of the relationship transitions they have experienced.

In the only prospective study of associations between youths' perceptions of specific relationships and relationship transitions to date, Grade 4 and 8 students' perceptions of their close friendships at the beginning and end of a six-month period (November to May) were examined in relation to maintenance of those friendships over the same period (Berndt et al., 1986). With closeness defined by a criterion of unilateral or mutual best friend nominations and high liking ratings, relationships that remained close in May were considered stable, whereas those no longer close in May were

considered unstable. In November, students in unstable friendships were less likely than students in stable friendships to have commented upon their liking for their friend and the frequency of their interactions. In addition, they perceived their friendships as providing less intimacy, even though they were still in a close relationship with their friend in November, when they made these reports. Comments concerning disloyalty or unfaithfulness increased from November to May for unstable relationships, but showed no change in frequency for stable relationships. In addition, ratings of friends' prosocial behavior declined significantly from November to May for unstable relationships, but changed little for stable relationships.

Berndt et al.'s (1986) results indicate that specific types of perceptions predicted relationship decline, but that there were no changes over time in perceptions of stable friendships. The absence of changes in perceptions of stable friendships may indicate that the friendships were in a continuation (as opposed to formative) phase of relationship development throughout the study. Alternatively, the absence of changes in perceptions of stable friendships may indicate that children's and adolescents' reports of their perceptions of relationships are not sensitive to more subtle changes that occur between the attainment of some minimum threshold of relational closeness and later relationship decline. Neither of these interpretations of Berndt et al.'s (1986) results can be confirmed because the relationships were not studied from their inception. However, Berndt et al.'s (1986) results clearly indicate that perceptions of interactions with friends and interpretations of friends' personal characteristics and behaviors change as friendships decline and, further, that perceptions of current interactions predict future relationship

decline. In this regard, the results of Berndt et al.'s (1986) study are consistent with Levinger and Levinger's (1986) theory of relationship development.

In summary, conceptualizations of the dynamics of relationships originally developed by theorists studying adult relationships are consistent with current knowledge of the development of child and adolescent friendships. Like adults, children and adolescents evaluate and react to specific interactions with relationship partners (Berndt, 1986; Berndt et al., 1986; Bigelow & LaGaipa, 1980). Specific types of interactions appear to correspond to or predict transitions in child and adolescent relationships (Gottman, 1983; Shulman et al., 1994), and pre-existing personal characteristics influence the course of child and adolescent relationships (Berndt, 1986; Berndt et al., 1986; Bigelow & LaGaipa, 1980; Shulman et al., 1994). Furthermore, and perhaps most significantly, it has been demonstrated that the influence of children's personal characteristics on interactions with friends changes as friendships develop (Shulman et al., 1994). Thus, it appears that conceptualizations originally developed to explain the dynamics of adult relationships will be useful for organizing and extending our knowledge and understanding of friendship during childhood and adolescence. Researchers have identified some specific elements that facilitate or inhibit friendship progressions in childhood and adolescence. Although the importance of specific elements may change developmentally, the underlying dynamic structure of friendships outlined by Levinger and Levinger (1986) appears to apply equally well to children, adolescents, and adults.

Implications for the Study of Friendship Formation

Existing research has both strengths and limitations with respect to what it tells us about friendship formation during childhood and adolescence. Studies of interactions (Gottman, 1983; Shulman et al., 1994) provide detailed descriptions of dyadic interaction processes that occur during the early stages of friendship formation and highlight specific types of interactions predictive of relationship success. Shulman et al. (1994) demonstrated that attachment history has a changing influence on interaction patterns as relationships develop. However, these studies of interactions share a feature which limits their contributions to an understanding of naturally-occurring friendship formation. Shulman et al.'s (1994) observations were based on interactions occurring between peers, some previously acquainted and some not, at summer day camps. Gottman's (1983) observations were based on interactions occurring between two previously unacquainted children in one child's home. While there is no reason to doubt that the dyadic interaction processes described in these studies represent relationship processes that occur naturally, the children in both studies were removed from their everyday social settings, in particular, from their ongoing relationships with other peers. Whether and how ongoing relationships might affect the development of new friendships is unknown, but the social environment is expected to impinge upon development of new relationships (Levinger & Levinger, 1986). Thus, it seems worthwhile to study friendship formation in the context of typical social environments, such as the classroom peer group.

Extant research has identified dimensions along which youth evaluate their friendships and which correspond to relationship transitions. Perceived decreases in

levels of companionship, prosocial behavior, and emotional connectedness are retrospectively associated with and prospectively predict the decline of friendship bonds (Berndt, 1986; Berndt et al., 1986; Bigelow & LaGaipa, 1980). Perceived increases in these same qualities are apparently associated with consolidation of the friendship bond, but this conclusion is based solely on retrospective reports (Berndt, 1986; Bigelow & LaGaipa, 1980). Prospective reports of ongoing friendships showed no evidence of change on these dimensions over time (Berndt et al., 1986), but it is unclear whether this finding is attributable to the prior attainment of a maintenance phase in the friendships studied or to insensitive measurement. To further clarify links between perceptions of relationships and successful formation of new friendships, the earliest phases of friendship must be studied prospectively.

The prospective study of friendship formation in the context of everyday social environments presents several challenges. First, in order to obtain an adequate sample of developing friendships, participants must be in a context in which they are likely to form new friendships. That context should, however, be one in which participants are also likely to maintain old friendships, so that friendship formation is observed in the context of ongoing relationships. Second, the relationships being studied must be known to be new relationships. It is not sufficient to ensure that two individuals were not previously friends, as simple familiarity has been shown to influence the nature of peer interactions (Doyle, Connolly, & Rivest, 1980). Consequently, degree of previous familiarity should be controlled. Third, if meaningful comparisons are to be made between relationships that do versus do not become friendships, participants' initial interest in the two types of

relationship should be controlled.

The research design used by Hays (1985) addresses each of these challenges, some more successfully than others. As described previously, Hays' research participants were in their first term of university, a context in which they would be likely to meet many new peers and establish new friendships, but in which they may not have had many pre-existing friendships. Hays instructed participants to identify target peers who they had just met and with whom they thought they would become friends. These instructions presumably controlled both previous familiarity and initial interest in the relationships. Hays did not directly confirm whether target peers were previously unfamiliar to participants, and instead assumed participants' willingness and ability to follow that portion of his instructions. Similarly, the degree of initial interest in development of relationships with the target peers was not assessed directly but was assumed to be more or less equivalent across relationships.

Some of the key objectives of the present study were related to the assessment of changes in perceptions of relationship qualities as friendship formation occurred. To meet these objectives, a research design similar to that used by Hays (1985) was implemented. Hays' instructions to participants regarding identification of previously unfamiliar peers with whom friendships might be established were used in the present study. Participants' previous unfamiliarity with target peers was directly confirmed by examining the composition of participants' prior peer groups. In the present study, as in Hays' (1985) study, participants' level of interest in forming friendships with target peers was not assessed directly and was assumed to be more or less equivalent across

relationships.

Whereas the setting for Hays' (1985) study was entry into university, the setting for the current study was entry into high school. Students were followed as they made the transition from Grade 6 at several smaller elementary schools into Grade 7 at a larger high school, where they encountered a peer group comprising both previously familiar and previously unfamiliar peers. Thus, formation of new friendships was assessed in the context of a social environment likely to contain pre-existing friendships. The school transition and concurrent changes in young persons' lives are discussed further in a later section.

Hays (1985) used reports of specific behaviors engaged in with target peers to assess changes in relationships. In the present study, reports of perceived relationship qualities were chosen as the means to assess changes in relationships. Three factors guided this choice. First, youths' perceptions of relationship qualities (e.g., companionship, commitment) are known to correspond to relationship transitions and predict relationship decline (Berndt, 1986; Berndt et al., 1986; Bigelow & LaGaipa, 1980). Second, the meaning of prospective findings which indicated that perceptions of ongoing friendships did not change over time (Berndt et al., 1986) was somewhat ambiguous because the friendships were not assessed from their inception. To clarify the implications of those findings, a focus on perceptions of friendship qualities during the earliest phases of friendship was necessary. Third, a psychometrically sound and empirically validated scale for the assessment of perceptions of friendship qualities was available (Bukowski et al., 1994). In the present study, repeated assessments of youths'

perceptions of qualities of new relationships permitted the prospective study of associations between perceptions of relationship qualities and friendship formation.

In Hays' (1985) study, relationship outcomes were assessed via self-reported ratings of friendship closeness. This method for operationalizing relationship outcomes is limited because the two members of a given dyadic relationship may regard the relationship quite differently; specifically, one member may regard it as a close friendship while the other may regard it as a mere acquaintanceship. A recent meta-analysis of comparisons of mutual versus unilateral friendships in childhood and adolescence revealed that mutual friendships are characterized by more positive patterns of interaction and are perceived more positively than unilateral friendships (Newcomb & Bagwell, 1995). In addition, friendships identified through mutual friendship nominations are more stable than friendships identified through unilateral friendship nominations (Berndt et al., 1986; Gershman & Hayes, 1983). Thus, mutual friendship nominations were used to assess relationship status in the present study.

A further refinement of Hays' (1985) design in the present study was the inclusion of an assessment of characteristics of the peers who were selected as potential friends. Personal characteristics of dyad members are expected to be linked to relationship development (Levinger & Levinger, 1986), and an individual's initial willingness to become friends with someone is likely to be influenced by that person's characteristics. For example, social reasoning abilities portrayed by fictional peers predict children's willingness to become friends with those peers (Bigelow & LaGaipa, 1980). As noted previously, there is evidence that peer acceptance is antecedent to participation in

friendship and that peer rejection is indirectly linked to friendship participation through its association with peer acceptance (Bukowski et al., 1996). However, whether peer acceptance and peer rejection directly influence selection of potential friends is not known, and was examined in the present study.

In the foregoing analysis, some of the challenges facing researchers seeking to study friendship formation prospectively were highlighted. One of these challenges is the identification of a social context in which friendship formation is expected to occur for a relatively large number of participants, but where it is also expected that participants will be engaged in pre-existing friendships. A setting that meets both these criteria is the transition from elementary school into high school. In the next section, literature regarding the transition to high school and concurrent changes in the lives of young adolescents is reviewed, with a particular focus on peer relationships.

The Transition to High School: Links with Peer Relationships

The transition out of smaller elementary schools into larger middle or high schools marks a major transition in the lives of young people. Youth typically make the transition out of elementary school at about 11 to 13 years of age, depending on the structure of the local school system. In that age range, youth are experiencing tremendous developmental changes, including cognitive changes, onset of puberty, and increasing autonomy.

Between the ages of 11 and 13 years, most youth experience significant changes in their cognitive abilities. Most relevant to the current discussion are changes that occur in young persons' social cognitive abilities. Selman (1980; Yeates & Selman, 1989) has

identified stages of growth in perspective taking or social understanding skills. Although the timing of the stages Selman proposed appears to vary widely across individuals and contexts (Yeates & Selman, 1989), a major transition in social understanding is thought to occur between 11 and 13 years of age (Selman, 1980). At the earlier end of that age range, in the "self reflective and reciprocal" stage, young adolescents are aware that others' perspectives differ from their own and that these varying perspectives influence perceptions of self and others. In this stage, attempts to understand others are constituted of attempts to put oneself in the other's place. Later on, adolescents enter the "third person and mutual" stage, when they come to understand that two people can simultaneously view each other both as actors and as objects. In this stage, understanding of self and others can be achieved through use of a third-person perspective (Yeates & Selman, 1989).

Social understanding skills are related to experiences with peers. They are positively related to peer acceptance during Grades 3 through 8, and the strength of the association increases with age (Kurdek & Krile, 1982). Furthermore, mutual friends are more similar in terms of their social understanding skills than are unilateral friends or nonfriends, with greater similarity between older relative to younger mutual friends (Kurdek & Krile, 1982).

Between 11 and 13 years of age, pubertal changes, which include a height and weight growth spurt, hormonal changes, and sexual maturation, are likely to occur for many youth (Santrock, 1996). On average, girls enter puberty earlier than boys, but for both sexes there are wide variations in the timing of puberty. The timing of pubertal

change is related to its impact on socioemotional adjustment. For boys, early puberty appears to have positive effects on psychosocial functioning, but for girls early puberty appears to have negative or mixed effects (Ge, Conger, & Elder, 1996; Simmons & Blyth, 1987; Simmons, Blyth, Van Cleave, & Bush, 1979).

Thus, as youth make the transition to high school, they are likely to be experiencing or anticipating significant changes in their biological and social selves. In addition to adapting to those changes, they must learn to cope in a new school environment. The transition from elementary school into high school has often been identified as a major stressor for young people (e.g., Simmons, Carlton-Ford, & Blyth, 1987). Because high schools are often larger and more impersonal than elementary schools, disruption of peer relationships has been identified as one of a number of possible sources of stress during the transition. Self-reported peer social support has been found to be negatively related to psychological symptomatology during the transition to junior high school (Hirsch & DuBois, 1992).

Primary prevention programs have been developed with the express purpose of facilitating students' successful adjustment to larger, more impersonal school environments (Bry, 1982; Felner, Ginter, & Primavera, 1982). In one such study, social support during the transition to a large urban high school with approximately 1700 students was manipulated by assigning entering students to changing or constant peer groups (Felner et al., 1982). In the changing peer group condition, students followed the typical high school format of changing peer groups for each academic class. In the constant peer group condition, students were with the same group of peers for all of their

academic classes. Mid-year and year-end evaluations demonstrated that, relative to students in the changing peer group condition, students in the constant peer group condition achieved better grade point averages, had better school attendance, and had more stable self-concepts (Felner et al., 1982). The constant peer group may have facilitated the formation and maintenance of supportive peer relationships, but peer relationships were not directly assessed.

The distinction between peer acceptance and peer rejection on the one hand, and friendship on the other, may be particularly important when assessing peer relationships in the context of the transition to high school. As noted previously, young adolescents' social cognitive abilities broaden about the time they make the school transition. With increased capacity for complex social reasoning, youth are able to make correspondingly complex differentiations between types of relationships (Berndt & Perry, 1986; Furman & Bierman, 1984). Youth expect friends, to a greater extent than acquaintances, to give and receive social support during stressful times. Thus, we might expect changes in friendships to be more central to youths' experience of stress during the transition to high school than changes in peer acceptance or rejection.

Further evidence to support this argument comes from examinations of the stability of peer acceptance and peer rejection, which have revealed that individuals tend to elicit relatively consistent reactions from peers over time and over peer groups. Prosocial and cooperative behaviors tend to elicit liking, whereas disruptive and aggressive behaviors tend to elicit dislike (Dodge, 1983). If an individual's salient behaviors are stable over time and/or peer groups, stability in that individual's level of

peer acceptance and rejection would be expected. Evidence indicates that, in fact, peer reactions are consistent across peer groups, emerging within three one-hour play sessions in small groups of previously unacquainted peers (Coie & Kupersmidt, 1983). Furthermore, peer acceptance and peer rejection are relatively stable over one-year periods, both when students change grades but not schools (Terry & Coie, 1991) and when students make the transition from smaller elementary schools to larger middle schools (Bukowski & Newcomb, 1984). This evidence suggests that any stress that might be associated with disruption of peer relationships during the transition from elementary school to high school is not specifically linked to changes in peer acceptance or rejection.

Friendships may be particularly susceptible to change during the transition to high school because, at the time of the transition, youth are experiencing significant biological and social changes, and members of friendship dyads may experience those changes at different rates. Youth tend to be friends with peers who are similar to themselves in terms of physical characteristics (Clark & Ayers, 1992), social cognitive skills (Kurdek & Krile, 1982), and interests (Berndt, 1982). Dissimilar rates of biological and social maturation may cause friends to drift apart, particularly when new and attractive social partners become available, as would likely be the case in the context of the large peer group encountered in high school.

Effects, if any, of the transition to high school on friendships are not well documented. Bukowski and Newcomb (1984) found that consistency of best friend nominations received was roughly equivalent across two six-month intervals during and following the transition to a larger middle school from smaller elementary schools. In the

transition and post-transition intervals, approximately one-quarter (0.26) and one-third (0.29), respectively, of the peers who nominated a target individual as a best friend at the end of the interval had also nominated the target individual at the beginning of the interval, six months previously. Thus, the stability of nominations of best friends was not markedly decreased in the transition interval relative to the post-transition interval. However, change in the identity of peers naming individuals as friends was occurring in both intervals, in that the number of new nominators was approximately three times larger than the number of repeat nominators.

When the composition of friendship circles change, two distinct types of change may be occurring, friendship formation and friendship loss. Friendship formation and friendship loss have not been extensively assessed, either during school transitions or within school years. The limited evidence that is available indicates that from kindergarten to Grade 4, the size of children's friendship networks expands somewhat over the school year (Berndt & Hoyle, 1985; Ladd, 1990). In this age range, then, children tend to form more new friendships than they lose over the course of a school year. In contrast, Grade 8 students in a non-transition school year have been observed to have fewer reciprocated friendships in the spring than in the fall (Berndt & Hoyle, 1985), indicating that young adolescents tend to lose more friends than they gain over the course of the school year.

In the context of a four week residential summer camp for 8- to 15-year-olds, friendship formation and friendship durability or maintenance (the inverse of friendship loss) were found to be relatively independent dimensions of friendship experience (Parker

& Seal, 1996). Rates of friendship formation during camp declined with age, whereas rates of friendship maintenance during camp increased with age. Regardless of age, total numbers of friendships declined by a marginal but significant amount over the course of camp (mean decrease = 0.12 friends). Taken together, Parker and Seal's (1996) results indicate that younger children were more likely than older children to replace lost friendships with new ones, which is consistent with age-related patterns observed in school-based studies (Berndt & Hoyle, 1985; Ladd, 1990). Thus, if the transition into high school does result in a disruption of friendships, adolescents may have difficulty replacing lost friendships with new ones, which may in turn lead to distress and/or difficulties in adjusting to the new school environment.

The transition to high school appears to be more stressful for girls than for boys, at least when it occurs at younger ages. Comparisons of Grade 7 students who entered larger junior high schools and Grade 7 students who remained in smaller Kindergarten to Grade 8 (K-8) schools indicated that girls entering junior high schools showed decrements in self-esteem relative to all boys and to girls remaining in K-8 schools (Simmons et al., 1979). Futhermore, the girls demonstrated ongoing decrements in self-esteem in Grade 10, when all participants had made the transition to larger high schools. In Grade 10, girls who made the transition to a larger school in Grade 7 continued to have lower self-esteem than all boys and the girls who remained in K-8 schools for Grade 7 (Blyth, Simmons, & Carlton-Ford, 1983). In summary, when the transition to a larger school occurs in Grade 7, girls experience lasting negative effects on their self-esteem.

The convergence of Simmons and colleagues' (Blyth et al., 1983; Simmons et al.,

1979) findings with findings regarding gender differences in friendship during early adolescence is striking. Test-retest stability of number of friends over the course of the Grade 8 year (fall to spring) is greater for boys than for girls (Berndt & Hoyle, 1985). Further, the association between number of friends in the fall and stability of specific friendships over the Grade 8 year is positive and moderate for boys but negative and small for girls (Berndt & Hoyle, 1985). Thus, it appears that girls experience greater changes in their friendship networks than do boys during early adolescence. Greater changes in friendship may, in turn, make the transition to high school more stressful for girls than for boys.

However, observations of gender differences in friendship across studies are inconsistent. Adolescent boys and girls have similar numbers of friends on average (Berndt, 1982; Berndt & Hoyle, 1985), and consistency of friendship nominations received during and following the transition to high school is similar for boys and girls (Bukowski & Newcomb, 1984). Gender has been associated with durability of friendship in some studies (e.g., Degirmencioglu, Tolson, & Urberg, 1993) but not in others (e.g., Berndt & Hoyle, 1985). A focus on temporal aspects of friendships, particularly on rates of friendship formation and friendship maintenance, may help clarify these inconsistencies.

Throughout the present study, gender differences in temporal aspects of friendship were examined. In early adolescence, most close friendships are same-gender (Clark & Ayers, 1992), and girls focus on loyalty and commitment in friendship to a greater extent than do boys (Berndt, 1986; Bigelow & LaGaipa, 1980; Bukowski et al., 1987). In light

of these associations between gender and friendship, aspects of the study concerned with changes in perceptions of friendship qualities during friendship formation were restricted to examinations of same-gender relationships only.

The Present Study

Youth were followed as they made the transition from Grade 6 in smaller elementary schools into Grade 7 in one larger high school. Youth were tested on six occasions, once at the end of Grade 6, four times in the fall of Grade 7, and again at the end of Grade 7. Peer acceptance, peer rejection, and friendships were assessed on each occasion. Upon entry to Grade 7, youth were asked to identify previously unfamiliar peers with whom they thought they might become friends. Participants' perceptions of their relationships with those peers were systematically followed throughout Grade 7.

The first objective of the present study was to examine temporal features of youths' peer relationships during the transition to high school. Previous research (Bukowski & Newcomb, 1984; Terry & Coie, 1991) has indicated that peer acceptance and peer rejection are relatively stable across time and peer groups and it was, therefore, expected that these dimensions of peer experience would not be affected by the transition to high school. With regard to friendship it was expected, on the basis of previous research with young adolescents (Berndt & Hoyle, 1985; Parker & Seal, 1996), that the size of friendship networks would decline over the school year. Conclusions from previous research regarding gender differences in friendship stability and change were mixed (Berndt & Hoyle, 1985; Bukowski & Newcomb, 1984), making specific predictions difficult. However, given evidence that girls experience greater distress than

boys when making the transition to high school in Grade 7 (Simmons et al., 1979; Simmons et al., 1987), it was expected that girls' friendships would undergo more changes than boys. Furthermore, it was expected that an explicit focus on patterns of friendship formation and friendship maintenance would help clarify inconsistent gender differences noted in extant literature (Berndt & Hoyle, 1985; Bukowski & Newcomb, 1984).

The second objective of the present study was an examination of the earliest phases of friendship formation. Based on theory regarding the dynamics of relationships and evidence from existing literature on relationship development in childhood, adolescence, and adulthood, some specific predictions were made. First, personal characteristics are expected to influence relationship development (Levinger & Levinger, 1986), and peer acceptance and peer rejection are thought to reflect relatively stable behavioral characteristics of individuals (Coie & Kupersmidt, 1983). There is evidence that peer acceptance is directly antecedent to participation in friendship while peer rejection is only indirectly linked to friendship participation (Bukowski et al., 1996). Therefore, it was expected that peer acceptance would be a salient characteristic guiding the selection of potential friends, whereas peer rejection would not. Second, because there is evidence that interactions occurring early in acquaintanceship predict relationship outcomes (Berg & Clark, 1986; Gottman, 1983; Hays, 1985), it was expected that early perceptions of relationships that later did versus did not become mutual friendships would differ. Specifically, it was expected that relationships that later became friendships would be perceived as providing more companionship and help and would be perceived

as closer and more secure than relationships that did not later become friends. Third, because youths' retrospective reports of events that led to deepening of particular friendships indicate that positive interactions promote friendship (Berndt, 1986; Bigelow & LaGaipa, 1980), it was expected that perceptions of positive relationship qualities would increase as relationships made the transition from acquaintanceship to mutual friendship, and continue to increase during the first months of friendship. Fourth, because youths' retrospective and prospective reports identify conflict as a primary source of relationship difficulties (Berndt, 1986; Berndt et al., 1986; Bigelow & LaGaipa, 1980), it was expected that high levels of conflict would inhibit relationship development and would moderate or be moderated by the influence of positive friendship features. Specific hypotheses about the dynamic role of conflict in friendship development were not formulated, but it was expected, for example, that a relationship may not progress to friendship if initially satisfactory levels of companionship were marred by high levels of conflict. Alternatively, if dyad members were able to make each other feel secure in their relationship, the relationship may successfully develop into a reciprocated friendship despite high levels of conflict.

Methods

Overview of Research Design

In this prospective study of friendship formation, participants were followed as they made the transition from Grade 6 at six smaller elementary schools into Grade 7 at one larger high school. The high school was located in a town in the Laurentians, north of Montreal, Quebec, and drew students from elementary schools in that town and surrounding villages. The elementary schools were geographically separated, which made it unlikely that students would have had opportunities to form friendships with students from other elementary schools prior to entry into high school. Friendships formed in Grade 7 between peers from different elementary schools were very likely to be new friendships and were, therefore, appropriate targets for the study of the initial phases of friendship formation.

Data collection occurred in six waves. Time 1 data collection occurred in May, 1992, near the end of participants' Grade 6 year. Time 2 data collection occurred in September, 1992, three weeks after classes commenced for the fall semester of Grade 7. Data collection continued on a monthly basis throughout the fall semester; Time 3 in October, Time 4 in November, and Time 5 in December. Time 6 data collection occurred in May, 1993, near the end of participants' Grade 7 year and a full calendar year after Time 1.

Participants

General description. Ages of the 102 Time 2 participants, as assessed at Time 2, ranged from 11 to 14 years, $M = 12.3$, $SD = 0.63$, with a modal age of 12 years.

Participants attended English-language schools in rural Quebec. At the time of testing, language laws in Quebec were such that students attending English-language schools were primarily from families in which the parents attended English-language schools in Canada and spoke English at home. Consequently, few recent immigrants or Francophones attended participating schools. School personnel reported that families in the schools' region were from a wide range of socioeconomic status, from lower class to upper-middle class. The high school which participants attended offered Grades 7 through 12, and some facilities (e.g., cafeteria) were shared with an adjoining Francophone high school.

Participation rates and sample size. A total of 140 students (73 girls and 67 boys) participated over the course of the study. Numbers of students participating and participation rates at each time of testing are summarized in Table 1. Participation rates are important when assessing mutual friendship because friendship nominations of nonparticipants can not be assessed for mutuality, resulting in underestimates of numbers of mutual friendships. In this study, the participation rates at Times 1, 5, and 6 were a bit lower than rates at Times 2 through 4, and numbers of mutual friendships at those times may be underestimated relative to Times 2 through 4. Thirty-four of the 118 students who participated at Time 1 were lost to follow-up (32 did not attend the target high school and 2 withdrew from the study), leaving 84 students (41 boys, 43 girls) who continued in the study from Time 1 to Time 2. Time 2 recruitment drew 18 new participants (10 boys, 8 girls), for a total sample at Time 2 of 51 boys and 51 girls. Minor changes in the composition of the sample occurred at Times 3 through 6, due to small

Table 1

Number of Participants and Participation Rates

Time of testing	Number of participants		Rate (%)
	Boys	Girls	
1. May of Grade 6	55	62	67
2. Sept. of Grade 7	51	51	75
3. October of Grade 7	52	51	76
4. November of Grade 7	48	50	72
5. December of Grade 7	46	47	68
6. May of Grade 7	46	47	68

Note. For Time 1, rate equals the number of participants divided by the total number of students in participating classrooms. For Times 2 through 6, rate equals the number of Grade 7 participants tested at that time divided by the total number of Grade 7 students at the high school.

numbers of youth being absent from school on testings days or withdrawing from the study (see Table 1). A total of 66 students (33 boys, 33 girls) participated in all phases of the study.

Procedures

Informed consent. Permission to carry out the study was first obtained from the school district, then from principals and teachers at participating schools. After teacher permissions were obtained, the research team made brief presentations in Grade 6 classrooms to describe the project to students. Letters describing the project were distributed to the students immediately following the in-class presentations. Students were asked to deliver the letters to their parents and, if they and their parents agreed to their participation in the study, to have their parents sign and return the consent form enclosed with the letter (see Parent Consent Letter, Appendix A). This process was repeated at the beginning of Grade 7, to recruit students who did not attend schools which participated in the Time 1 data collection. At each time of testing, students with parental consent to participate were asked to give signed assent to participation prior to completion of questionnaires (see Participant Assent Letter, Appendix B).

Questionnaire administration. Questionnaires were group-administered during a 50-minute homeroom period. Non-participating students and teachers left the classrooms during testing. A minimum of two members of the research team remained in each classroom to assist with questionnaire administration. Before completing the questionnaires, students were reminded to keep their work private. Students worked through the questionnaires at their own pace and most were able to complete the

questionnaires in the 50-minute period. At Time 2, however, some participants were unable to complete all the questionnaires they were given, many of which were unrelated to the present study. To improve completion rates, the number of questionnaires administered was reduced at Times 3 through 6.

Measures

Sociometric nominations. At each of Times 1 through 6, sociometric nominations were used to assess friendship, peer acceptance, and peer rejection. Participants were asked to identify their friends (positive nominations) and peers with whom they did not like to spend time (negative nominations). Up to eight positive and eight negative nominations were allowed, and participants were asked to rank order their nominations (see Appendix C). In Grade 6, participants spent most of the school day with the same group of classmates, and participants were given lists of participating classmates from which to make their nominations at Time 1. At Time 1, class sizes ranged from 12 to 23 participating students. In Grade 7, participants were with different groups of classmates for different courses, and lists of all participating students (n = 102 at Time 2) were provided for nominations at Times 2 through 6. Class size was not significantly correlated with number of friendships at Time 1, r (104) = .09, making a correction to adjust for class size unnecessary. Eleven participants (3 boys and 8 girls) did not complete sociometric nominations at Time 1 because their classroom groups were too small to yield valid nomination data.

Identification of target peers. To permit prospective study of friendship formation, participants were asked to identify potential friends. At Time 2 (September of

Grade 7), participants were asked to review the list of participating Grade 7 students and circle the names of three or fewer same-gender target peers (TPs) who they had just met and with whom they thought they would become friends (see Appendix D). Cross-gender choices were not allowed to avoid confounding friendship with romantic interests and to reduce the number of factors in the research design. Evidence that participants knew a TP prior to entry to Grade 7 made that TP inappropriate for the purposes of this study. Grade 6 class lists and Time 1 positive and negative sociometric nominations were examined for evidence of previous familiarity between participants and each of the peers they identified as TPs. Of the 51 boys and 51 girls who participated at Time 2, 89 (41 boys and 48 girls) identified at least one appropriate TP. The remaining 13 participants (10 boys and 3 girls) either failed to identify TPs or identified other-gender peers, nonparticipating peers, and/or peers they knew in Grade 6. At each of Times 2 through 6, participants were asked to rate their perceptions of the qualities of their current relationships with their TPs. To facilitate these ratings, participants were given, at each of Times 3 to 6, a list of the names of the TPs they identified at Time 2. Because the number of questionnaires administered had to be reduced after Time 2, participants who had identified three appropriate TPs were asked at Time 3 to select the two with whom they thought friendship was most likely and rate only those relationships. In addition to this reduction of TP ratings, which was requested by the researchers, many participants subsequently stopped reporting perceptions of one or more of the TP relationships they had identified at Time 2. Participants seemed to dislike completing the questionnaires if a relationship was no longer of interest to them. In summary, at Times 3 through 6,

participants rated perceived qualities of no more than two TP relationships, and many participants rated fewer than two.

Perceptions of target peer relationships. The Friendship Qualities Scale (FQS; Bukowski et al., 1994) was used to assess participants' perceptions of the qualities of each TP relationship at each of Times 2 through 6. The FQS assesses five dimensions of perceived friendship quality. **Companionship** items reflect the amount of free time spent with the friend, **Help** items reflect mutual assistance, **Closeness** items reflect feelings for the friend, **Security** items reflect trust in the relationship, and **Conflict** items reflect the extent of conflict within the relationship. Each item describes a specific behavior or feeling (e.g., "If I have a problem at school or at home I can talk to my friend about it") and the respondent rates his/her agreement with each item on a 5-point scale (1 = "not true" to 5 = "very true"). The FQS has good internal consistency and successfully differentiates mutual and nonmutual relationships (Bukowski et al., 1994). Given that participant-TP relationships were not necessarily mutual friendships, FQS items were modified so that the word "friend" was replaced by a blank (see Appendix E). When completing the 23-item Target Peer FQS (TP-FQS), participants were asked to write the name of their TP at the top of the questionnaire and to pick responses that described "how you and he/she get along right now". The TP-FQS was scored to yield two subscale scores: Positive Qualities and Conflict. The **Positive Qualities** subscale was a composite of the FQS's original Companionship, Help, Closeness, and Security subscales. Use of the composite score was necessary because the four subscales contributing to it were poorly differentiated in the present sample where, for the first TP rated at Time 2,

interscale correlations ranged from .67 to .81, with an average r = .77. Positive Qualities and Conflict subscales were not significantly correlated, r (97) = -.01, ns, as assessed for Time 2 ratings of each participants' first-named TP. Internal consistency as estimated by Cronbach's alphas for Time 2 ratings of the first-named TP relationship were .95 for the 18-item Positive Qualities subscale and .79 for the 5-item Conflict subscale. Similar interscale correlations and internal consistency estimates were obtained across time and TP relationship.

Data Preparation and Scoring

Peer acceptance and peer rejection. To index **peer acceptance**, numbers of positive nominations received were converted to z-scores within each nominating group. To index **peer rejection**, numbers of negative nominations received were converted to z-scores within each nominating group. Respectively, these scores correspond to what Coie, Dodge, and Coppotelli (1982) referred to as "liked most" and "liked least" scores. At Time 1, the nominating group consisted of the individual student's participating classmates. At Times 2 through 6, the nominating group consisted of all participants.

Friendship reciprocity. Positive sociometric nominations were used to identify friendships existing among participants at each of Times 1 through 6. **Reciprocated friendships** were defined as those in which two participants gave mutual positive nominations (e.g., A nominated B and B nominated A). Positive nominations of nonparticipants could not be scored for friendship reciprocity.

Best friendship. Rank ordering of positive nominations permitted identification of youth who participated in best friendships. **Best friendship** was scored as **present** when

the participant's first-ranked positive nomination was reciprocated with a first- or second-ranked positive nomination. Best friendship was scored as **absent** if this criterion was not met.

Familiarity. Each friendship formed during Grade 7 was coded for previous familiarity between members of the friendship dyad. **Previous familiarity** was scored if the participant and his/her friend attended the same elementary school, whereas **previous unfamiliarity** was scored if the participant and his/her friend attended different elementary schools.

Counts of friendships. Friendship reciprocity and familiarity scores were used to derive counts of nominated and reciprocated friendships. The first count, **total number of friends**, reflected the total number of friendships each participant nominated or reciprocated at each of Times 1 through 6. For Times 2 through 5 (the fall term of Grade 7), total number of friendships was further subdivided into counts of old, new-familiar, and new-unfamiliar friendships. **Old friendships** were nominated and/or reciprocated in May of Grade 6 (Time 1). **New-familiar friendships** were neither nominated nor reciprocated at Time 1 but were with peers who attended the same elementary school as the nominating participant. **New-unfamiliar friendships** were neither nominated nor reciprocated at Time 1 and were with peers who attended elementary schools other than the one attended by the nominating participant.

Counts of the **onset of new friendships** were derived by comparing lists of each participant's reciprocated friendships at each of Times 2, 3, 4, and 5 to lists of their previously existing reciprocated friendships. Friendships reciprocated for the first time

were counted as new friendships, and familiarity between the participant and his/her friend was noted, such that each participant received two onset scores for each of Times 2 through 5. One score reflected the **number of new friendships with previously familiar peers**, and one reflected the **number of new friendships with previously unfamiliar peers**. For these two scores, friendships which were reciprocated at one time of testing, unreciprocated at the next time of testing, then subsequently reciprocated were counted as new friendships only at the time of first reciprocation (e.g., if a friendship was reciprocated at Time 2 and Time 4, but not Time 3, it was counted as a new friendship only at Time 2).

Elementary school size. For analyses of counts of new friendships with previously familiar and previously unfamiliar peers, it was necessary to take into account the size of youths' elementary schools. Youth from smaller schools had, relative to youth from larger schools, fewer previously familiar and more previously unfamiliar peers with whom friendships might be formed after the transition to high school. Consequently, elementary school size was coded as **large** or **small**. The one **large** elementary school sent 38 participating students to the high school, whereas two **small** elementary schools sent 17 and 19 participating students to the high school, respectively. Three schools which each sent four or fewer participating students to the high school were not coded for size.

Target peer (TP) relationships. Outcomes of participant-TP relationships were scored using information from sociometric nominations. For each of Times 2 through 6, each participant-TP relationship was scored as being **reciprocated** or **unreciprocated**,

using the method outlined above for identifying reciprocated friendships.

Results

Overview of Analytic Strategies

Organization of Results

The results are described in three main sections. The first objective of the study, an examination of temporal features of peer relationships during the transition to high school, is covered in the first section. Sociometric data were evaluated to assess temporal features of peer acceptance, peer rejection, and friendship during the transition from elementary to high school. The second objective of the study, an examination of the earliest phases of friendship formation based on youths' predictions of friendship with same-gender TPs they met upon entry to high school, is covered in the second and third sections. In the second section, characteristics of those chosen as TPs are described, as are outcomes of participant-TP relationships. In the third section, friendship formation is assessed prospectively by examining perceptions of the qualities of participant-TP relationships in the early phases of friendship development.

Missing Data and Tests of Assumptions

The extent of missing data varied across time and variables; consequently subsamples used in each analysis are clearly specified and, in some instances, assessed for representativeness. All variables were screened for outliers and skewness as appropriate for the type of analyses used. If corrections were necessary, they are documented at the place where specific analyses are described. Tests of the assumptions underlying analysis of variance (ANOVA) procedures are presented in appendices, along with the corresponding ANOVA source tables. The reader is referred to the appropriate

appendices throughout.

Temporal Features of Peer Relationships During the Transition to High School

Overview

In this section, temporal features of peer acceptance, peer rejection, and friendship during the transition to high school are assessed using indices derived from sociometric nominations. Initially, the focus is on stability of peer acceptance, peer rejection, number of friends, and presence of a best friend. Subsequently, questions about friendship formation and maintenance are addressed.

Test-retest Stability of Peer Acceptance, Peer Rejection, Number of Friends, and Presence of a Best Friendship

Analytic strategies. Effects of gender and the school transition on test-retest stability of peer acceptance, peer rejection, number of reciprocated friendships, and presence of a best friend were examined. Test-retest correlations were calculated for two six-month intervals, one including the school transition (May of Grade 6 to November of Grade 7; Time 1 to Time 4) and the other following the transition (November to May of Grade 7; Time 4 to Time 6). Boys' and girls' correlations were first compared within each interval, to assess whether there were gender differences in test-retest stability for that interval. After gender effects had been tested, effects of the school transition were assessed by comparing test-retest correlations for the transition versus post-transition intervals. Tests of the effects of the school transition varied depending on whether boys'

and girls' test-retest correlations differed within intervals. Specifically, when significant gender differences were observed within either interval, effects of the school transition on test-retest stability were tested for boys and girls separately. If gender differences were nonsignificant, effects of the school transition on test-retest stability were tested for boys and girls together. Gender effects were assessed by calculating z-tests for comparing correlations from independent samples (Cohen & Cohen, 1983), whereas effects of the school transition were tested using z-tests for comparing correlations from dependent samples (Meng, Rosenthal, & Rubin, 1992).

Sample selection and power analysis. The sample for these analyses comprised the 66 participants (33 boys, 33 girls) who completed sociometric nominations at each of Times 1 through 6. With this sample size and $\alpha = .05$, two-tailed, power to detect large effect sizes in tests of gender effects was approximately .50, considerably lower than the recommended level of .80 (Cohen, 1988). Therefore, the power of tests of gender effects was sufficient (i.e., approximately .80 or greater) to detect only very large effects. Power analysis techniques are not available for Meng et al.'s (1992) test of differences of correlations from dependent samples, but it was expected that only large effects of the school transition would be detected with the sample size available.

Data screening. Data screening revealed the presence of outlying scores for both peer acceptance and peer rejection. Consequently, extremely high scores were lowered to fall three standard deviations above their means. Adjustment of outlying scores was not sufficient to eliminate significant positive skewness in the distributions of peer rejection scores. Thus, peer rejection scores were subjected to square root transformations, which

eliminated significant skewness.

Gender differences. Test-retest correlations for the transition and post-transition intervals for each of peer acceptance, peer rejection, number of reciprocated friendships, and presence of best friendship, by gender, appear in Table 2. A significant gender difference was observed for number of reciprocated friendships during the transition interval, for which boys' test-retest correlation was significantly larger than girls' test-retest correlation, $z = 3.52$, $p < .001$. This indicates that boys showed greater consistency in number of reciprocated friendships during the transition to high school than did girls. No gender differences were observed for test-retest consistency of number of friends during the post-transition interval, or for peer acceptance, peer rejection, or presence of best friendship in either of the transition or post-transition intervals, but power was too low to detect small-, medium-, or large-sized effects.

Effects of the school transition. Test-retest correlations of peer acceptance, peer rejection, and presence of a best friendship for transition and post-transition intervals appear in Table 3. Test-retest stability of peer acceptance was significantly lower during the transition interval than during the post-transition interval. This indicates that youth experienced more fluctuation in their levels of peer acceptance during the transition to high school than during the post-transition period. Test-retest stabilities of peer rejection and presence of best friendship appeared unaffected by the school transition, but power was too low to detect small- or medium-sized effects. Effects of the school transition on stability of number of reciprocated friendships were examined separately for boys and girls. For boys, test-retest correlations for number of friendships during the transition and

Table 2

Test-retest Correlations for Transition and Post-transition Intervals as a Function of Gender

	Gender	
Test-retest interval	Boys	Girls
	Peer acceptance	
T1/T4	.41	.22
T4/T6	.64	.55
	Peer rejection	
T1/T4	.47	.74
T4/T6	.75	.56
	Number of reciprocated friendships	
T1/T4	$.58_a$	$-.24_a$
T4/T6	.53	.41
	Presence of best friendship	
T1/T4	-.06	-.16
T4/T6	.32	-.03

Note. n = 33 boys and 33 girls. T1/T4 represents the transition interval. T4/T6 represents the post-transition interval. Across rows, correlations with the same subscript were significantly different at $p < .001$.

Table 3

Test-retest Correlations for Peer Acceptance, Peer Rejection, and Presence of Best Friendship as a Function of Interval

	Test-retest interval		
Measure	T1/T4	T4/T6	z
Peer acceptance	.32	.59	-2.56*
Peer rejection	.57	.66	-0.95
Best friendship	-.09	.14	-1.37

Note. n = 66 (33 boys, 33 girls). T1/T4 represents the transition interval. T4/T6 represents the post-transition interval.

* $p < .01$.

post-transition intervals did not differ, $z = 0.33$, ns. For girls, test-retest consistency was significantly lower during the transition interval than during the post-transition interval, $z = -2.59$, $p < .01$ (see Table 2). For girls, but not boys, the school transition was associated with fluctuations in numbers of reciprocated friendships.

Participation in Best Friendships

Analytic strategies, sample selection, and power analysis. To determine whether the proportion of youth who participated in best friendships changed over the school year, proportions of youth with best friends at each of Times 1 through 6 were compared. Because best friendship is a dichotomous variable (i.e., present or absent), nonparametric statistical tests were used. Before testing effects of time, gender effects were examined and ruled out. Specifically, proportions of boys and girls with best friendships at each time of testing were compared using z-tests for two independent proportions (Moore & McCabe, 1993). At $\alpha = .05$, two-tailed, and $n = 33$ per gender, power to detect large gender effects was above .80 (Cohen, 1992), and none were detected, all zs < 1.80, ns. Consequently, gender was not a factor in subsequent analyses. Effects of time on the proportion of youth who had best friendships were tested using a Cochran Q-test for related samples, with post-hoc sign tests (Siegel, 1956). The sample for this analysis comprised the 33 boys and 33 girls who completed sociometric nominations at each of Times 1 through 6, yielding sufficient power to detect medium- to large-sized effects at $\alpha = .05$, two-tailed (Cohen, 1992).

Effects of time on participation in best friendships. Numbers and proportions of participants who participated in best friendships at each time of testing appear in Table 4.

Table 4

Numbers and Proportions of Participants with Best Friendships as a Function of Time

	Time					
	1	2	3	4	5	6
Number	44	31	31	29	29	38
Proportion	0.67	0.47	0.47	0.44	0.44	0.58

Note. n = 66 (33 boys, 33 girls). Proportions equal numbers of participants with best friendships divided by sample size.

A Cochran Q-test for related samples indicated that there were significant differences over time in the proportions of youth who had best friendships, $Q(5) = 13.0$, $p < .05$. Follow-up pairwise comparisons based on the sign test (Siegel, 1956) indicated that the significant effect of time on best friendship status was due to changes which occurred in the interval between Time 1 and Time 2, $z = 1.97$, $p < .05$. Specifically, the proportion of youth who participated in best friendships decreased significantly from the end of Grade 6 to the beginning of Grade 7, and did not increase significantly during Grade 7.

Number of Friendships

Analytic strategies. To assess patterns of friendship formation and maintenance during the transition to high school, numbers of friendships were examined. First, numbers of friendship nominations made and numbers of reciprocated friendships at each time of testing were examined to determine whether the school transition was associated with changes in total numbers of friendships. Second, the composition of friendship circles during the fall term of Grade 7 was considered by examining nominations of and reciprocated friendships with old friends, previously familiar peers, and previously unfamiliar peers. By tracking the composition of friendship circles over the fall term, patterns of maintenance of pre-existing friendships and formation of new friendships could be examined. Third, timing of the onset of new friendships during the fall term was examined to determine whether friendship formation varied as a function of gender, previous familiarity between members of new friendship dyads, and/or length of time since entry into the high school peer group.

Sample selection and power analysis. The initial sample for these analyses

comprised the 33 boys and 33 girls who had sociometric data for Times 1 through 6. Power analysis techniques for repeated measures designs are not well-developed and techniques for mixed-model ANOVAs are not available (Stevens, 1992). For one-way repeated measures ANOVA with six repeated measures, $\alpha = .05$, and $\underline{n} = 33$, power was sufficient to detect medium effect sizes (Stevens, 1992). For one-way between-subjects ANOVAs with two groups, $\alpha = .05$, and $\underline{n} = 33$ per group, power was sufficient to detect large effect sizes (Cohen, 1992). Whether these power estimates accurately reflect power of the mixed-model ANOVAs presented in the following sections is unknown. It was assumed that (a) tests of repeated measures would be more powerful than tests of between-subjects effects, and (b) power was sufficient to detect large, but not small or medium, effects.

Total number of friendships. Total number of friendships nominated and reciprocated at each of Times 1 through 6 were examined as a function of Gender and Time. Ideally, numbers of nominations made at each time of testing would have been used as covariates, to determine whether differences in numbers of nominations accounted for differences in numbers of reciprocated friends. However, the univariate analysis of covariance (ANCOVA) approach could not be used because the data did not meet the assumption of homogeneity of covariance (sphericity) or the assumption of homogeneity of regression slopes (i.e., Gender interacted with number nominated to predict number reciprocated). Consequently, the analysis was conceptualized as a 2 (Gender) by 6 (Time) doubly-multivariate MANOVA. In this setup, linear variates reflecting numbers of peers nominated as friends (Nominated) and number of

reciprocated friends (Reciprocated) served as multiple dependent variables. Following significant multivariate results, stepdown F-tests, which are covariate analyses based on linear variates rather than individual dependent variables, were used as post-hoc tests (Tabachnick & Fidell, 1996). The assumption of homogeneity of regression slopes for stepdown F-tests was assessed and met (see Appendix F, Table F2). A limitation of the doubly-multivariate approach is that means of individual dependent variables can not be explicitly compared.

Mean numbers of peers nominated as friends and mean numbers of reciprocated friendships, for each time of testing, are plotted in Figure 1 (see Appendix F, Table F1, for means and standard deviations). The combined dependent variables were significantly associated with both Time, F (10, 55) = 4.20, $p < .001$ (partial $\eta^2 = .43$[1]), and the Gender by Time interaction, F (10, 55) = 2.26, $p < .05$ (partial $\eta^2 = .29$), but not with Gender, F (2, 63) = 1.95, ns (see Appendix F, Table F2). Results of stepdown F-tests for the Time and Gender by Time effects are summarized in Table 5. The Time effect on the linear variate Reciprocated retained significance after the linear variate Nominated was covaried, indicating that number of friendships varied as a function of Time even when number of nominations was controlled. As can be seen in Figure 1, there was a slight decline in total number of friendships over the school year. The Gender by Time interaction on the linear variate Reciprocated did not retain significance after the linear

[1] Partial η^2 is a measure of effect size for ANOVA procedures and reflects the proportion of variance in the dependent variable accounted for by the independent variable, controlling for effects of other independent variables.

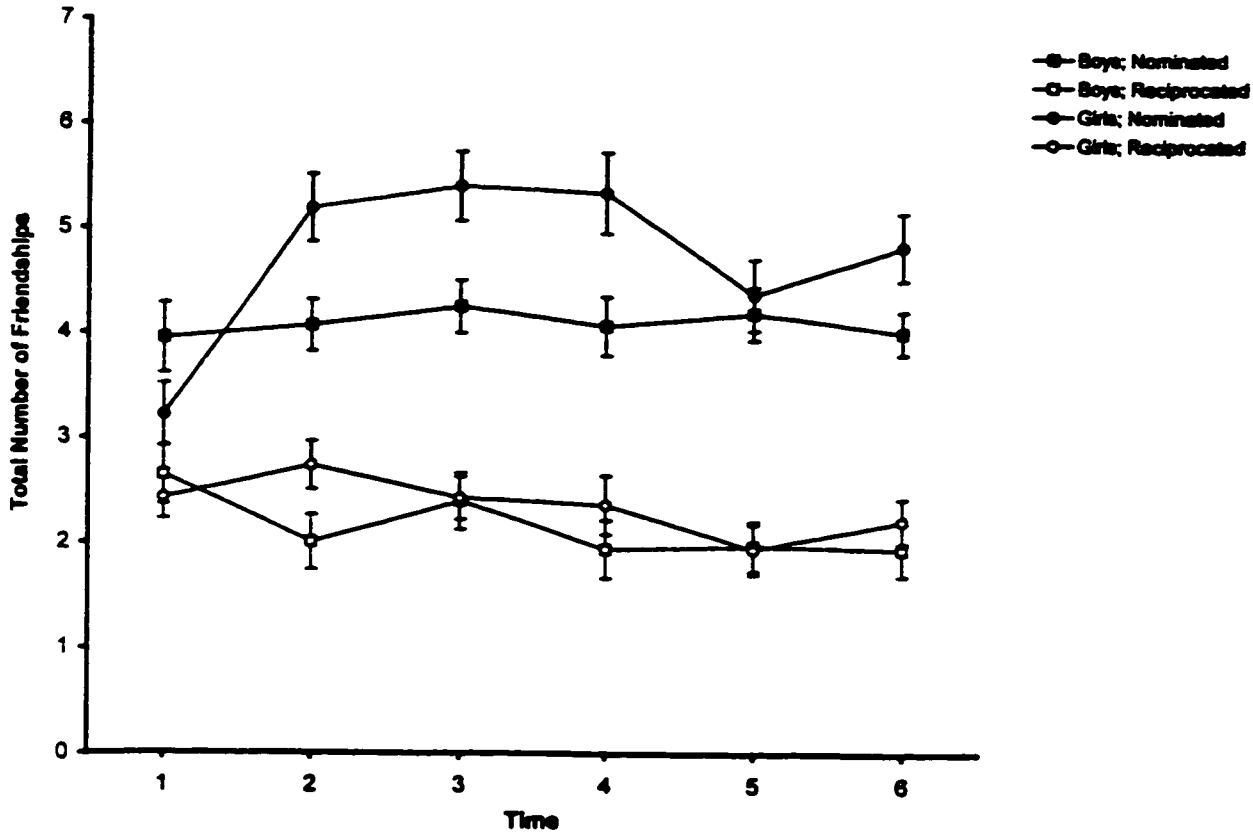

Figure 1. Mean number of all nominated and reciprocated friendships as a function of gender and time (n = 33 boys and 33 girls).

Table 5

Summary of Stepdown F-tests for Significant Multivariate Effects: Total Number of Friendships

IV	Variate	Univariate F	df	Stepdown F	df	α
Time	Nominated	8.70[a]	5/320	8.70**	5/320	.025
	Reciprocated	3.00[a]	5/320	4.77**	5/319	.025
G x T	Nominated	6.49[a]	5/320	6.49**	5/320	.025
	Reciprocated	1.80	5/320	0.93	5/319	.025

Note. IV = independent variable; Variate = linear combination of dependent variables; G x T = Gender by Time.

[a] Significance level can not be evaluated but would reach $p < .05$ in univariate context.

** $p < .01$.

variate Nominated was covaried, indicating that the multivariate Gender by Time effect was entirely attributable to differences in the number of peers chosen as friends. It is apparent in Figure 1 that, relative to boys, girls nominated fewer friends at Time 1 and more friends at Times 2 through 4, but that boys and girls nevertheless had similar numbers of reciprocated friendships at each time of testing. In summary, results indicated that although boys and girls nominated different numbers of peers as friends, there were no gender differences in number of reciprocated friendships. There was, however, a slight decline in numbers of reciprocated friendships over the school year for both boys and girls.

Composition of friendship circles during fall term. We have seen that boys and girls did not differ in terms of total numbers of friendships. To further investigate stability and change in youths' friendship circles during the fall term of Grade 7, when youth were adjusting to their new peer group, friendship nominations and reciprocated friendships were classified into types, as follows. **Old** nominations and reciprocated friendships were present in May of Grade 6 and continued into Grade 7. **New-familiar** nominations and reciprocated friendships began in Grade 7 and were with peers who attended the same elementary school as the target youth. **New-unfamiliar** nominations and reciprocated friendships began in Grade 7 and were with peers who attended elementary schools other than that attended by the target youth. These different types of friendship were largely uncorrelated (see Appendix F, Table F3). Analysis of the composition of friendship circles in this manner highlighted patterns of friendship nominations and reciprocity once youth from different elementary schools entered the shared high school environment. Size of elementary school was included as a factor in

analyses of new-familiar and new-unfamiliar nominations and reciprocity because youth from the smaller elementary schools had, relative to youth from the one larger elementary school, a smaller pool of previously familiar peers and a larger pool of previously unfamiliar peers with whom they might establish new friendships. The initial sample for the analyses were the 33 boys and 33 girls who had sociometric data for each of Times 1 through 6. Two boys were excluded because the elementary school they attended sent most of its students to a different high school and they had limited opportunities to maintain Grade 6 friendships into Grade 7 and/or form new friendships with previously familiar peers. Separate analyses were done for each type of friendship (old, new-familiar, and new-unfamiliar). As for analysis of total number of friendships, the ANCOVA approach could not be used because of violations of the homogeneity of covariance and homogeneity of regression slopes assumptions. Thus, the analyses were conceptualized as doubly multivariate MANOVAs, with linear variates reflecting number of peers nominated (Nominated) and number of reciprocated friendships (Reciprocated) as multiple dependent variables. Stepdown F-tests were used to interpret significant multivariate results.

Old friendships. The extent to which Grade 6 friendships were maintained in Grade 7 is reflected in the number of old friends nominated and reciprocated during the fall term of Grade 7. Means for nominations of and reciprocated friendships with old friends, as a function of Gender and Time, are plotted in Figure 2 (means and standard deviations are given in Appendix G, Table G1). All of the effects in the 2 (Gender) by 4 (Time) doubly-multivariate MANOVA were significant, Time, F (6, 57) = 6.54, $p < .001$ (partial $\eta^2 = .41$), Gender, F (2, 61) = 4.10, $p < .05$ (partial $\eta^2 = .12$), and the Gender by

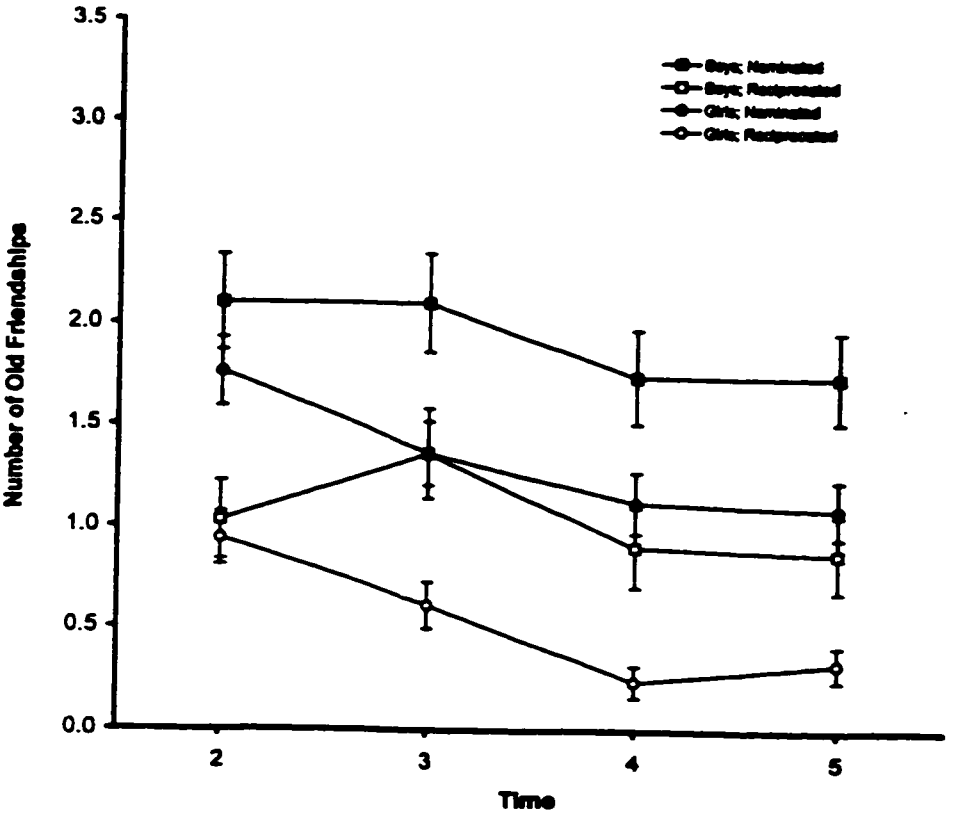

Figure 2. Mean number of nominated and reciprocated old friendships as a function of gender and time (n = 31 boys and 33 girls).

Time interaction, F (6, 57) = 2.40, $p < .05$ (partial $\eta^2 = .20$; see Appendix G, Table G2). Stepdown F-tests for all effects are summarized in Table 6, but only the interaction effect was interpreted. Stepdown F-tests revealed that the Gender by Time interaction was due entirely to the linear variate Reciprocated. As can be seen in Figure 2, girls demonstrated a more or less steady decline in number of old friendships over time, whereas boys friendships with old friends increased from Time 2 to Time 3 and then decreased. Boys and girls had similar numbers of old friends at Time 2 but for the remainder of the term, girls maintained fewer old friendships than boys.

New-familiar friendships. The extent to which youth sought out new friendships with peers who were familiar from Grade 6 is reflected in numbers of new-familiar friendships. Means for new-familiar choices and friendships are plotted as a function of Time in Figure 3 (means and standard deviations appear in Appendix H, Table H1). The 2 (Gender) by 2 (Elementary Size) by 4 (Time) MANOVA indicated that the combined dependent variables were not related to Gender, Elementary Size, Time, or their interactions (see Appendix H, Table H2).

New-unfamiliar friendships. The extent to which youth sought out new friendships with peers from other elementary schools is reflected in numbers of new-unfamiliar friendships. Means for new-unfamiliar choices and friendships, for boys and girls separately, are plotted in Figures 4 and 5 (means and standard deviations appear in Appendix I, Table I1). The 2 (Gender) by 2 (Elementary Size) by 4 (Time) MANOVA revealed that the combined dependent variables were significantly related to Gender, F (2, 59) = 8.17, $p < .001$ (partial $\eta^2 = .22$), Time, F (6, 55) = 3.22, $p < .01$ (partial $\eta^2 = .26$), and the three-way interaction of Gender by Elementary Size by Time, F (6, 55) = 3.49,

Table 6

Summary of Stepdown F-tests for Significant Multivariate Effects: Old Friendships

IV	Variate	Univariate F	df	Stepdown F	df	α
Gender (G)	Nominated	6.72[a]	1/62	6.72**	1/62	.025
	Reciprocated	6.63[a]	1/62	1.43	1/61	.025
Time (T)	Nominated	7.51[a]	3/186	7.51**	3/186	.025
	Reciprocated	15.56[a]	3/186	8.71**	3/185	.025
G x T	Nominated	0.90	3/186	0.90	3/186	.025
	Reciprocated	6.31[a]	3/186	5.57***	3/185	.025

Note. IV = independent variable; Variate = linear combination of dependent variables.

[a] Significance level can not be evaluated but would reach $p < .05$ in univariate context.

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

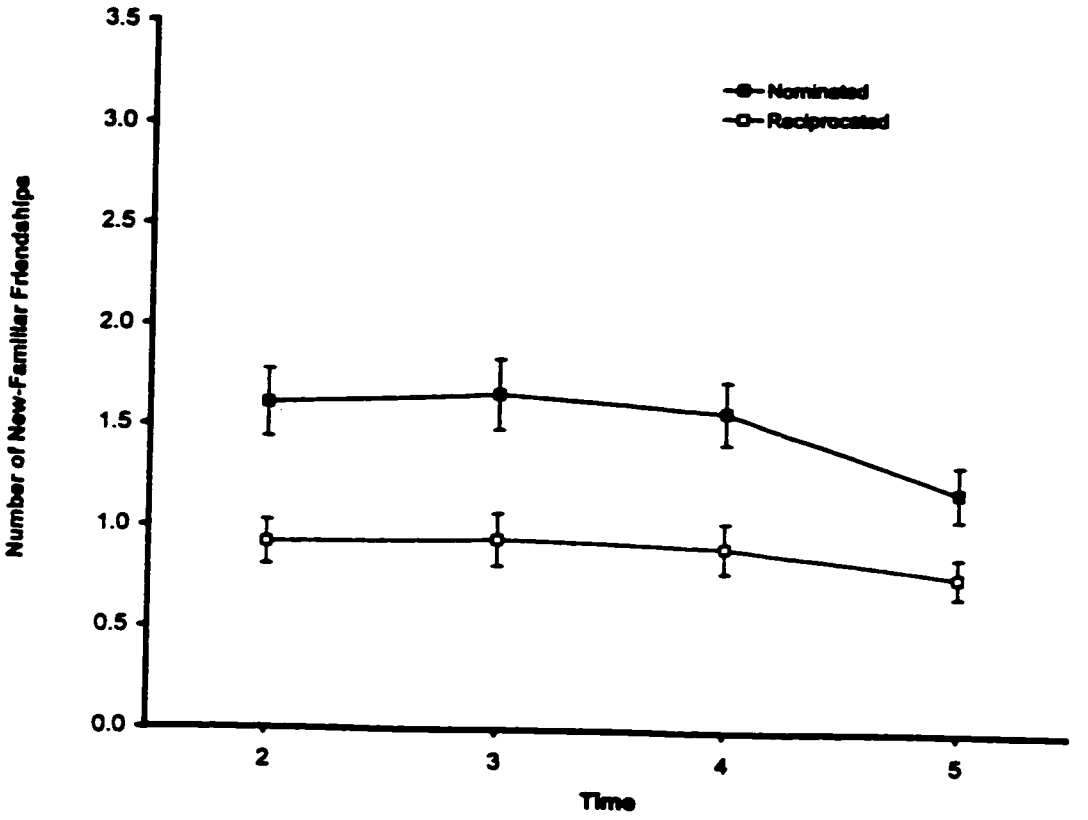

Figure 3. Mean number of nominated and reciprocated new-familiar friendships as a function of time (n = 31 boys and 33 girls).

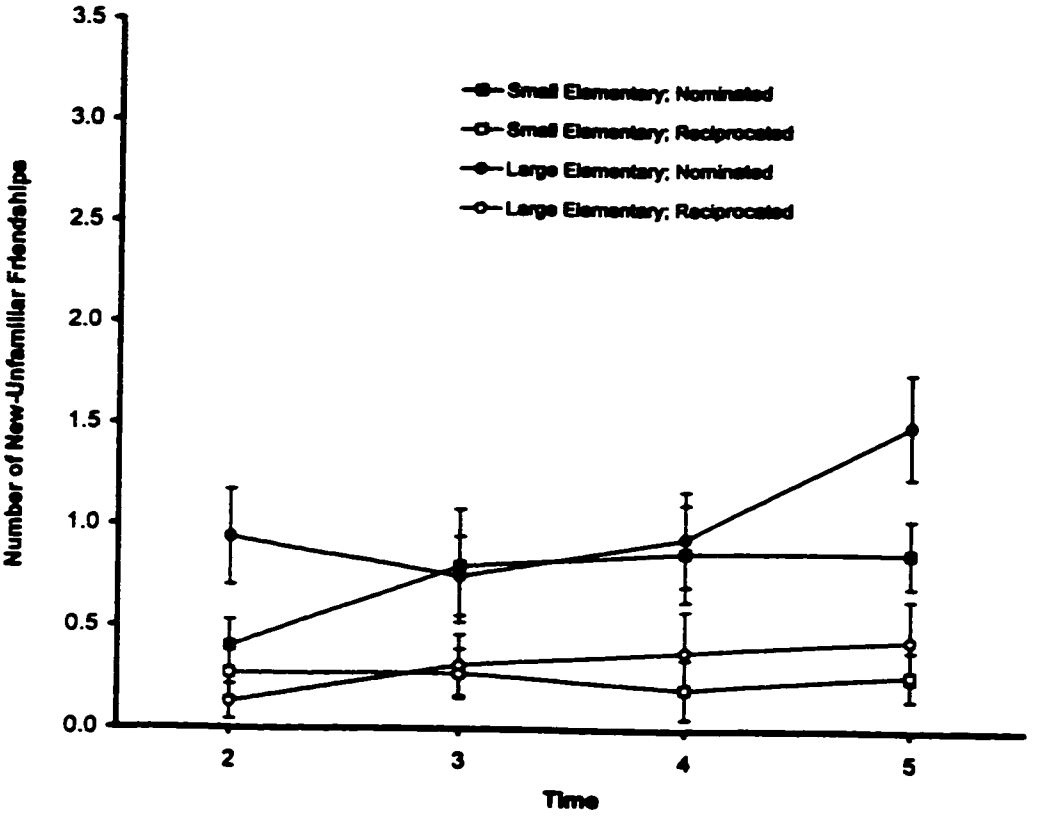

Figure 4. Boys' mean number (+/- SE) of nominated and reciprocated new-unfamiliar friendships as a function of time and elementary school size (n = 31 boys).

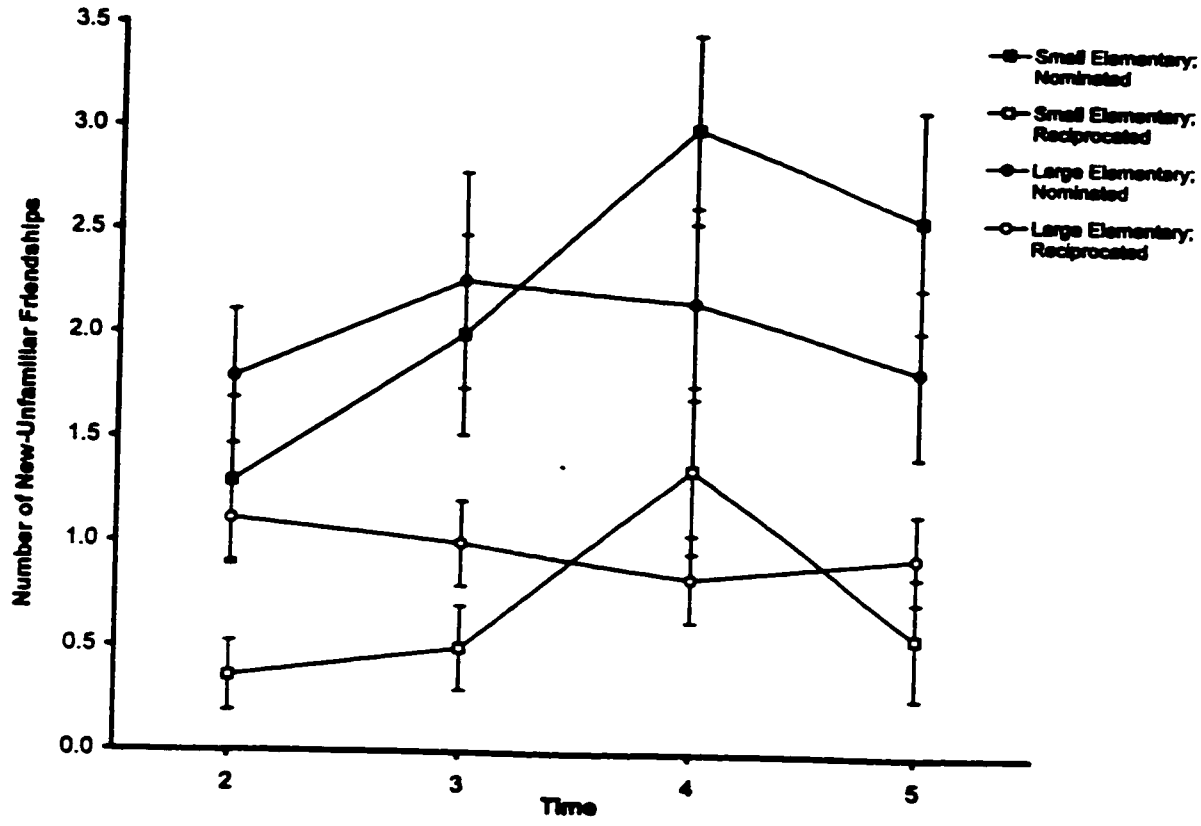

Figure 5. Girls' mean number (+/- SE) of nominated and reciprocated new-unfamiliar friendships as a function of time and elementary school size (n = 33 girls).

$p < .01$ (partial $\eta^2 = .28$; see Appendix I, Table I2). Stepdown F-tests are summarized in Table 7. The Gender effect on the linear variate Reciprocated was not significant after Nominated was covaried, indicating that overall differences between boys and girls in the number of new-unfamiliar reciprocated friendships were accounted for by differences in the number of nominations. As apparent in Figures 4 and 5, girls were far more likely than boys to nominate and form reciprocated friendships with previously unfamiliar peers. The Time effect on the linear variate Reciprocated was not significant after Nominated was covaried, indicating that overall time-related changes in Reciprocated were redundant with time-related changes in Nominated. Nominations of and reciprocated friendships with previously unfamiliar peers increased over the fall term. The Gender by Elementary Size by Time interaction on the linear variate Reciprocated retained significance after Nominated was covaried, indicating that Reciprocated was not totally redundant with Nominated for this interaction. To clarify interpretation of the three-way interaction, the analysis was run separately for boys and girls. The Elementary Size by Time interaction was significant for girls, $F(6, 26) = 3.81$, $p < .01$ ($\eta^2 = .47$), but not for boys, $F(6, 24) = 1.22$, ns (partial $\eta^2 = .23$; see Appendix I, Table I3). Results of stepdown F-tests for girls indicated that the Elementary Size by Time interaction was significant for the linear variate Reciprocated after Nominated was controlled, stepdown $F(3, 92) = 4.10$, $p < .01$ (see Appendix I, Table I4). At Times 2 and 3, girls from small elementary schools nominated and had reciprocated friendships with fewer previously unfamiliar peers than did girls from the large elementary school (see Figure 5). At Times 4 and 5, girls from small elementary schools nominated more previously unfamiliar peers than did girls from the large elementary school. At Time 4, but not Time 5, increased

Table 7

Summary of Stepdown F-tests for Significant Multivariate Effects: New-unfamiliar Friendships

IV	Variate	Univariate F	df	Stepdown F	df	α
Gender	Nominated	15.08[a]	1/60	15.08***	1/60	.025
	Reciprocated	11.65[a]	1/60	1.20	1/59	.025
Time	Nominated	7.86[a]	3/180	7.86***	3/180	.025
	Reciprocated	1.99	3/180	0.73	3/179	.025
G x E x T	Nominated	3.45[a]	3/180	3.45*	3/180	.025
	Reciprocated	5.75[a]	3/180	4.92**	3/179	.025

Note. IV = independent variable; Variate = linear combination of dependent variables; G x E x T = Gender by Elementary Size by Time.

[a] Significance level can not be evaluated but would reach $p < .025$ in univariate context.

* $p < .025$. ** $p < .01$. *** $p < .001$.

numbers of nominations resulted in increased numbers of reciprocated friendships with previously unfamiliar peers for girls from small elementary schools. Thus, the number of new-unfamiliar friends nominated and reciprocated varied as a function of Time and Elementary Size for girls, but not for boys.

Timing of friendship formation during fall term. Friendship formation during the fall term of Grade 7 was examined by assessing onset of new friendships as a function of Gender, Previous Familiarity (i.e., whether members of the dyad went to same versus different elementary schools), and Time (Time 2, 3, 4, or 5). New friendships were defined as reciprocated friendships that had not appeared earlier. The initial sample for this analysis comprised the 33 boys and 33 girls who had sociometric data for each time of testing, but 2 boys were excluded because the elementary school they attended sent most of its students to a different high school and they had limited opportunities to form new friendships with previously familiar peers.

A 2 (Gender) by 2 (Familiarity) by 4 (Time) repeated-measures ANOVA, with Familiarity and Time as repeated measures, was conducted. Cell means are plotted in Figure 6 (means and standard deviations are given in Appendix J, Table J1). All three main effects were significant (see Appendix J, Table J2). Specifically, girls formed more new friendships than boys (Ms = 0.49 vs 0.29, respectively), F (1, 62) = 13.03, $p < .001$ (partial $\eta^2 = .17$). More new friendships were formed with previously familiar peers (M = 0.46) than with previously unfamiliar peers (M = 0.32), F (1, 62) = 5.65, $p < .05$ (partial $\eta^2 = .08$). In addition, there was a significant effect of Time, F (3, 186) = 16.59, $p < .001$ (partial $\eta^2 = .21$). Tukey post-hoc tests (at $p < .05$) revealed that more new friendships were formed at Time 2 (M = 0.71) than at Times 3, 4, or 5 (Ms = 0.33, 0.35, and 0.16,

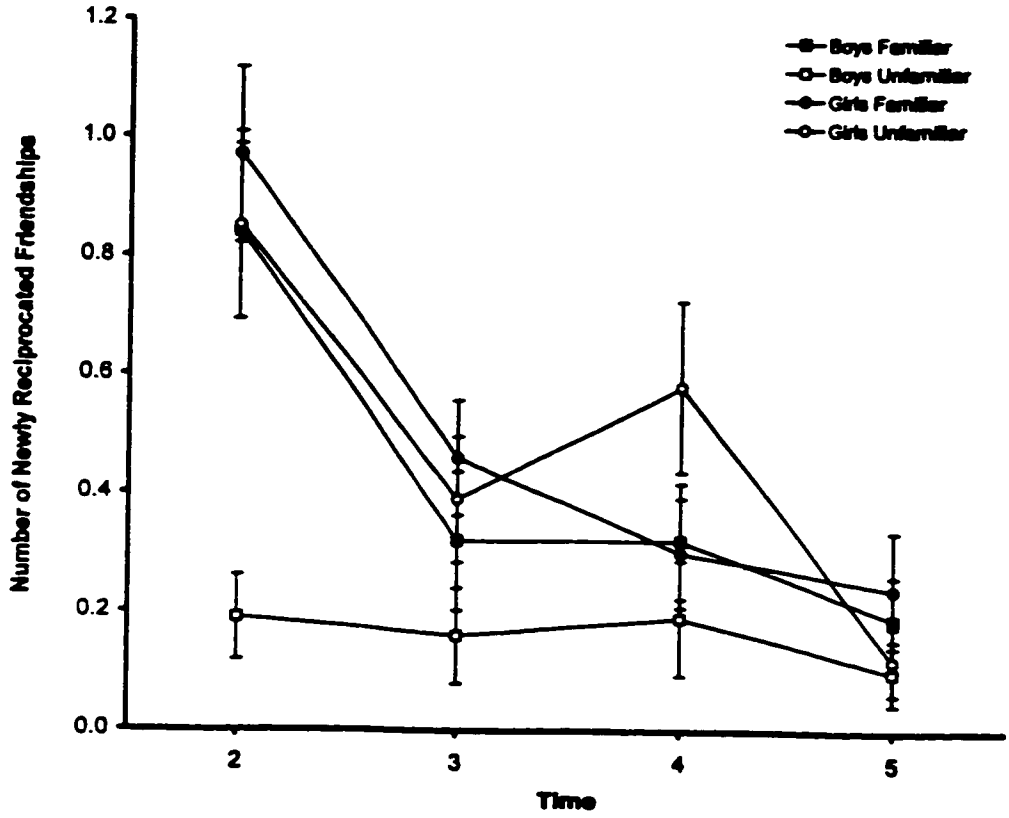

Figure 6. Mean number of newly-reciprocated friendships as a function of time and previous familiarity (n = 33 boys, 33 girls).

respectively), and means for Times 3, 4, and 5 were not significantly different from each other.

Main effects were qualified by two significant interactions, Familiarity by Time, $\underline{F}$ (3, 186) = 3.50, $\underline{p} < .05$ (partial $\eta^2 = .05$), and Gender by Familiarity, $\underline{F}$ (1, 62) = 5.03, $\underline{p} < .05$ (partial $\eta^2 = .08$). Tukey post-hoc tests (at $\underline{p} < .05$) indicated that at Time 2, more new friendships were formed with previously familiar than with previously unfamiliar peers (see Figure 6). At Times 3 through 5, numbers of new friendships formed with previously familiar and unfamiliar peers were similar. Boys formed more friendships with previously familiar than previously unfamiliar peers ($\underline{M}$s = 0.42 and 0.16, respectively), whereas girls formed equal numbers of friendships with previously familiar and unfamiliar peers ($\underline{M}$s = 0.49 and 0.49).

Summary

Sociometric data were evaluated to assess the degree of stability and change in peer acceptance, peer rejection, and friendship during the transition from elementary to high school. For both boys and girls, test-retest stability of peer acceptance was lower during the period of transition (Time 1 to Time 4) than during the post-transition period, but stability of peer rejection was unaffected by the transition. Test-retest stability of number of friends was lower for girls, but not boys, during the transition interval than during the post-transition interval. Test-retest stability of participation in best friendship was unaffected by the transition, but the number of youth participating in best friendships declined from the end of Grade 6 (Time 1) to the beginning of Grade 7 (Time 2) and did not return to Grade 6 levels for the remainder of the Grade 7 year.

Friendship formation and maintenance during the fall term of Grade 7 was

examined by assessing total numbers of friendships, numbers of friendships with old friends, previously familiar peers, and previously unfamiliar peers, and the timing of friendship formation. Overall, boys and girls had similar numbers of friends at each time of testing, and both genders experienced a slight decline in total number of friendships over the fall term. Boys maintained more old friendships than did girls, but both genders lost old friendships during the fall term of Grade 7, girls more rapidly than boys. Numbers of new friendships with previously familiar peers were similar for boys and girls, and held constant over the fall term. Numbers of friendships with previously unfamiliar peers increased over the fall term for both boys and girls, but girls formed more new friendships with previously unfamiliar peers than did boys, and did so earlier in the school year. Relative to girls from large elementary schools, girls from small elementary schools were slower to begin nominating previously unfamiliar peers as friends, and their nominations did not consistently result in a corresponding increase in number of reciprocated friendships with previously unfamiliar peers.

Overall, it is evident that youth experienced both stability and change in peer relations during the transition to high school. Girls experienced greater change than boys, however, in that they lost more old friendships and formed more new friendships.

Description of Youth Nominated as Target Peers (TPs) and Outcomes of Participant-TP Relationships

Overview

The remaining results are based upon youths' predictions of friendship with previously unfamiliar peers. At the beginning of the Grade 7 year (Time 2), participants

were asked to select up to three same-gender TPs whom they had just met and with whom they thought they would become friends. Participants were also asked to report their perceptions of the qualities of their relationships with those peers throughout the fall term and again at the end of Grade 7. Sociometric data from Grade 6 (Time 1) were examined to confirm that participants had selected TPs with whom they had no prior relationships. The purpose of these procedures was to permit a prospective examination of friendship formation. In the current section of results, characteristics of youth who were selected as TPs are described, as are outcomes of participant-TP relationships.

Characteristics of Youth Selected as TPs

Of the 102 youth who participated at Time 2, a total of 74 youth (37 boys and 37 girls) were selected as TPs. At Time 2, youth selected as TPs were, relative to those not selected, more accepted, F (1, 98) = 7.36, $p < .01$ (Ms = 0.14 vs. -0.42), and less rejected, F (1, 98) = 7.35, $p < .01$ (Ms = -0.16 vs. 0.42; see Appendix K, Tables K1 and K2). Among those selected as TPs, the number of times youth were selected ranged from 1 to 12, with a mode of 2. Not including those who were never chosen, the number of times youth were selected as TPs was significantly related to peer acceptance, r (72) = .42, $p <$ .001, but not peer rejection, r (72) = -.12, ns. The nonsignificant correlation between number of times chosen and peer rejection reflects the restricted range of rejection scores among those chosen as TPs. The most rejected youth were not chosen as potential friends. Taken together, the findings suggest that TP selection was based, in part, on characteristics associated with peer acceptance and, to a lesser extent, peer rejection.

Outcomes of Participant-TP Relationships

Reciprocity of participant-TP relationships was assessed by examining

sociometric nominations at each of Times 2 through 6. Among the 102 Time 2 participants, 89 (41 boys, 48 girls) selected at least one same-gender previously unfamiliar TP at Time 2. Relationship reciprocity could not be scored for 12 of these 89 participants, due to missing sociometric data. Relationship outcomes for the remaining 77 participants are summarized in Table 8. Approximately half (39/77) formed reciprocated friendships with one or more TP at some point in Grade 7. Boys and girls appeared equally likely to form friendships with TPs, χ^2 (1, N = 77) = 2.86, ns (power was sufficient to detect medium or large gender effects).

Of the 39 participants who formed reciprocated friendships with one or more TP during Grade 7, 27 (11 boys and 16 girls) formed friendships with only one TP. A further 9 (3 boys and 6 girls) formed friendships with two TPs, and 3 girls formed friendships with three TPs. This method of counting yielded 54 participant-TP dyads which became friendships, but 10 of the dyads (1 male and 9 female) were represented twice (i.e., A named B and B named A). With the duplications eliminated, there were 44 unique participant-TP dyads (16 male and 28 female) which became reciprocated friendships at some point during Grade 7. The times at which these 44 relationships first became reciprocated are presented in Table 9. Note that 20 (4 male and 16 female) of the 44 relationships were first reciprocated at Time 2, which is when participants selected TPs. Because these dyads established reciprocated friendships so quickly, they could not be included in prospective analyses of friendship formation which required pre-reciprocation data. Instead, they constituted a sample of new friendships for examination of changes in perceived relationship qualities during the early stages of reciprocated friendship. The remaining 24 participant-TP relationships (12 male and 12 female) were available for

Table 8

Outcomes of Participant-TP Relationships

Outcome	Boys	Girls	Total
Became friends with one or more TP	14	25	39
Never became friends with a TP	21	17	38
Unknown (missing sociometric data)	6	6	12
Total	41	48	89

Note. Cell entries reflect the number of participants in that category. Categories are mutually exclusive.

Table 9

Times of Onset of Reciprocation of Participant-TP Friendships as a Function of Gender of Dyad

		Time of onset of reciprocation				
Gender of dyad	n	2	3	4	5	6
Male	16	4	7	1	1	3
Female	28	16	5	5	1	1
Total	44	20	12	6	2	4

Note. Cell entries are numbers of friendship dyads.

prospective examinations of friendship formation requiring pre-reciprocation data.

The TP selection procedure appears to have worked moderately well with the present sample of young adolescents. A total of 47 youth formed one or more new friendships with previously unfamiliar peers at some point during Grade 7. Of those 47 youth, 39 (83%) were represented in the "became friends" group of the participant-TP data set, indicating that the utility of the TP selection procedure for sampling youth who formed friendships with previously unfamiliar peers was satisfactory. However, given that nearly half of the relationships which became friendships were already reciprocated at the time of TP identification, the procedure's utility could be improved.

Summary

At Time 2, three weeks after their entry into Grade 7, participants were asked to identify up to three same-gender previously unfamiliar peers with whom they thought they might become friends. Youths' selection of TPs appeared to be based on peer characteristics associated with peer acceptance and, to a lesser extent, peer rejection. Approximately half of the Time 2 participants who selected same-gender, previously unfamiliar peers as TPs went on to form reciprocated friendships with one or more of those peers. A substantial proportion (83%) of all youth who formed new friendships with previously unfamiliar peers during Grade 7 were represented in the sample of participants who identified TPs with whom they became friends.

Prospective Study of Friendship Formation

Overview

Processes of friendship formation, as revealed by participants' perceptions of

friendship qualities, are the focus of this section. Friendship formation was assessed prospectively by examining differences between participant-TP relationships that did versus did not later develop into mutual friendships and by examining changes in perceptions of the qualities of TP relationships as new acquaintances became mutual friends. First, participants' perceptions of the qualities of relationships with TPs at the time they selected TPs were examined to determine whether relationships that later became friendships and those that did not were perceived differently early in the acquaintanceship process. Second, perceptions of relationships were examined over the period during which relationships made the transition from acquaintanceship to friendship. Within-subject comparisons of perceptions of relationships that did versus did not make the transition to friendship permitted an analysis of changes in perceived relationship qualities during friendship formation. Third, perceptions of relationships before reciprocation were used to predict perceptions after reciprocation, to determine whether positive friendship qualities and conflict had moderating effects on each other. Fourth, perceptions of newly-established mutual friendships were examined to determine whether perceived qualities changed over the first four months of friendship. Given that all participant-TP pairings were of same-gender peers who were not familiar to each other from elementary school, effects, if any, of previous familiarity and duration of friendship were controlled throughout.

For the first three sets of analyses described in this section, which required pre-reciprocation TP-FQS ratings, there were up to 12 female and 12 male participant-TP relationships eligible for inclusion in analyses, and gender differences could be evaluated. For the fourth question, which did not require pre-reciprocation TP-FQS ratings, there

were a maximum of 16 female and 4 male participant-TP relationships eligible for inclusion in analyses. Gender differences could not be assessed because there were too few boys with appropriate data to yield reliable results. Because some of the subsamples used for these analyses were quite small, the degree to which each subsample was representative of the total sample of 102 Time 2 participants was assessed. This was accomplished by comparing participants in each subsample to the remaining Time 2 participants on peer acceptance, peer rejection, number of reciprocated friendships, and presence of a best friend at Time 2. All Time 2 participants had valid scores on these indices and, taken together, the indices yield a comprehensive picture of participants' status in the peer group. In the sections that follow, the ways in which subsamples are similar to and/or different from the remaining sample are briefly described and the reader is referred to the appropriate appendix for more detail.

Perceptions of Relationship Qualities at Time of TP Selection

Analytic strategies. Participants' perceptions of the qualities of relationships with TPs at the time they identified TPs were examined to determine whether perceptions early in the acquaintanceship process were related to relationship outcome. The focus was on participants' perceptions of relationships with peers who they thought would become friends, but who were not yet friends. Between-subject comparisons were made between relationships that later became friendships and relationships that did not become friendships.

Sample selection and power analysis. From the participants involved in the 24 participant-TP relationships which became reciprocated friendships after Time 2 (see Table 9), a subsample of participants was selected such that (a) no relationship was rated

more than once, (b) no individual contributed more than one set of ratings, and (c) TP-FQS ratings were available for analysis. The resulting subsample included 11 girls and 10 boys who later formed reciprocated friendships with their TP. To control for general friendship-making skills, a comparison group comprising participants who formed at least one new reciprocated friendship during Grade 7 was selected. The 11 boys and 11 girls included in the comparison group had TP-FQS ratings of relationships that did not become friendships, and each relationship was represented only once. In summary, the subsample comprised 43 participants in four groups: Male-Became Friends (n = 10), Female-Became Friends (n = 11), Male-Never Became Friends (n = 11), and Female-Never Became Friends (n = 11). With n = 11 per group and α = .05, power was sufficient to detect only very large effects. The 43 individuals in the subsample did not differ from the 59 remaining Time 2 participants on either peer acceptance, number of friends, or presence of a best friend at Time 2. However, individuals in the subsample were, on average, less rejected than other participants, F (1, 98) = 4.54, p < .05 (Ms = -0.25 and 0.18, respectively; see Appendix L, Tables L1 to L3).

Findings. A 2 (Gender) by 2 (Relationship Outcome: Became Friends vs. Never Became Friends) between-subjects ANOVA was computed for the two TP-FQS subscales, Positive Qualities and Conflict, assessed at Time 2 when participants identified TPs. Because group differences on each subscale (rather than differences between subscales) were of interest, a univariate approach was selected over a multivariate approach (Huberty & Morris, 1989). Cell means are presented in Table 10. There was a significant effect of Gender on the Positive Qualities subscale, F (1, 39) = 10.46, p < .01 (partial η^2 = .21; see Appendix L, Table L4). Girls perceived their TP relationships more

Table 10

Perceptions of Participant-TP Relationship Qualities at Time of TP Selection as a Function of Outcome of Relationship and Gender

Gender		Positive qualities	Conflict
		Became friends	
Boys[a]	M	2.60	2.41
	SD	0.81	0.98
Girls[b]	M	3.02	1.71
	SD	0.64	0.54
		Never became friends	
Boys[b]	M	2.46	1.90
	SD	0.51	0.84
Girls[b]	M	3.41	1.66
	SD	0.80	0.73

Note. Maximum score = 5. Higher scores reflect more of that quality.

[a] $n = 10$. [b] $n = 11$.

positively than did boys, regardless of relationship outcome (Ms = 3.22 and 2.53, respectively). The effect of Gender on Conflict was of borderline significance, F (1, 39) = 3.86, p = .06 (partial η^2 = .09). Girls reported somewhat less conflict than boys (Ms = 1.68 and 2.15, respectively). No effects of Relationship Outcome were observed, but power was insufficient to detect anything other than very large effects. In summary, when youth identified TPs, girls perceived more positive qualities and less conflict in their TP relationships than did boys. However, perceptions of relationships that did versus did not later become reciprocated friendships did not differ significantly in these low-power tests.

The Transition From Acquaintanceship to Friendship

Analytic strategies. The period of transition from acquaintanceship to friendship is the focus of this section, in which two distinct research questions are addressed. The main question was whether perceptions of the qualities of TP relationships changed during the transition from acquaintanceship to reciprocated friendship. A secondary question was an extension of the question addressed in the previous section and concerned differences between relationships that did versus did not later become friendships. Examination of participants' initial perceptions of the qualities of target relationships, presented in the preceding section, indicated that initial perceptions did not differentiate relationships that did versus did not later become friendships. However, the between-subjects designs used in those analyses did not control for individual differences in perceptions of relationships. Furthermore, data were not available to assess changes in perceptions of relationships over time, because many participants in that sample did not provide TP-FQS ratings of their TP relationships after Time 2. For the current set of

analyses, within-subjects data were used to examine changes over time in perceptions of two types of relationships, ones that became friendships and ones that did not become friendships. Initial differences between relationships that did versus did not become friendships were assessed along with changes in perceptions of relationship qualities over the transition from acquaintanceship to friendship.

Sample selection and power analysis. To be included in these within-subjects analyses, a given participant had to provide TP-FQS ratings for two relationships, one that became a friendship and one that did not. For each participant, TP-FQS ratings of the relationship that became a friendship had to be available at two points in time, once before the relationship was reciprocated (Lag 0) and again once the relationship became reciprocated (Lag 1). To control effects of familiarity, TP-FQS ratings of the relationship that did not become a friendship had to be available at the same two points in time, Lag 0 and Lag 1. Of the 24 participant-TP relationships that became friendships after Time 2 (see Table 9), 11 (7 male, 4 female) had to be excluded from the present analyses because participants did not have TP-FQS ratings for TP relationships that did not become friendships. Thus, the final subsample for these analyses consisted of 5 boys and 8 girls who had TP-FQS ratings for two relationships at Lag 0 and Lag 1. For each participant, Lag 0 and Lag 1 were one month apart in real time, but the real time of Lag 0 and Lag 1 varied across participants. Specifically, Lag 0 and Lag 1 corresponded, respectively, to Times 2 and 3 for 9 participants, Times 3 and 4 for 3 participants, and Times 4 and 5 for 1 participant. With $\underline{n}$ = 5 boys and 8 girls, power was very low for these analyses and only very large effects were detectable (Stevens, 1992). At Time 2, the 13 individuals selected for inclusion in this subsample did not differ from the remaining 89 Time 2

participants on peer acceptance, peer rejection, number of friends, or presence of a best friend (see Appendix M, Tables M1 to M3).

Findings. A 2 (Gender) by 2 (Relationship Outcome) by 2 (Time) mixed-model ANOVA, with Relationship Outcome and Time as repeated measures, was computed for each TP-FQS subscale, Positive Qualities and Conflict. Because group differences on each subscale (rather than differences between subscales) were of interest, a univariate approach was selected over a multivariate approach (Huberty & Morris, 1989).

Cell means and standard deviations for Positive Qualities appear in Table 11. There was a significant effect of Relationship Outcome, F (1, 11) = 7.23, $p < .05$ (partial $\eta^2 = .40$), qualified by the Time by Relationship Outcome interaction, F (1, 11) = 5.54, $p < .05$ (partial $\eta^2 = .34$; see Appendix M, Table M4). As shown in Figure 7, relationships that became friendships were perceived as becoming more positive from Lag 0 to Lag 1 (Ms = 2.87 and 3.57, respectively), whereas relationships that never became friendships were perceived similarly at Lag 0 and Lag 1 (Ms = 2.71 and 2.68, respectively). Perceptions of relationships that did versus did not become friendships did not differ at Lag 0, t (11) = 0.8, ns. Gender and its interactions were not significant.

Cell means and standard deviations for Conflict are presented in Table 12. The interaction of Time and Relationship Outcome was significant for Conflict, F (1, 11) = 6.62, $p < .05$ (partial $\eta^2 = .38$), but was qualified by the three-way interaction, Gender by Time by Relationship Outcome, F (1, 11) = 9.52, $p < .01$ (partial $\eta^2 = .46$; see Appendix M, Table M4). As shown in Figure 8, boys perceived increasing levels of conflict in relationships that became friendships (Ms = 2.13 at Lag 0 and 2.55 at Lag 1), but perceived decreasing levels of conflict in relationships that did not become friendships

Table 11

Perceptions of Positive Qualities in TP Relationships as a Function of Relationship Outcome, Time, and Gender

Time		Gender	
		Boys[a]	Girls[b]
Relationships that became friendships			
Lag 0	M	2.49	3.10
	SD	0.78	1.01
Lag 1	M	3.24	3.78
	SD	0.34	0.8
Relationships that did not become friendships			
Lag 0	M	2.46	2.86
	SD	0.68	0.68
Lag 1	M	2.69	2.67
	SD	0.23	0.76

Note. Maximum score = 5. Higher scores reflect more positive qualities.

[a] $n = 5$. [b] $n = 8$.

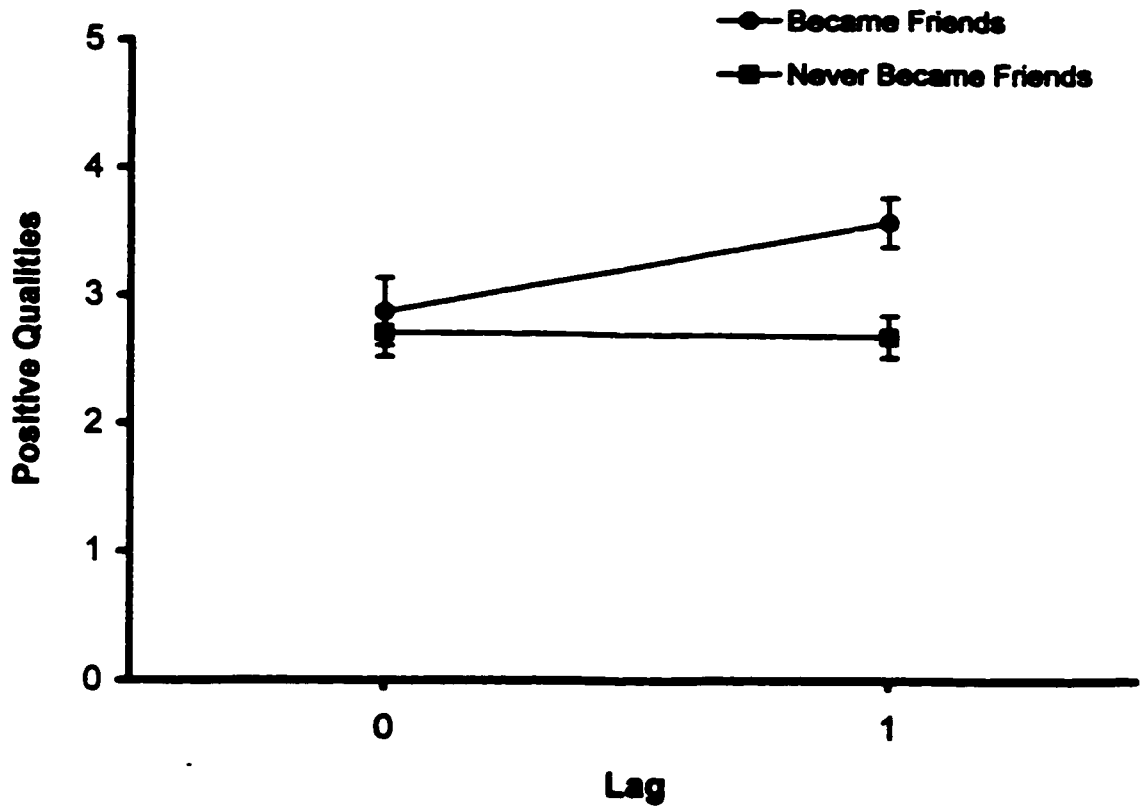

Figure 7. Mean ratings of perceived positive relationship qualities as a function of relationship outcome and time (n = 13).

Table 12

Perceptions of Conflict in TP Relationships as a Function of Relationship Outcome, Time, and Gender

		Gender	
Time		Boys[a]	Girls[b]
Relationships that became friendships			
Lag 0	M	2.13	1.65
	SD	0.80	0.58
Lag 1	M	2.55	1.45
	SD	0.73	0.66
Relationships that did not become friendships			
Lag 0	M	2.52	1.80
	SD	0.76	0.72
Lag 1	M	2.11	1.68
	SD	0.86	1.01

Note. Maximum score = 5. Higher scores reflect more conflict.

[a] $n = 5$. [b] $n = 8$.

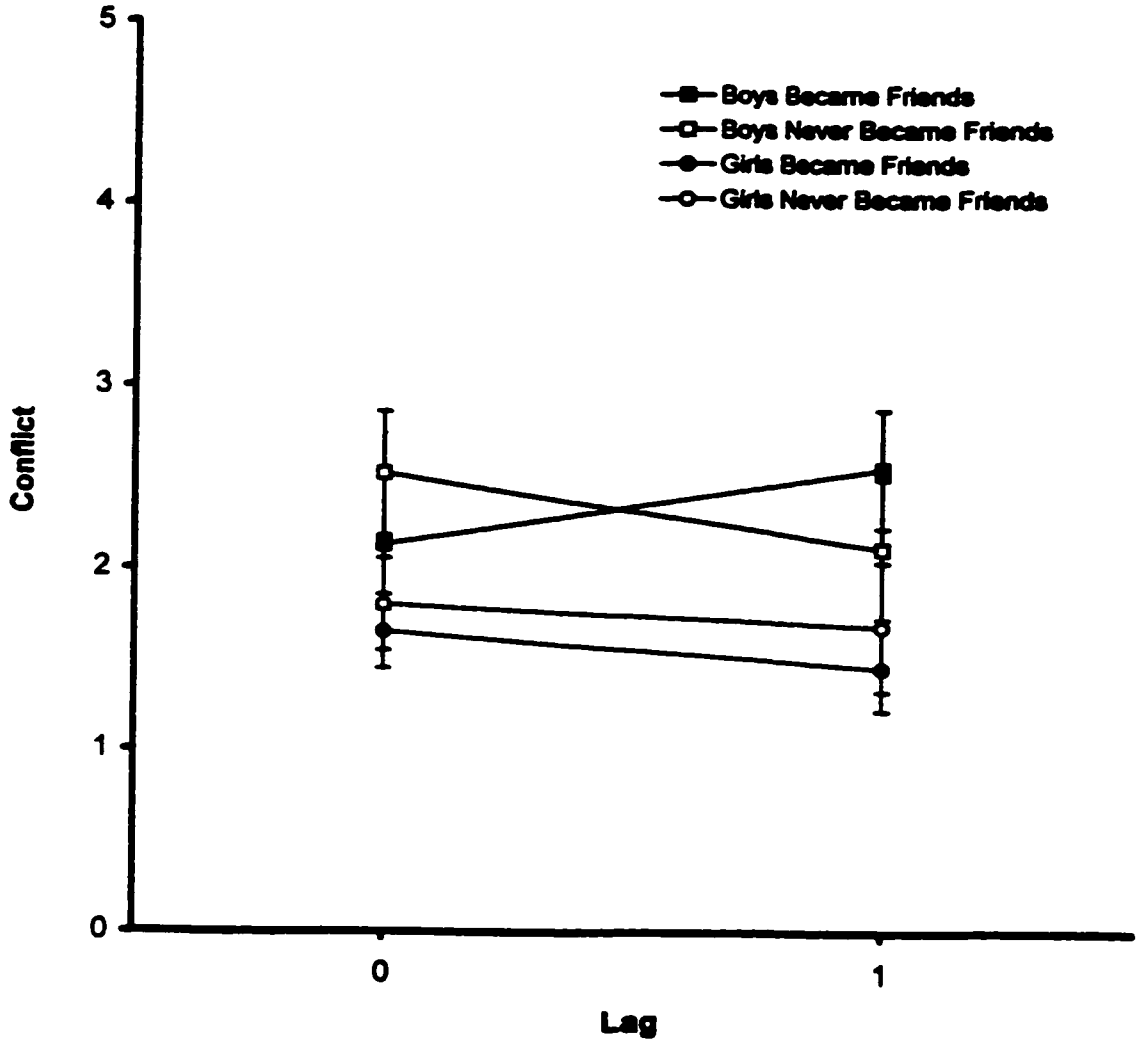

Figure 8. Mean ratings of perceived conflict as a function of gender, relationship outcome, and time (n = 5 boys and 8 girls).

(Ms = 2.52 at Lag 0 and 2.11 at Lag 1). Boys' perceptions of relationships that did versus did not become friendships differed at Lag 0, although the effect was of borderline significance in this low-power test, t (4) = -2.18, p = .10. Specifically, boys' relationships that became friendships were initally viewed as less conflictual than relationships that did not become friendships. Girls perceived decreasing levels of conflict in both types of relationships, and girls' perceptions did not differ as a function of relationship type.

In summary, during the transition from acquaintanceship to friendship, positive qualities of relationships were perceived as increasing. In contrast, positive qualities of relationships that did not make the transition to friendship were perceived as being constant over time. Boys and girls differed in their perceptions of conflict in new relationships. For boys, perceived conflict with new friends increased during the transition to friendship, whereas perceived conflict with acquaintances who were not becoming friends decreased during the same time period. Initially, boys perceived more conflict in relationships that did not become friendships than in relationships that did become friendships. For girls, perceived conflict decreased over time regardless of relationship outcome.

The Dynamics of Friendship Formation

Analytic strategies. The role of relationship qualities in friendship formation was examined by assessing temporal associations among Positive Qualities and Conflict. The goal of the analysis was to determine whether Positive Qualities and Conflict have moderating effects on one another during the period of transition from acquaintanceship to friendship. Associations among relationship qualities in relationships that did not progress to reciprocated friendships were also examined. Lag 1 Positive Qualities and

Lag 1 Conflict ratings served as criterion variables in separate hierarchical regressions, with predictor variables Gender, Lag 0 Positive Qualities, Lag 0 Conflict, and the interaction of Lag 0 Positive Qualities and Lag 0 Conflict. Significant interaction terms would indicate that one quality moderates the other during relationship development.

Sample selection and power analysis. The sample for the present analyses was identical to that used in the previous section. The sample comprised 8 girls and 5 boys who provided TP-FQS ratings at each of Lag 0 and Lag1 for two relationships; one that became a reciprocated friendship at Lag 1, and another that never became a reciprocated friendship. Because the subject to variable ratio for these regression equations was low, statistical tests had extremely low power and results should be considered exploratory.

Findings. For relationships that became friendships, Lag 1 Positive Qualities were not significantly predicted by the combination of Gender, Lag 0 Positive Qualities, Lag 0 Conflict, and the Positive Qualities by Conflict interaction (see Table 13). Lag 1 Conflict, in contrast, was significantly predicted by the combined predictors, F (4, 8) = 4.58, $p < .05$ (adjusted $R^2 = .54$; see Table 13), and Gender and Lag 0 Conflict made unique contributions to prediction. The effect of Gender was the same as that reported in the previous section, namely, that girls reported less conflict at Lag 1 than did boys. The current analysis revealed that youth who reported more conflict at Lag 0 also reported more conflict at Lag 1. However, the interaction of Positive Qualities and Conflict was not significant. Taken together, results from the two regressions assessing relationships that became friendships suggest that Positive Qualities and Conflict do not moderate each other during friendship formation.

For relationships that did not become friendships, prediction of Lag 1 Positive

Table 13

Prediction of Lag 1 Relationship Qualities for Relationships That Became Friendships

Criterion	Block	Predictor	β	sr	R^2 Cha	R^2
Lag 1 Pos. Q	1.	Gender	.39	.39	.15	.15
	2.	Lag 0 Pos. Q (Q)	.09	.09	.01	.16
		Lag 0 Conf. (C)	-.02	-.02		
	3.	Q x C	.75	.64*	.34*	.50
				Adjusted R^2 = .25; F (4, 8) = 2.01, ns.		
Lag 1 Conf.	1.	Gender	-.65	-.65*	.42*	.42
	2.	Lag 0 Pos. Q (Q)	-.08	-.12	.27t	.69
		Lag 0 Conf. (C)	.58	.67*		
	3.	Q x C	.07	.10	.00	.69
				Adjusted R^2 = .54; F (4, 8) = 4.58, $p < .05$.		

Note. n = 13 (8 girls, 5 boys). Pos. Q. = Positive Qualities; Conf. = Conflict.

t $p < .10$. * $p < .05$.

Qualities by Gender, Lag 0 Positive Qualities, Lag 0 Conflict, and the interaction of Lag 0 Positive Qualities and Lag 0 Conflict was of borderline significance, F (4, 8) = 2.88, p = .09 (adjusted R^2 = .38; see Table 14). Lag 0 Positive Qualities was the only significant univariate predictor, indicating that youth who perceived high Positive Qualities at Lag 0 continued to perceive high Positive Qualities at Lag 1, even though the relationship was not progressing to friendship. Ratings of Conflict at Lag 1 were signficantly predicted by the combined set of predictors, F (4, 8) = 7.63, $p < .01$ (adjusted R^2 = .69; see Table 14). Youth who perceived high Conflict at Lag 0 continued to perceive high Conflict at Lag 1, and youth who perceived low Positive Qualities at Lag 0 perceived high Conflict at Lag 0. Taken together, results from these two regressions indicate that Positive Qualities and Conflict did not moderate each other in non-friend relationships, but rather that high levels of Conflict and low levels of Positive Qualities at Lag 0 independently contributed to high levels of Conflict at Lag 1.

In summary, regardless of relationship outcome, Positive Qualities are not strongly predicted by Gender, previous Positive Qualities, or previous Conflict. For relationships that were becoming friendships, post-reciprocation Conflict ratings were higher for boys than for girls, and were higher when youth had perceived high Conflict before reciprocation. For relationships that were not becoming friendships, later Conflict was positively associated with previous Conflict and negatively associated with previous Positive Qualities. There was no evidence that Positive Qualities and Conflict moderated each other in either type of relationship, but power to detect moderating effects was extremely low.

Table 14

Prediction of Lag 1 Relationship Qualities for Relationships That Did Not Become Friendships

Criterion	Block	Predictor	β	sr	R^2 Cha	R^2
Pos. Q	1.	Gender	-.02	-.02	.00	.00
	2.	Lag 0 Pos. Q (Q)	.77	.70*	.49*	.49
		Lag 0 Conf. (C)	-.24	-.28		
	3.	Q x C	-.37	-.44	.10	.59
			Adjusted R^2 = .39; F (4, 8) = 2.88, p = .09.			
Conflict	1.	Gender	-.23	-.23	.05	.05
	2.	Lag 0 Pos. Q (Q)	-.46	-.67*	.74***	.79
		Lag 0 Conf. (C)	1.00	.88***		
	3.	Q x C	-.03	-.05	.00	.79
			Adjusted R^2 = .69; F (4, 8) = 7.63, p < .01.			

Note. n = 13 (8 girls, 5 boys). Pos. Q. = Positive Qualities.

* p < .05. *** p < .001.

Perceptions of New Friendships

Analytic strategies. Perceptions of new friendships during the first months of friendship are the focus of analyses presented in this section. Examination of the period of transition from acquaintanceship to reciprocated friendship, reported in preceding sections, indicated that relationships were viewed as gaining in positive qualities during the transition to reciprocation. Girls perceived decreasing, and boys increasing, levels of conflict during the transition from acquaintanceship to friendship. To address the question of whether perceptions change after reciprocation, new friendships formed between participants and TPs were examined. All participant-TP friendships included in these analyses began at Time 2 (September of Grade 7) and continued to Time 5.

Sample selection and power analysis. Of the 20 participant-TP relationships which were reciprocated friendships at Time 2 (see Table 9), 13 (3 male, 10 female) were still reciprocated at Time 5 (December of Grade 7), and TP-FQS ratings at each of Times 2 through 5 were available for all 13 relationships. Of the ten female relationships, two were contributed by one participant, and one of the two was randomly selected for inclusion. This left a final subsample of 9 female and 3 male relationships which were first reciprocated at Time 2 and which remained reciprocated until at least Time 5. Because there were so few male relationships, Gender was not a factor in the analysis. With $n = 12$ and $\alpha = .05$, the one-way repeated measures ANOVA had sufficient power to detect large effects (Stevens, 1992). The youth selected for this subsample did not differ from other youth on either peer rejection or presence of best friendships at Time 2. However, the youth in the subsample were more accepted than other youth, $F(1, 100) = 18.13$, $p < .001$ (Ms = 1.05 and -0.14, respectively). In addition, the youth in the

subsample had more reciprocated friendships than other youth, F (1, 100) = 21.21, p < .001 (Ms = 3.9 and 2.0, respectively; see Appendix N, Tables N1 to N3). Thus, the youth in this subsample were atypical in that they were extremely well-liked by their peers and had more friends than other youth.

Findings. A repeated-measures ANOVA, with Time as the only factor, was computed for the TP-FQS subscales, Positive Qualities and Conflict. Means for each subscale at each of Times 2 through 5 are presented in Table 15. There was no significant change across time in perceptions of the qualities of new friendships, Fs (3, 33) < 1.0, ns (see Appendix N, Table N4). In summary, well-liked youths' perceptions of the qualities of their new friendships with previously unfamiliar peers did not change over time. Whether similar results would be observed with a more diverse sample of individuals and/or a more powerful statistical test is unknown.

Summary

Examination of relationships between participants and same-gender previously unfamiliar TPs permitted a prospective examination of friendship formation in which effects, if any, of previous familiarity and friendship duration were controlled. All statistical tests had low power and only large or very large effects could be detected. At the time of TP selection, perceptions of the qualities of relationships with TPs did not differentiate relationships which later became friendships from those which did not. During the transition from acquaintanceship to friendship, perceived positive qualities of relationships increased. Boys reported increasing, and girls decreasing, levels of conflict in relationships making the transition to friendship. Perceptions of positive qualities in relationships that later became friendships were expected to be greater than in

Table 15

Perceptions of New Friendships Over Time

		Time			
Subscale		2	3	4	5
Positive qualities	M	3.88	3.74	3.73	3.81
	SD	0.65	0.63	0.77	0.75
Conflict	M	1.74	1.73	1.73	1.87
	SD	0.83	0.85	0.62	0.76

Note. n = 12 (9 girls, 3 boys). Maximum score = 5. Higher scores reflect more of that quality.

relationships that did not later become friendships, but the two types of relationships did not differ initially. It was not until friendships became reciprocated that youth perceived them as having more positive qualities than relationships that did not develop into friendships. Boys, but not girls, initially perceived more conflict in relationships that never became friendships than in relationships that later became friendships. Initial perceptions of positive qualities and conflict did not appear to have moderating effects on each other, either in relationships that later became friendships or in relationships that did not become friendships. However, in relationships that did not become friendships, initially low levels of positive qualities and high levels of conflict independently contributed to later high levels of conflict. Perceptions of positive qualities and conflict changed little during the first four months of friendship, according to reports from a small group of youth who had many friends and were well-liked by classmates.

Discussion

Overview

The main objectives of the present study were (a) to examine temporal features of youths' peer relationships during the transition to high school and (b) to examine the earliest phases of friendship formation prospectively. Youth were followed as they made the transition from elementary school into high school and peer relationships were assessed on six occasions. Upon entry to high school, youth were asked to identify same-gender previously unfamiliar peers with whom they thought they might become friends and perceptions of these relationships were systematically followed.

Temporal Features of Peer Relationships During the Transition to High School

To assess stability and change in peer relationships during the transition to high school, indices derived from sociometric nominations were used to track temporal features of peer acceptance, peer rejection, and friendship. The main focus was on temporal features of friendship and two general hypotheses were tested, in addition to specific ones detailed below. The general hypotheses were that (a) girls' friendships would undergo more change than boys' during the transition to high school, and (b) an explicit focus on patterns of friendship formation and maintenance would help clarify inconsistent gender differences noted in extant literature.

Previous research (Bukowski & Newcomb, 1984; Terry & Coie, 1991) has revealed that peer acceptance and peer rejection are relatively stable across time and peer groups. Therefore, it was expected that peer acceptance and peer rejection would be unaffected by the transition to high school. Consistent with expectations, test-retest

stability of peer rejection was equivalent over two six-month intervals, one containing the school transition and the other following the transition. The power of the statistical test of the hypothesis was such that any large effect of the school transition on peer rejection would have been detected if present, although power was too low to detect small or medium effects.

Contrary to expectations, peer acceptance was less stable over the transition interval than the post-transition interval. In the only prior study evaluating stability of peer acceptance during a school transition (Bukowski & Newcomb, 1984), differences in test-retest stability over the transition and post-transition intervals were not statistically tested. However, the direction of the correlations reported indicated, in direct contradiction of the current findings, that test-retest stability of peer acceptance was somewhat higher during the transition interval than the post-transition interval. Participants in Bukowski and Newcomb's (1984) study were, on average, one year younger than participants in the present study, and the inconsistent findings may reflect developmental changes in stability of peer acceptance in early adolescence.

Although peer acceptance and peer rejection reflect behavioral characteristics (Dodge, 1983) that are relatively stable over time and context (Coie & Kupersmidt, 1983; Terry & Coie, 1991), it may be the case that peer acceptance is more contextually-based than peer rejection. If this is the case, the discrepancy between the current findings and those reported by Bukowski and Newcomb (1984) may reflect differences in contextual variables not directly assessed in either study.

Given evidence that girls experience greater distress than boys during the

transition to high school (Simmons et al., 1979; Simmons et al., 1987), a general hypothesis in the present study was that girls' friendships would undergo greater change than boys'. This hypothesis was not supported when the dimension of friendship assessed was participation in best friendships, although only very large gender differences could have been detected with the modest sample size available. Test-retest stability for participation in a best friendship was low for both boys and girls, and did not differ across transition and post-transition intervals, even though statistical power was such that large effects could have been detected if present. The proportion of youth participating in best friendships declined from the end of Grade 6 to the beginning of Grade 7 and did not return to previous levels by the end of Grade 7. Thus, for both boys and girls, the transition to high school disrupted best friendships and had a lasting effect on rates of participation in best friendship.

Due to evidence that the friendship networks of young adolescents tend to shrink rather than grow during the school year (Berndt & Hoyle, 1985) and evidence that boys and girls tend to have similar numbers of friends in early adolescence (Berndt, 1982; Berndt & Hoyle, 1985), it was expected that total numbers of friendships would decline over the school year for both genders. This hypothesis was supported in the present study, in that there was a slight decline over time in total number of reciprocated friendships, and boys and girls had similar numbers of reciprocated friendships at each time of testing.

The strength of the evidence for declining numbers of friendships over the school year is limited, however, by a decline in research participation rates over the school year.

As noted in the Methods section, low participation rates lead to underestimated counts of reciprocated friendships, because nominations of nonparticipants can not be assessed for reciprocity. In the present study, participation rates did not directly correspond to rates of reciprocation, but the overall pattern of correspondence suggests the possibility that the continued decline in number of friendships at the end of the school year was artefactual. The lowest participation rate was at Time 1, which was when youth had the greatest number of reciprocated friendships. For Times 2 through 4, relative to Time 1, the participation rate increased while number of reciprocated friendships decreased, constituting strong evidence for a real decline in number of friendships upon entry to Grade 7, relative to the end of Grade 6. At Times 5 and 6, relative to Times 2 through 4, however, both participation rates and number of reciprocated friendships decreased, and it is at these times that the observed decline in number of friendships may be artefactual. It is possible that, had participation rates been higher, the number of reciprocated friendships would have increased somewhat. Berndt and Hoyle (1985) did not report research participation rates among the Grade 8 students in their study, making it impossible to judge whether the decline they observed in numbers of friendships was similarly linked to declining research participation rates. Whether a tendency to limit the size of friendship circles emerges in early adolescence, as suggested by converging evidence from this study and others (Berndt & Hoyle, 1985; Parker & Seal, 1996), or whether the continuing decline in number of friendships observed in the present study is artefactual is an issue to be resolved in future research. Nevertheless, in the present study, there was strong evidence that the transition into high school was associated with a

decline in numbers of reciprocated friendships, consistent with the idea that school transitions disrupt friendships.

No specific hypotheses were made regarding test-retest stability of number of reciprocated friendships because of conflicting results from previous studies (Berndt & Hoyle, 1985; Bukowski & Newcomb, 1984). Consistent with the general hypothesis that girls would experience greater change in friendships than boys during the transition to high school, test-retest stability of number of friendships was equivalent across the school transition and post-transition intervals for boys, but not for girls. Girls' test-retest stability for number of friends during the post-transition interval was similar to boys', but it was considerably lower than boys' during the transition interval. Girls who had many friends at the end of Grade 6 had fewer friends in November of Grade 7 than girls who had fewer friends at the end of Grade 6.

Previous research has indicated that, for both boys and girls, test-retest stability of friendship choices received was not affected by the transition from Grade 5 in small elementary schools to Grade 6 in a larger middle school (Bukowski & Newcomb, 1984). However, gender differences in test-retest stability of number of friends have been noted for Grade 8 students from fall to spring of a school year, with boys showing far greater consistency than girls (Berndt & Hoyle, 1985). Therefore, gender differences in consistency of numbers of friends across time may emerge in early adolescence, although this seems unlikely given that boys and girls in the present sample demonstrated similar test-retest stabilities for number of friends during the post-transition interval. Alternatively, gender may be related to other temporal aspects of friendship during the

transition to high school, indirectly producing instability in total number of reciprocated friendships for girls but not boys.

In the present study, it was expected that analysis of temporal features of friendship would help clarify previous inconsistent findings regarding effects of gender on friendship (Berndt & Hoyle, 1985; Bukowski & Newcomb, 1984; Degirmencioglu et al., 1993). In particular, it was expected that a focus on the composition of friendship circles, in terms of numbers of maintained versus new friendships, would be useful. Such analysis had not previously been undertaken in the context of classroom peer groups, but showed promise when used with adolescents attending residential summer camps (Parker & Seal, 1996). In the present study, the potential contribution of explicit consideration of temporal features of friendship is underscored by the clarity it lends to the interpretation of gender differences in test-retest stability of total number of friendships.

During the fall term of Grade 7, both boys and girls lost old friendships, but girls lost more old friendships than boys, and lost them earlier. Both boys and girls formed new friendships with previously unfamiliar peers, but girls were more likely than boys to form these friendships, and did so earlier in the term. However, boys and girls did not differ in their propensity to form new friendships with previously familiar peers, and the frequency of new-familiar friendships did not change over the course of the fall term. Thus, it appears that a key difference between boys and girls during the transition to high school is the relative speed with which they lose old friendships and establish new friendships with previously unfamiliar peers. Gender differences in rates of friendship loss and friendship formation account for the differential test-retest stabilities of numbers

of friends observed for boys versus girls in the present study.

Differential rates of friendship formation and loss may help explain the previously-noted inconsistencies in findings regarding gender differences in test-retest stability of numbers of friendships. On the one hand, there is evidence that boys and girls making the transition from Grade 5 in smaller elementary school into Grade 6 at larger middle schools receive about the same number of repeat best friend nominations over two six-month intervals, one including the transition, and one following the transition (Bukowski & Newcomb, 1984). On the other hand, there is evidence of gender differences in test-retest stability of number of friends in the transition period of the present study, and for Grade 8 students in a non-transition school year (Berndt & Hoyle, 1985), with girls showing greater instability than boys in both studies.

Theoretical explanations for gender differences in rates of friendship formation and friendship loss during early adolescence can be derived from existing research evidence. The first of these is based on gender differences in pubertal development. As noted in the introduction, pubertal development is expected to promote instability in specific friendships if two friends experience pubertal changes at different times. Youth tend to choose friends who are similar to themselves both in terms of physical characteristics (Clark & Ayers, 1992) and interests (Berndt, 1982). Among adolescent girls, close friends are more similar in terms of pubertal development than are less close friends, and experiences associated with puberty are a topic of conversation among close female friends (Brooks-Gunn, Warren, Samelson, & Fox, 1986). For these reasons, pre-pubertal friendships may be difficult to maintain through puberty if friends' pubertal

development occurs at different rates. Over the course of the present study's data collection, many of the girls but few of the boys demonstrated observable evidence of pubertal changes. It may be the case that the girls in the present study and in Berndt and Hoyle's (1985) study were more likely to be experiencing puberty and its effects on friendship than were the somewhat younger (Grade 6) girls who participated in Bukowski and Newcomb's (1984) study, or the boys in all of the studies. In the absence of direct measurement of pubertal status, this hypothesis can not be confirmed. The influence of pubertal status on friendship stability need to be assessed further by, for example, comparing friendship stability while controlling for rates of pubertal change. This would permit a determination of whether boys and girls experience the same degree of friendship instability during pubertal development.

A second theoretical explanation of gender differences in rates of friendship formation and loss can be derived from current knowledge of gender differences in expressions of friendship. In early adulthood, the emergence of particular kinds of behaviors in the earliest phases of friendship differs for men and women (Hays, 1985). Women are more likely than men to report casual affection and intimate communication in the early stages of same-sex friendships, whereas men report a wider variety of companionship behaviors than women (Hays, 1985). These gender differences tend to become less marked as friendships progress, but indicate that male and female friendships are established via different pathways. When adolescents report on the deepening or decline of specific friendships, girls are more likely than boys to focus on issues of loyalty and commitment, and girls are particularly concerned with the confidentiality of personal

information exchanged with their friends (Bigelow & LaGaipa, 1980). Adolescent girls are more likely than adolescent boys to make emotional self-disclosures to friends as a way of coping with emotional distress (Papini, Farmer, Clark, Micka, & Barnett, 1990). Furthermore, it has been established that young adolescent girls' conversations with friends and acquaintances include a substantial amount of gossip about peers (Mettetal, 1983). High rates of emotional self-disclosure and high rates of gossip in girls' friendships may function to establish friendships, but also make violations of expectations of loyalty and commitment in friendship extremely likely. This constellation of behavioral tendencies may promote greater instability in girls' friendships than in boys'. Further research into the nature of behavioral exchanges characterizing male versus female friendships and their associations with friendship formation and loss in adolescence is necessary to evaluate this hypothesis.

In summary, the current assessment of temporal features of peer relationships during the transition to high school confirms and extends previous findings regarding stability and change in peer relationships during early adolescence. Current findings confirm previous ones regarding stability of peer rejection over time and peer groups, but suggest that peer acceptance may be more contextually-based than peer rejection. As expected, girls experienced greater changes in friendship than did boys, but both boys and girls experienced both stability and change in friendship during the transition to high school. The focus on temporal aspects of friendship was particularly useful for gaining a more complete understanding of the nature of gender differences in friendship during early adolescence. Future avenues of research were suggested by indications that gender

differences in friendship stability may be linked to gender differences in pubertal development or gender differences in modes of expressing friendship.

Prospective Study of Friendship Formation

To permit a prospective assessment of friendship formation, youth were asked, three weeks after they entered Grade 7, to identify up to three same-gender previously unfamiliar classmates with whom they thought they might become friends. Participants reported their perceptions of the qualities of their relationships with these peers over the course of the school year, and sociometric nominations of friends were used to assess whether the relationships developed into reciprocated friendships.

The procedure used for selection of potential friends appeared to have good utility in this age range, in that a substantial proportion of all youth who formed friendships with previously unfamiliar peers during Grade 7 were represented in the subsample of youth who became friends with one or more of the youth they identified as potential friends. However, nearly half of the relationships that became friendships were already reciprocated at the time of identification, suggesting that the utility of the procedure could be improved for research where the goal is to assess the earliest stages of friendship formation. It might be useful, for example, to administer the procedure in an interview format, to permit an evaluation of the current status of identified relationships. Additionally, it might be useful to administer the procedure earlier in the school year, before youth had opportunities to establish reciprocated friendships with the previously unfamiliar peers they encountered upon entry to high school. If the latter modification was applied, it may be necessary to present photographs of peers along with peers' names

during the TP selection procedure, to facilitate youths' identification of peers with whom they had limited opportunities to interact.

The first hypothesis examined in this prospective study of friendship formation concerned the characteristics of youth who were selected as potential friends. Personal characteristics are expected to influence relationship development (Levinger & Levinger, 1986) and peer acceptance and peer rejection are thought to reflect relatively stable behavioral characteristics of individuals (Coie & Kupersmidt, 1983). Previous research has indicated that peer acceptance is antecedent to friendship whereas peer rejection is indirectly linked to friendship via its inverse association with peer acceptance (Bukowski et al., 1996). Thus, it was expected that peer acceptance, but not peer rejection, would guide selection of potential friends.

Youth who were selected as potential friends were more accepted and less rejected than those who were not selected. Among those selected as potential friends, the number of different peers who selected them was significantly related to peer acceptance, but not peer rejection, because highly rejected youth were unlikely to be selected as potential friends. This finding confirms that peer acceptance is antecedent to friendship (Bukowski et al., 1996), but extends that finding by highlighting the negative impact of peer rejection in one of the very first steps towards friendship, the identification of potential friends. When youth identified previously unfamiliar peers with whom they thought they might become friends, they appeared to rule out peers who were extremely rejected, and selected instead those who were relatively well-accepted. The more accepted an individual was, the more often he/she was identified by peers as being a

potential friend. Thus, youth appear to use both peer acceptance and peer rejection, or the behavioral characteristics on which they are based, when identifying peers with whom they might form friendships. Further clarification of factors affecting youths' identification of potential friends might be achieved by extending the procedure used to identify potential friends by including assessments of youths' reasons for identifying particular peers as potential friends.

The second hypothesis tested in this prospective study of friendship formation concerned initial perceptions of relationships with peers identified as potential friends. There is evidence that interactions occurring early in acquaintanceship predict relationship outcomes (Berg & Clark, 1986; Gottman, 1983; Hays, 1985). Thus, it was expected that initial perceptions of relationships which later became friendships would be more positive than perceptions of relationships which did not develop into friendships. The hypothesis was examined in two ways which yielded somewhat contradictory results.

First, between-subjects comparisons of perceptions of relationships that did versus did not later develop into reciprocated friendships revealed no differences. However, statistical power for the comparison was sufficient to detect only very large effects. Smaller effects of relationship outcome may have been present but not detectable. The second test of the hypothesis was made in the context of a within-subjects design, which was similarly capable of detecting only very large effects. In that test, initial perceptions of positive qualities of two relationships, one that later became a friendship and one that did not, did not differ. Initial perceptions of conflict in the two types of relationships did not differ for girls, but did for boys. Boys initially perceived somewhat more conflict in

relationships that did not develop into friendships than in relationships that did develop into friendships. It has been suggested that adolescent boys do not adequately understand the potentially negative impact of conflict on interpersonal relationships (Youniss & Smollar, 1985). However, initially high levels of conflict may or may not be the reason these boys' relationships did not develop into friendships, given that the same boys reported increased conflict after friendships became reciprocated. Furthermore, the sample of boys on which this result was based was very small, and the result must be viewed tentatively until replicated with a larger sample. In summary, the hypothesis that initial perceptions of relationships that did versus did not later become friendships would differ was largely unsupported, but was not adequately tested, that is, power was insufficient to detect anything other than very large effects.

The third hypothesis tested in this prospective study of friendship formation was that perceptions of positive qualities of relationships would increase as relationships made the transition to friendship. This hypothesis was based on previous reports which demonstrated that youth associate positive interactions with the deepening of particular friendships (Berndt, 1986; Bigelow & LaGaipa, 1980). The hypothesis was tested in two ways. When the period of transition from acquaintanceship into mutual friendship was examined, there was evidence that youth perceived an increase in positive relationship qualities during that transition. When the first four months of new reciprocated friendships were examined, there was no evidence of change in perceptions of positive qualities. Statistical power of the latter test was sufficient to detect only large effects, but examination of mean ratings revealed little change in perceived positive qualities over the

first four months of friendship. Thus, it appears that perceptions of positive relationship qualities increase during the transition from acquaintanceship to friendship but plateau thereafter, at least for the first four months of reciprocated friendship.

This pattern of perceived positive qualities is consistent with existing evidence that once friendships are established, and before they decline, there is little change in youths' reported perceptions of them (Berndt et al., 1986). The present findings extend previous literature by establishing, prospectively, that the transition from acquaintanceship to friendship is marked by changes in perceptions of the positive qualities of relationships. Previous reports of this nature had been based entirely on youths' recollections of friendship formation (Berndt, 1986; Bigelow & LaGaipa, 1980).

Theories of the dynamics of adult friendships suggest that ongoing evaluative judgements of relationship quality occur during friendship formation (Altman & Taylor, 1973; Duck & Craig, 1978). There are likely to be developmental differences in the skill and accuracy with which such judgements are made, corresponding to developments in social cognitive skills (Selman, 1980; Yeates & Selman, 1989). Although there is evidence that youth differentially perceive friendships and acquaintanceships (Berndt, 1986; Berndt & Perry, 1986), the degree to which they are capable of differentiating acquaintanceships or friendships of varying qualities is unclear. In the present study, correlations among the various positive qualities of relationships (companionship, help, closeness, and security) were considerably higher than those reported by the authors of the scale, who used it to assess features of best friendships (Bukowski et al., 1994). Furthermore, average ratings of positive qualities were lower for the newly-formed

friendships in the present study than for the best friendships of unknown duration assessed by Bukowski et al. (1994). Whether these differences reflect differing mind sets evoked by questionnaire instructions (i.e., instructions to report about a "best friend" versus an "acquaintance with whom one might become friends") or a real lack of differentiation in perceptions of relationship qualities is unclear. Evaluations of correspondences between behaviors and perceptions would clarify this issue.

The fourth hypothesis in this prospective assessment of friendship formation was that conflict would inhibit the establishment of friendships and would moderate or be moderated by the influence of positive relationship features. This hypothesis was derived from retrospective and prospective reports by youth which identified conflict as a primary source of relationship difficulties (Berndt, 1986; Berndt et al., 1986; Bigelow & LaGaipa, 1980). The hypothesis was tested in two ways. First, within-subject comparisons of relationships that did versus did not make the transition to friendship were made. In partial agreement with the hypothesis and as reviewed previously, boys, but not girls, initially perceived higher levels of conflict in relationships that did not become friendships than in those that later became friendships.

The second test of the hypothesis that conflict would inhibit friendship formation and would moderate or be moderated by positive relationship features was carried out by using initial perceptions of relationships to predict later perceptions. In relationships that became friendships, initial levels of conflict predicted later levels of conflict, but did not appear to moderate or be moderated by positive relationship qualities. In relationships that did not become friendships, initially high levels of conflict and initially low levels of

positive relationship qualities independently predicted later high levels of conflict. Contrary to prediction, conflict did not appear to moderate or be moderated by positive relationship qualities.

These results regarding the role of conflict in friendship formation must be viewed cautiously for two reasons. First, they are based on statistical tests with insufficient power to detect anything other than large effects. A second reason for caution is the theoretically complex role of conflict in relationships (cf. Laursen, 1996). Although conflict can tear relationships apart, as evidenced by reports of friendship decline (Berndt, 1986; Berndt et al., 1986; Bigelow & LaGaipa, 1980), the successful resolution of conflict can lead to deepening of friendship bonds (Shulman et al., 1994). Furthermore, acquainted nonfriends often have less conflictual relations than close friends (Hartup et al., 1993), because they spend less time interacting and therefore have fewer occasions for conflict (Hartup, Laursen, Stewart, & Eastenson, 1988).

The global measure of perceived conflict used in the current study, which comprised responses to items such as "I can get into fights with (name of peer)" and "(name of peer) and I disagree about many things" (Bukowski et al., 1994), may be relatively insensitive to the subtle role of conflict in relationships. In addition, as noted previously, youth may not be very skilled at evaluating the qualities of their relationships. Future research on the role of conflict in friendship formation should rely on more intensive methods, such as observations or interviews, to assess conflict. Specifically, the meaning of conflict to participants in relationships should be assessed, as should methods used to resolve conflict. It might be useful to evaluate the correspondence between

ratings of perceived conflict and assessments of behaviors during interactions. In line with Hinde's (1979) argument that relative frequency and temporal patterning of interactions are related to perceptions of and satisfaction with relationships, it may be necessary to assess not only the frequency of conflict but also the way it is interwoven with ongoing nonconflictual interactions.

In summary, the current prospective study provides a preliminary sketch of factors associated with friendship formation during early adolescence. It was demonstrated that youth can identify peers with whom they are likely to form friendships, and that eliciting youths' predictions of friendship is a useful method for studying the transition to friendship. The role of peer acceptance and peer rejection in the process of identifying potential friends was established, verifying that youth rely on potential friends' social status when identifying peers with whom they want to become friends. Expected patterns of differences or changes in perceptions of relationships during relationship development were, for the most part, not observed. However, perceptions of positive qualities of relationships did increase, as expected, during the transition from acquaintanceship to friendship. Indications that adolescents may not be skilled at differentiating relationships of varying qualities, or that measures of perceptions are not sensitive to changing relationship qualities, suggest that future research on the topic of friendship formation should be based on observations of actual interactions, rather than reports of perceived relationship qualities.

Limitations of the Study

The primary limitation of the current study is its low statistical power. In the

portion of the study concerning temporal features of peer relationships, statistical power was sufficient to detect medium to large effect sizes. In the portion of the study concerned with the prospective study of friendship formation, only large or very large effects could be detected. Several factors converged to limit sample sizes.

First, although 140 youth participated over the course of the study, considerable attrition occurred. Many students who participated in Grade 6 did not attend the participating high school and were lost to follow-up. More were lost to follow-up due to subsequent withdrawal from the study or absenteeism on testing days. Attrition is to be expected in any longitudinal design and the present study was no exception.

Second, the requirement of independence between cases, which is an assumption made in the probability theory underlying inferential statistics, markedly reduced the number of cases available for analyses related to the prospective study of friendship formation. Researchers pursuing further study of relationships in naturally-occurring peer groups are cautioned to expect marked reductions in sample size due to the requirement of independence between cases (cf. Kenny, 1988).

Third, the rate of friendship formation between previously unfamiliar peers observed in the present study was lower than anticipated. Of the 102 youth who participated in September of the Grade 7 year, only 47 formed one or more new friendships with previously unfamiliar peers at any point during Grade 7. When the study was in the planning stages, it was assumed that most youth entering high school would form friendships with previously unfamiliar peers. The observed rate could not have been predicted from available research, as rates of friendship formation during the

transition to high school have not been documented previously. The present study provides that documentation and demonstrates the value of assessing changes in friendship circles over time.

Although power to detect hypothesized effects in the present study was low, some hypotheses were supported. In the context of low-powered statistical tests, these findings constitute particularly strong indications that the study of temporal features of friendship will contribute to our knowledge of the correlates and consequences of friendship during adolescence.

A second limitation of the present study is related to its reliance on questionnaire methodology to assess changes in relationships. This idea was discussed previously with regard to the role of conflict in friendship formation, where it was suggested that global ratings of perceived conflict may not adequately capture the subtleties of the role of conflict in relationship development. The issue is whether we can reasonably expect adolescents' questionnaire responses regarding their perceptions of relationships to adequately reflect changes that occur in relationships during friendship formation. Examination of this issue requires consideration of (a) the validity of the scale used to index perceptions, (b) the manner in which the scale was used in the present study, and (c) the assumptions upon which use of the scale was based.

The measure used to index perceptions of relationship qualities in the present study, the FQS (Bukowski et al., 1994), has not previously been validated for ratings of relationships that are not perceived by the rating child as being "best friendships". However, structured interviews from which the FQS was developed have successfully

differentiated friendships from acquaintanceships in Grades 2 through 8, and differentiation increased with age (Berndt, 1986; Berndt & Perry, 1986). In addition, the modified version of the FQS used in the present study successfully differentiated reciprocated friendships from unreciprocated relationships, indicating that it had construct validity.

The manner in which the FQS was used in the present study limited its utility, however. Because of high interscale correlations and the need to reduce the number of dependent variables due to small sample sizes, four subscales (Companionship, Help, Security, and Closeness) from the original FQS were collapsed into one subscale (Positive Qualities). This prevented the identification of links between specific positive features of friendship and friendship formation, which in turn limited the utility of the scale.

A larger concern, however, revolves around the assumption that adolescents' perceptions of relationship adequately reflect changes in relationships. In the present study, it was assumed that participants' perceptions would reflect the nature of the interactions occurring in their relationships. However, perceptions are not direct reflections of interactions because they are influenced by factors such as verbal skills, cognitive development, and self-awareness. Take, as an example, the idea that older children and adolescents are more focused on loyalty and commitment in friendship than are younger children. This finding originated in studies of conceptions of friendship (e.g., Bigelow & LaGaipa, 1975) and was found to extend to perceptions of actual friendships (e.g., Bigelow & LaGaipa, 1980). The finding has sometimes been interpreted as

indicating that loyalty and commitment are not central features of young children's friendships. However, observations of interactions indicate that toddlers behaviorally demonstrate loyalty and commitment in their friendships (Whaley & Rubenstein, 1994), suggesting that young children do not have the verbal or cognitive sophistication or self-awareness required to accurately report what goes on in their friendships. Similarly, verbally-based reports of perceptions of relationships by older children, adolescents, and even adults, may not reflect interactions influential during the course of relationship development.

The short-comings of verbally-based reports of perceptions of relationships extend beyond limited perceptions of interactions, however. In general, people's reports of their relationships tend to overemphasize their partners' characteristics and underemphasize the role of the physical and social contexts as well as their own personal characteristics (Berscheid, 1986). For example, in discussing why they became friends with someone, people rarely refer to factors such as being in the same place at the same time or being in particular need of a new friendship at a given time in their life. However, the model of relationship development outlined by Levinger and Levinger (1986) emphasizes the role of personal characteristics of both members of the dyad, as well as the role of the physical and social environments. The influence of these factors on friendship formation can not be assessed through the assessment of perceptions of relationships.

In summary, the current study had two limitations. These were (a) inadequate statistical power to test hypotheses and (b) reliance on perceptions of relationships as indices of changes in relationships. With these limitations in mind, the contributions of

the study to our understanding of friendship in early adolescence are examined.

Is a Dynamic Conceptualization of Friendship Useful?

A central premise of the current study was that a dynamic conceptualization of friendship would extend and clarify our understanding of friendship formation during childhood and adolescence. This premise was supported, both in terms of the analysis of temporal features of peer relations and in terms of the prospective study of friendship formation. Through a focus on temporal features of friendship, particularly maintenance of old friendships and formation of new ones, our understanding of gender differences in adolescent friendship was elaborated. New hypotheses regarding the role played by pubertal development and gender-typed expressions of friendship in production of gender differences in friendship stability and change were generated. It was determined, prospectively, that the process of identifying potential friends is based, in part, on personal characteristics of the potential friends, specifically, peer acceptance and peer rejection. Furthermore, it was determined that changes in perceptions of positive qualities of relationships are temporally linked to the transition from acquaintanceship to friendship.

The promise of dynamic conceptualizations of friendship seems clear. To permit realization of this promise, researchers face the challenge of designing studies that can meet the demands of research on relationship development. Previously, research based on observations of interactions has shown potential for highlighting processes of friendship formation (Gottman, 1983; Shulman et al., 1994). To date such studies have been carried out in somewhat atypical contexts, where children are separated from

ongoing friendships with other peers. Using observational strategies in the context of classroom peer groups, or setting up observational situations where a third person is asked to join an existing friendship dyad, may clarify the role of ongoing friendships in the formation of new ones.

Inclusion of features external to interactions, but expected to impact on interactions, would further strengthen the observational approach. Shulman et al. (1994) have demonstrated that attachment history was relevant both to interactions and to relationship development. The current study further suggests that factors such as age, gender, peer acceptance, peer rejection, and possibly pubertal status are also relevant in the formation of friendships in early adolescence. The impact of these variables on interactions occurring during friendship formation could be assessed by asking participants entering a new peer group to identify previously unfamiliar peers with whom they thought they might become friends, and then setting up sessions where the participants could be observed interacting with the peers they identified. Measures derived from the observational sessions could then be used, in combination with the other measures, to predict relationship outcome.

In summary, the study of the dynamics of friendship formation presents both challenges and potentials. It will require intensive and expensive research methodologies, such as the observational approaches outlined above. Given our knowledge that children and youth who have friends are better off than those who are friendless, however, justifications for the expense and intense hard work demanded by such research are at hand.

Implications for Social Skills Training

A practical objective guiding the present study of friendship formation was expansion of our knowledge of factors that facilitate friendship formation. Although it is not clear, at present, whether participation in friendship offers long-term developmental benefits (Newcomb & Bagwell, 1996), it is clear that children who participate in friendship have better concurrent adjustment than those who do not (Bukowski & Hoza, 1989; Bukowski et al., 1993; Ladd, 1990; Parker & Asher, 1993; Vandell & Hembree, 1994). Currently, interventions designed to help children and adolescents improve their peer relationships teach social skills thought, but not known, to be required for friendship formation and maintenance. Several conclusions emerging from the present study are particularly relevant to friendship skills training.

The first is that high levels of peer rejection put children out of the loop as far as friendship formation is concerned. Youth in the present study did not choose highly rejected peers as potential friends. Interventions which specifically target behavioral antecedents of peer rejection (e.g., aggression, disruptiveness) should improve the likelihood that a child will be able to form friendships. Attempts to decrease such behaviors are, in fact, a focus of many existing social skills training programs (Hinshaw, 1992; LaGreca, 1993).

A second conclusion relevant to social skills training is that positive qualities of relationships increase during the transition from acquaintanceship to friendship. Thus, training in skills that promote sharing of activities and interests, trust, closeness, and helpfulness should promote friendship formation (cf. Inderbitzen-Pisaruk & Foster,

1990), as should training in skills that enhance youths' abilities to identify peers with whom they share activities and interests. Youth may further benefit from training that helps them recognize relationships which are not likely to go well (e.g., when shared interests are few), so they can move on to more rewarding relationships.

Conclusions

The present study provided an analysis of temporal features of peer relationships during the transition to high school, with a particular focus on friendship, and offered a preliminary examination of factors related to friendship formation in early adolescence. Previously-reported findings regarding the features and correlates of friendship in early adolescence were confirmed and extended, and methodologies for the study of friendship formation were advanced. Further study of temporal features of friendship is expected to clarify the causes and correlates of stability and change in adolescent friendships, both in terms of overall friendship networks and in terms of the development of specific relationships.

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Appendix A

Parent Consent Letter

CONCORDIA
UNIVERSITY

CENTRE FOR RESEARCH IN HUMAN DEVELOPMENT

May 1992

Dear Parents;

I am a professor at Concordia University, where I teach courses and do research on children and adolescents. One of the topics I study is children's and early adolescents' adjustment to school. During this coming year your son or daughter will be moving from elementary school to secondary school. Like many parents and teachers, I am interested in knowing how this transition affects children's adjustment. I am writing to tell you about a study I would like to do with the sixth graders at schools that send students to the Laurentian Regional High School in Lachute. This study will help us learn more about the transition to high school.

The study I would like to do involves the administration of a questionnaire to the boys and girls who participate in the study. I and my assistants will administer the questionnaire in your child's classroom during the next month before the children make the transition to high school and then three times next fall after the transition. It will take about 45 minutes for each child to complete this questionnaire. In the questionnaire, each child will be asked to list who he or she does and does not associate with at school, how they get along with their best friends, and which persons they like to talk to and interact with. Next, they will be asked to answer some questions concerning how they perceive themselves, how good they think they are at things like school activities, sports and physical games, and in getting along with peers. They will also answer some questions about how other children in their class get along with each and how they act in the peer group. Finally, the children will be asked to read some descriptions about instances when someone became friends with someone or didn't become someone's friend.

All of the questions are presented in a questionnaire and each child completes the questionnaire at his or her desk. All of a child's answers are confidential. No one, except for me and my assistant will know how a particular child has answered any question in the questionnaire.

1455 de Maisonneuve Blvd. West
Montreal, Quebec
H3G 1M8
514-848-2240

It is natural to wonder about the risks and benefits related to participating in this study. This study poses no risks, other than the risks that are part of our normal daily lives, and there are no direct benefits to the students who participate. Most children find tasks like these enjoyable. As I stated earlier, the information collected in this study will be confidential, and participation is, of course, entirely voluntary. Your child is not required to take part; in fact, even if you give your permission for him/her to participate, you may change your mind at any time. If your child decides that she/he does not wish to participate, he or she does not have to.

If you have any questions about this study, please call me at 848-2184 (office) or 489-4497 (home). You may also reach me by letter at: Department of Psychology, Concordia University, 1455 de Maisonneuve Blvd., ER100, Montreal, Quebec, H3G 1M8.

Please fill out the attached form and have your child return it to his/her teacher in the next two days. Thank you for your help.

Sincerely,

William M. Bukowski
Associate Professor

PLEASE NOTE: In some schools, there are classrooms that include both fifth and sixth graders. Although the fifth graders will not be going to high school next year, because they are in the same classroom as some children who will be going I would like to ask them to be in our study.

PARENT CONSENT FORM

Please read and sign the following statement.

Professor Bukowski has described the purposes and procedures of the research study on children's perceptions of themselves and their peers that he is conducting with the sixth graders who are in schools that send students to the Laurentian Regional High School in Lachute. I understand that the children who participate in Dr. Bukowski's study will be asked to complete a questionnaire at their desks in school in which they will be asked (a) to answer questions about whom they do and do not spend time with in school, (b) to describe their relations with their best friend, (c) to rate the importance of various reasons why they would become someone's friend, (d) to indicate how good they think they are at various activities, such as school and sports, and (e) to indicate how their classmates behave in social situations. I understand it will take about 45 minutes for the participants to complete this form and that they will be asked to complete this questionnaire once this spring and then three times next fall after they have entered the high school. I know that there will be no direct benefits to my child as a result of his/her participation in this study, and Dr. Bukowski has told me that there are not risks except those that children already encounter in their daily lives. I know that participation is voluntary and that even if my child begins to take part in the study, he or she can stop participating at any time. I understand that my child's responses will be confidential, and that no identifying information will be given in results of this research. I also know that I may call Professor Bukowski to ask him questions about this study. His phone number is 848-2184 at his office, and 489-4497 at his home. Alternatively, I may write him at: Concordia University, Department of Psychology, ER100, 1455 de Maisonneuve West, Montreal, Quebec H3G 1M8.

Please check one of the following:

_____ I give my child permission to participate.
_____ I do not give my child permission to participate.

My child's name is

_____.

Please sign your name here:

_____ Date:_____.

Please print your name:

_____.

Appendix B

Participant Assent Letter

NAME_____

BIRTHDATE_____**AGE**_____

HOMEROOM TEACHER_____

STUDENT PERMISSION FORM
THE TRANSITION TO HIGH SCHOOL AND
RELATIONSHIPS WITH PEERS
SEPTEMBER 1992

Please read and sign the following statement if you wish to be in our study.

I have been asked to be in a research study that Dr. W. M. Bukowski is doing on the transition from elementary school to high school. In this study he will examine the perceptions that young people like myself have of themselves and their peers. I know that if I agree to be to be in the study, I will be asked to fill out a questionnaire that will include questions about myself, about who I get along with in school and how I get along with my friends. I know I will also be asked to indicate whether or not I agree with some statements about why someone might or might not become someone else's friend.

I know I do not have to be in the study, and that even if I start to take part in it, I can quit if I decide that I do not want to participate any longer. Also, I know that my answers will be confidential. That is, I know that no one but Dr. Bukowski, his assistants, and I will know what I say on the questionnaire. Dr. Bukowski promised me that he will not tell anyone what I say in the questionnaire. I also know that if I do not want to answer a particular question in any of the questionnaires, I can leave the question blank.

My name is:

(Print)_____

Date_____

(Sign)_____

Appendix C

Sociometric Nomination Form

The first thing we would like to know about is who you are friends with and who you spend time with at school. In the space below, put the name of the persons (both boys and girls) in your grade who are your best friends. Put your best friend on line one, second best on line two, third best on line three, fourth best on line four and then any others who are your best friends. You can list as many or as few persons as you want. You don't need to put down a particular number of names. But, the names you choose must be from the list we gave you.

1. _____

2. _____

3. _____

4. _____

Appendix D

Target Peer Selection Form

Boys' Form

MEETING NEW PEOPLE AND MAKING NEW FRIENDS

Now we would like to know how you feel about some of the people you have met at your new school. Starting Grade Seven at a new school gives you a chance to meet a lot of people you did not know before. You may become good friends with some of the people you have met since school started this year, even if you are not friends with them yet.

We have given you lists of all the students in your grade. **Please find your name and circle it.**

Now, think of all the boys you have met since school started this year. Who do you think might become a good friend?

Pick three boys who you think might become good friends. Find their names on the list and **put check marks beside each of their names.** Please pick boys whose names are on the lists.

Remember, **do not check the names of people who are friends from Grade Six.** We want to know about people who <u>you just met</u> who might become good friends.

Once you have checked the names of three boys, we would like you to fill out one questionnaire for each of the three people. On the next few pages, you will find three copies of the **Relationship Activity Questionnaire**. There's one for each person whose name you just checked.

Write **your** name on the top of each questionnaire. Then, for each questionnaire, where it says "put the name of the person who you think you might become friends with here", put in one of the three names you just checked. **Do one questionnaire for each person.**

Appendix E

Target Peer Friendship Qualities Scale

Your Name _____ Boys' Form

RELATIONSHIP ACTIVITY QUESTIONNAIRE

Put the name of the person who you think you might become friends with here _____.

We have some sentences that we would like you to read and then tell us whether this sentence describes your relationship with the person you named above. Some of the sentences might be really true for your relationship while other sentences might be not very true. We simply want you to read the sentence and tell us how true it is for your relationship. Remember, there are no right or wrong ways to answer these questions.

After each sentence there is a scale that goes from 1 to 5.
"1" means the sentence is not true for your relationship,
"2" means that it might be true,
"3" means that it is usually true,
"4" means that it is very true,
"5" means that it is <u>really</u> true for your relationship.
<u>Circle</u> the number on the scale that is best for you. Be sure to read carefully and answer as honestly as possible.

Remember, these questions are about you and the person you named above, who you think you might become friends with. When answering the questions, think of that person and how you and he get along right now. Whenever you see a blank (___) it means you should think of that person, but you don't have to write his name in each blank.

<u>Example</u>

		Not	Usually	Really
_____	and I play games and do other activities together.	True	True	True
		1------2------3------4------5		

[Scales beside each question were omitted for presentation in dissertation.]

1. ___ and I spend all our free time together.
2. If I forgot my lunch or needed a little money ___ would loan it to me.
3. ___ and I disagree about many things.
4. Sometimes ___ does things for me, or makes me feel special.
5. If ___ and I have a fight or argument, we can say we're sorry and everything will be alright.
6. ___ helps me when I am having trouble with something.
7. ___ thinks of fun things for us to do together.

8. ___ would help me if I needed it.
9. I can get into fights with ___.
10. ___ would stick up for me if another kid was causing me trouble.
11. If I have a problem at school or at home I can talk to ___ about it.
12. If ___ had to move away I would miss him.
13. ___ can bug or annoy me even though I ask him not to.
14. If I said I was sorry after I had a fight with ___ he would still stay mad at me.
15. ___ and I go to each other's houses after school.
16. I feel happy when I am with ___.
17. Sometimes ___ and I just sit around and talk about things like school, sports, and things we like.
18. When I do a good job at something, _ is happy for me.
19. If ___ or I do something that bothers the other one, we can make up easily.
20. ___ and I can argue a lot.
21. I think about ___ even if he is not around.
22. If other kids were bothering me ___ would help me.
23. If there is something bothering me I can tell ___ even if it is something I can not tell to other people.

[Scoring key added for dissertation]

Scoring

Companionship:	Mean of items 1, 7, 15, and 17.
Help:	Mean of items 2, 6, 8, 10, and 22.
Closeness:	Mean of items 4, 12, 16, 18, and 21.
Security:	Mean of items 5, 11, 19, and 23.
Conflict:	Mean of items 3, 9, 13, 14, and 20.

Appendix F

Total Number of Nominated and Reciprocated Friendships

Table F1

Total Number of Nominated and Reciprocated Friendships as a Function of Gender and Time

		Time of testing					
Gender		1	2	3	4	5	6
		Number of nominated friendships					
Boys	M	3.94	4.06	4.24	4.06	4.18	4.00
	SD	1.92	1.41	1.44	1.60	1.45	1.17
Girls	M	3.21	5.18	5.39	5.33	4.36	4.82
	SD	1.71	1.85	1.90	2.22	1.95	1.85
		Number of reciprocated friendships					
Boys	M	2.64	2.00	2.39	1.94	1.97	1.94
	SD	1.60	1.50	1.54	1.58	1.36	1.46
Girls	M	2.42	2.73	2.42	2.36	1.94	2.21
	SD	1.15	1.31	1.17	1.60	1.37	1.22

Note. N = 33 boys and 33 girls.

Table F2

Source Table for 2 (Gender) by 6 (Time) Doubly Multivariate MANOVA on Total Number of Nominated and Reciprocated Friendships

Tests of assumptions

Homogeneity of dispersion:

Box's M = 119.9, F (78, 12934) = 1.23, ns.

Homogeneity of regression:

F (36, 209.2) = 1.05, ns.

IV	Wilk's Λ	Multivariate F	df
Gender (G)	0.94	1.95	2/63
Time (T)	0.57	4.20***	10/55
G x T	0.71	2.26*	10/55

Note. IV = independent variable.

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

Table F3

Correlations Among Number Nominated and Reciprocated Old, New-Familiar, and New-Unfamiliar Friendships

	Time of testing			
Variable pair	2	3	4	5
	Nominated friendships			
Old with new-fam	-.36**	-.48***	-.06	-.15
Old with new-unfam	-.11	-.18	-.26	-.16
New-fam with new-unfam	-.08	-.18	-.09	-.25*
	Reciprocated friendships			
Old with new-fam	-.16	-.34**	.10	-.15
Old with new-unfam	-.01	-.02	-.22	-.09
New-fam with new-unfam	.16	-.10	-.01	.09

Note. N = 66. Old = old friendships; New-fam = new friendships with previously familiar peers; New-unfam = new friendships with previously unfamiliar peers.

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

Appendix G

Number of Nominated and Reciprocated Old Friendships

Table G1

Number of Nominated and Reciprocated Old Friendships as a Function of Gender and Time

Gender	n		Time 2	3	4	5
			Number of nominated friendships			
Boys	31	M	2.10	2.10	1.74	1.74
		SD	1.30	1.33	1.29	1.24
Girls	33	M	1.76	1.36	1.12	1.09
		SD	0.97	0.90	0.86	0.81
			Numbers of reciprocated friendships			
Boys	31	M	1.03	1.36	0.90	0.87
		SD	1.08	1.23	1.11	1.06
Girls	33	M	0.94	0.61	0.24	0.33
		SD	0.75	0.66	0.44	0.48

Table G2

Source Table for 2 (Gender) by 4 (Time) Doubly Multivariate MANOVA on Number of Nominated and Reciprocated Old Friendships

Tests of assumptions

Homogeneity of dispersion:

Box's M = 68.77, F (36, 12825) = 1.65, p < .01.[a]

Homogeneity of regression:

F (16, 156.4) = 1.65, ns.

IV	Wilk's Λ	Multivariate F	df
Gender (G)	0.88	4.10*	2/61
Time (T)	0.59	6.54***	6/57
G x T	0.80	2.40*	6/57

Note. IV = independent variable.

[a] When ns are equal or nearly equal, as in this case, F-tests are robust to violations of the assumption of homogeneity of variance-covariance matrices.

* p < .05. *** p < .001.

Appendix H

Number of Nominated and Reciprocated New-Familiar Friendships

Table H1

Number of Nominated and Reciprocated New-Familiar Friendships as a Function of Gender, Time, and Elementary School Size

Gender	Elementary		Time 2	3	4	5
			Number of nominated friendships			
Boys	Small[a]	M	1.20	1.33	1.27	1.20
		SD	1.01	1.18	1.03	0.94
	Large[b]	M	1.50	1.50	1.63	1.31
		SD	1.37	1.32	1.26	0.79
Girls	Small[c]	M	2.00	1.86	1.64	1.14
		SD	1.57	1.29	1.28	1.03
	Large[d]	M	1.74	1.90	1.64	1.11
		SD	1.37	1.73	1.28	1.41
			Number of reciprocated friendships			
Boys	Small[a]	M	1.20	0.93	0.93	0.93
		SD	0.68	0.88	0.80	0.80
	Large[b]	M	0.50	0.75	0.56	0.50
		SD	0.82	1.24	0.73	0.63

(table continues)

Table H1 (cont'd)

Gender	Elementary		Time 2	3	4	5
Girls	Small[c]	M	0.93	0.93	0.86	1.00
		SD	0.83	0.73	0.86	0.68
	Large[d]	M	1.05	1.11	1.21	0.68
		SD	1.03	1.20	1.32	0.89

[a] n = 15. [b] n = 16. [c] n = 14. [d] n = 19.

Table H2

Source Table for 2 (Gender) by 2 (Elementary) by 4 (Time) Doubly Multivariate MANOVA on Number of Nominated and Reciprocated New-Familiar Friendships

Tests of assumptions

Homogeneity of dispersion:

Box's M = 158.74, F (108, 7310) = 1.10, ns.

Homogeneity of regression:

F (48, 160) = 0.96, ns.

IV	Wilk's Λ	Multivariate F	df
Between-subjects effects			
Gender (G)	0.98	0.64	2/59
Elementary (E)	0.96	1.17	2/59
G x E	0.92	2.59	2/59
Within-subjects effects			
Time (T)	0.81	2.09	6/55
G x T	0.87	1.41	6/55
E x T	0.93	0.64	6/55
G x E x T	0.91	0.87	6/55

Note. IV = independent variable.

Appendix I

Number of Nominated and Reciprocated New-Unfamiliar Friendships

Table II

Number of Nominated and Reciprocated New-Unfamiliar Friendships as a Function of Gender, Time, and Elementary School Size

Gender	Elementary		Time 2	3	4	5
			Number of nominated friendships			
Boys	Small[a]	M	0.40	0.80	0.87	0.87
		SD	0.51	1.08	0.92	0.64
	Large[b]	M	0.94	0.75	0.94	1.50
		SD	0.93	0.78	0.93	1.03
Girls	Small[c]	M	1.29	2.00	3.00	2.57
		SD	1.49	1.80	1.71	1.99
	Large[d]	M	1.79	2.26	2.16	1.84
		SD	1.40	2.26	2.01	1.77
			Number of reciprocated friendships			
Boys	Small[a]	M	0.27	0.27	0.20	0.27
		SD	0.46	0.46	0.56	0.46
	Large[b]	M	0.13	0.31	0.38	0.44
		SD	0.34	0.60	0.81	0.81

(table continues)

Table I1 (cont'd)

Gender	Elementary		Time 2	3	4	5
Girls	Small[c]	M	0.36	0.50	1.36	0.57
		SD	0.63	0.76	1.50	1.09
	Large[d]	M	1.11	1.00	0.84	0.95
		SD	0.88	0.88	0.90	0.91

[a] n = 15. [b] n = 16. [c] n = 14. [d] n = 19.

Table I2

Source Table for 2 (Gender) by 2 (Elementary) by 4 (Time) Doubly Multivariate MANOVA on Number Nominated and Reciprocated New-Unfamiliar Friendships

Tests of assumptions

Homogeneity of dispersion:

Box's M = 173.50, F (108, 7310) = 1.20, ns.

Homogeneity of regression:

F (48, 160) = 0.95, ns.

IV	Wilk's Λ	Multivariate F	df
Between-subjects effects			
Gender (G)	0.78	8.17***	2/59
Elementary (E)	0.98	0.75	2/59
G x E	0.95	1.40	2/59
Within-subjects effects			
Time (T)	0.74	3.22**	6/55
G x T	0.86	1.67	6/55
E x T	0.85	1.62	6/55
G x E x T	0.72	3.49**	6/55

Note. IV = independent variable.

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

Table I3

Source Table for Follow-up 2 (Elementary) by 4 (Time) Doubly Multivariate MANOVA on Number Nominated and Reciprocated New-Unfamiliar Friendships

IV	Wilk's Λ	Multivariate F	df
	Girls		
Elementary (E)	0.91	1.39	2/30
Time (T)	0.55	3.50*	6/26
E x T	0.53	3.81**	6/26
	Boys		
Elementary (E)	0.94	0.92	2/28
Time (T)	0.60	2.72*	6/24
E x T	0.77	1.22	6/24

Note. IV = independent variable.

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

Table I4

Summary of Follow-up Stepdown F-tests for Significant Multivariate Elementary Size by Time Interaction: Girls' New-Unfamiliar Friendships

IV	Variate	Univariate F	df	Stepdown F	df	α
E x T	Nominated	4.49[a]	3/93	4.49**	3/93	.025
	Reciprocated	6.21[a]	3/93	4.10**	3/92	.025

Note. IV = independent variable; Variate = linear combination of dependent variables; E x T = Elementary Size by Time.

[a] Significance level can not be evaluated but would reach $p < .025$ in univariate context.

** $p < .01$.

Appendix J

Onset of New Friendships

Table J1

Number of Newly-Formed Friendships as a Function of Gender, Previous Familiarity, and Time

Gender		Time 2	3	4	5
		Previously familiar peers			
Boys	M	0.84	0.32	0.32	0.19
	SD	0.82	0.65	0.54	0.40
Girls	M	0.97	0.46	0.30	0.24
	SD	0.85	0.56	0.53	0.56
		Previously unfamiliar peers			
Boys	M	0.19	0.16	0.19	0.10
	SD	0.40	0.45	0.54	0.30
Girls	M	0.85	0.39	0.58	0.12
	SD	0.91	0.61	0.83	0.33

Note. N = 31 boys, 33 girls.

Table J2

Source Table for 2 (Gender) by 2 (Previous Familiarity) by 4 (Time) ANOVA on Onset of New Friendships

Tests of assumptions		
Homogeneity: Box's M = 52.3, F (36, 12825) = 1.25, ns.		
Sphericity: Time, χ^2 (5) = 13.5, p < .05.[a]		
Time x Familiarity, χ^2 (5) = 4.67, ns.		
Source	**df**	**F**
Between subjects		
Gender (G)	1	13.03***
S within-group error	62	(0.39)
Within subjects		
Previous Familiarity (F)	1	5.65*
G x F	1	5.03*
F x S within-group error	62	(0.40)
Time (T)	3	16.59***
G x T	3	1.67
T x S within-group error	186	(0.41)
F x T	3	3.50*
G x F x T	3	1.62
F x T x S within-group error	186	(0.32)

(table continues)

Table J2 (cont'd)

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

[a] A significant violation of the sphericity assumption indicates that df for F-tests should be corrected. Results are the same with or without correction, so uncorrected df are reported.

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

Appendix K

Characteristics of Youth Selected as Target Peers

Table K1

Means and Standard Deviations for Peer Acceptance, Peer Rejection, and Number of Friendships as a Function of Gender and Whether Selected as a TP

Gender	n		Acceptance	Rejection
		Selected as TP		
Boys	37	M	0.06	-0.13
		SD	1.06	0.88
Girls	37	M	0.22	-0.2
		SD	0.89	0.65
		Not selected as TP		
Boys	14	M	-0.55	0.41
		SD	0.94	1.44
Girls	14	M	-0.29	0.42
		SD	0.64	1.27

Note. Higher scores reflect greater peer acceptance and peer rejection. With $n = 14$ in the smaller groups and $\alpha = .05$, oneway ANOVAs on the Selected factor had sufficient power to detect only very large effects (Cohen, 1992).

Table K2

Source Table for 2 (Gender) by 2 (Selected) Factorial ANOVAs on Peer Acceptance, Peer Rejection, and Number of Reciprocated Friendships

Bartlett-Box tests of univariate homogeneity	
Peer acceptance:	F (3, 10207) = 1.4, ns.
Peer rejection:	F (3, 10207) = 5.7, $p < .05$.[a]

		F	
Source	df	Acceptance	Rejection
Selected (S)	1	7.36**	7.35**
Gender (G)	1	1.07	0.02
S x G	1	0.06	0.03
S within-group error	98	(0.87)	(0.93)

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

[a] F-tests are robust to violations of the homogeneity of variance assumption when the ratio of largest to smallest sample size is less than 1.5 (Stevens, 1992). In this case, the ratio is 37/14 = 2.6 and robustness can not be assumed. The smaller cells have larger variances, which is likely to make the F-test too liberal (Tabachnick & Fidell, 1996). Consequently, the results for Peer Rejection should be interpreted with caution.

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

Appendix L

Perceptions of Relationship Qualities at Time of Target Peer Selection

Table L1

Initial Perceptions Subsample: Time 2 Peer Acceptance, Time 2 Peer Rejection, and Time 2 Number of Reciprocated Friendships by Sample and Gender

Gender	n		Acceptance	Rejection	No. friends
		Subsample for analyses			
Boys	21	M	-0.22	-0.06	1.62
		SD	0.73	0.95	1.12
Girls	22	M	0.13	-0.44	2.68
		SD	0.61	0.43	1.32
		Remaining Time 2 participants			
Boys	30	M	-0.01	0.08	1.77
		SD	1.30	1.19	1.55
Girls	29	M	0.05	0.29	2.69
		SD	1.03	1.05	1.63

Note. Higher scores reflect greater peer acceptance, peer rejection, and number of friendships. No. friends. = number of reciprocated friendships.

Table L2

Initial Perceptions Subsample: Source Table for 2 (Sample) by 2 (Gender) ANOVAs on Peer Acceptance, Peer Rejection, and Number of Reciprocated Friendships

Bartlett-Box tests of univariate homogeneity	
Peer acceptance:	F (3, 16303) = 5.1, $p < .01$.[a]
Peer rejection:	F (3, 16303) = 3.1, $p < .05$.[a]
Number of friends.:	F (3, 16303) = 1.2, ns.

		F		
Source	df	Acceptance	Rejection	No. friends
Sample (S)	1	0.12	4.54*	0.07
Gender (G)	1	1.09	0.06	11.70***
S x G	1	0.56	3.16	0.06
S within-group error	98	(0.99)	(0.19)	(2.09)

Note. Values enclosed in parentheses represent mean square errors. No. friends. = number of reciprocated friendships; S = subjects.

[a] F-tests are robust to violations of the homogeneity of variance assumption when the ratio of largest to smallest sample size is less than 1.5 (Stevens, 1992). In this case, the ratio is 30/21 = 1.4 and robustness is assumed.

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

Table L3

Initial Perceptions Subsample: Time 2 Presence of Best Friendship by Sample for Boys and Girls

Sample	Best friendship: Present	Best friendship: Absent	Row total
Boys			
Subsample	11	10	21
Remaining	13	17	30
Column total	24	27	51
		χ^2 (1, N = 51) = 0.4, ns.	
Girls			
Subsample	9	13	22
Remaining	15	14	29
Column total	24	27	51
		χ^2 (1, N = 51) = 0.6, ns.	

Table L4

Source Table for 2 (Gender) by 2 (Relationship Outcome) ANOVAs on Time 2 Positive Qualities and Conflict

Bartlett-Box tests of univariate homogeneity	
Positive qualities:	F (3, 2726) = 0.9, ns.
Conflict:	F (3, 2726) = 1.1, ns.

		F	
	df	Positive Qualities	Conflict
Gender (S)	1	10.46**	3.86'
Relationship Outcome (R)	1	0.37	1.40
S x R	1	1.53	0.91
S within-group error	39	(0.49)	(0.61)

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

' $p < .10$. ** $p < .01$.

Appendix M

Perceptions of Relationships During the Transition to Friendship

Table M1

Relationship Transition Subsample: Time 2 Peer Acceptance, Time 2 Peer Rejection, and Time 2 Number of Reciprocated Friendships by Group and Gender

Gender	n		Acceptance	Rejection	No. friends
		Subsample for analyses			
Boys	5	M	-0.10	-0.37	1.40
		SD	0.53	0.31	0.55
Girls	8	M	0.20	-0.57	2.63
		SD	0.28	0.23	0.52
		Remaining Time 2 participants			
Boys	46	M	-0.10	0.07	1.74
		SD	1.14	1.14	1.44
Girls	43	M	0.07	0.08	2.70
		SD	0.94	0.95	1.61

Note. Higher scores reflect greater peer acceptance, peer rejection, and number of friendships. No. friends. = number of reciprocated friendships.

Table M2

Relationship Transition Subsample: Source Table for 2 (Group) by 2 (Gender) ANOVAs on Peer Acceptance, Peer Rejection, and Number of Reciprocated Friendships

Bartlett-Box tests of univariate homogeneity	
Peer acceptance:	F (3, 2204) = 5.0, $p < .01$.[a]
Peer rejection:	F (3, 2204) = 3.4, $p < .05$.[a]
Number of friends.:	F (3, 2204) = 4.4, $p < .01$.[a]

		F		
Source	df	Acceptance	Rejection	No. friends
Sample (S)	1	0.05	2.90	0.22
Gender (G)	1	0.57	0.14	6.16*
S x G	1	0.05	0.39	0.09
S within-group error	98	(0.99)	(0.19)	(2.09)

Note. Values enclosed in parentheses represent mean square errors. No. friends. = number of reciprocated friendships; S = subjects.

[a] When smaller ns are associated with smaller variances, as in this case, F-tests are conservative.

* $p < .05$.

Table M3
Relationship Transition Subsample: Time 2 Presence of Best Friendship by Group and Gender

Sample	Best friendship: Present	Best friendship: Absent	Row total
Boys			
Subsample	3	2	5
Remaining	21	25	46
Column total	24	27	51
			Fisher exact $p = .66$.
Girls			
Subsample	5	3	8
Remaining	19	24	43
Column total	24	27	51
			Fisher exact $p = .45$.

Table M4
Source Table for 2 (Gender) by 2 (Relationship Outcome) by 2 (Time) ANOVAs on Positive Qualities and Conflict

Tests of multivariate homogeneity	
Positive Qualities:	Box's M = 21.2, F (10, 327) = 1.1, ns.
Conflict:	Box's M = 24.0, F (10, 327) = 1.3, ns.

		F	
Source	df	Positive qualities	Conflict
Between subjects			
Gender (G)	1	1.77	3.48^{t}
S within-group error	11	(1.02)	(1.65)
Within subjects			
Time (T)	1	3.40^{t}	0.30
G x T	1	0.41	0.31
T x S within-group error	11	(0.48)	(0.27)
Relationship (R)	1	7.23*	0.20
G x R	1	1.13	0.37
R x S within-group error	11	(0.40)	(0.39)
T x R	1	5.54*	6.62*
G x T x R	1	0.36	9.52**
T x R x S within-group error	11	(0.27)	(0.07)

Note. Values enclosed in parentheses represent mean square errors. S = subjects.
^{t} $p < .10$. * $p < .05$. ** $p < .01$.

Appendix N

Perceptions of New Friendships

Table N1

Perceptions of New Friendships Subsample: Time 2 Peer Acceptance, Time 2 Peer Rejection, and Time 2 Number of Reciprocated Friendships by Group

Sample	n		Acceptance	Rejection	No. friends
Subsample	12	M	1.05	-0.17	3.92
		SD	1.25	0.69	1.73
Remaining	90	M	-0.14	0.02	1.97
		SD	0.86	1.04	1.33

Note. Higher scores reflect greater peer acceptance, peer rejection, and number of friendships. No. friends. = number of reciprocated friendships.

Table N2

Perceptions of New Friendships Subsample: Source Table for One-way ANOVAs on Peer Acceptance, Peer Rejection, and Number of Reciprocated Friendships

Bartlett-Box tests of univariate homogeneity	
Peer acceptance:	$F(1, 3180) = 3.3$, ns.
Peer rejection:	$F(1, 3180) = 1.1$, ns.
Number of friends.:	$F(1, 3180) = 1.5$, ns.

		F		
Source	df	Acceptance	Rejection	No. friends
Sample	1	18.13***	0.19	21.21***
S within-group error	100	(0.83)	(0.20)	(1.90)

Note. Values enclosed in parentheses represent mean square errors. No. frds. = number of reciprocated friendships; S = subjects.

*** $p < .001$.

Table N3

Perceptions of New Friendships Subsample: Time 2 Presence of Best Friendship by Group

	Best friendship		
Sample	Present	Absent	Row total
Subsample	7	5	12
Remaining	41	49	90
Column total	48	54	102

χ^2 (1, N = 102) = 0.7, ns.

Table N4

Source Table for Oneway ANOVAs on Positive Qualities and Conflict

Test of sphericity assumption	
Positive qualities:	χ^2 (5) = 15.3, $p < .01$.[a]
Conflict:	χ^2 (5) = 7.3, ns.

		F	
Source	df	Positive qualities	Conflict
	Within subjects		
Constant	1	434.43***	85.17***
S within-group error	11	(1.59)	(1.76)
Time	3	0.42	0.26
S within-group error	33	(0.13)	(0.19)

Note. Values enclosed in parentheses represent mean square errors. S = subjects.

[a] A significant violation of the sphericity assumption indicates that df for F-tests should be corrected. Results are nonsignificant with or without correction, so uncorrected df are reported.

*** $p < .001$.