Closeness and Conflict in Children's Friendships: Relations with Friendship Stability, Adjustment and Sociometric Status

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Table of Contents

Page

Table of Contents cont.

Page

List of Tables

Page

List of Tables cont.

Page

List of Figures

Page

Abstract

Not many children report relationships with friends that are both close and conflictual. There is a paucity of research examining the trajectory of children's relationship closeness and conflict together over time. This is unfortunate because contentious relationships are related to cardiovascular problems, at least in young adults and because the trajectories of these two aspects of children's relationship quality over time is not understood. Therefore, two longitudinal data sets with younger (mean age 7.5 years at Time 1; four data points over 2 years) and older (mean age 9.9 years at Time 1; two data points over 1 year) children were studied. In both cohorts, measures of friendship quality and peer nominations of liking/disliking as well as overt and relational (older cohort) aggression were completed. Children who reported relationships high in both closeness and conflict were generally satisfied with their friendships; they were not more likely to end their friendships than were children who reported different levels of closeness and conflict (younger cohort). Both boys' and girls' relationship closeness increased over time according to growth curve analyses. The relationships of girls who remained in the same friendship, and who therefore provided ratings on the same friend at each time point, tended to increase in closeness at a different rate over time than the relationships of girls who provided ratings on different friends (younger cohort). Children who reported relationships high in closeness and in conflict were not more aggressive over time than were children who reported different levels of relationship closeness and conflict. However, girls' closeness and overt aggression tracked each other (increased) over time (younger cohort). Girls who reported low social support and negative interactions in their friendships increased the most in overt aggression over time (older

cohort). Aggressive and nonaggressive children generally reported similar friendship quality (both cohorts), but the friendship closeness of chronically aggressive boys decreased over time (younger cohort). There were negligible friendship quality differences amongst the sociometric groups. The discussion centers on friendship quality changes in children's continuing friendships, the potential dire effects of turbulent friendships and the friendships of aggressive as well as controversial children.

Closeness and conflict in children's friendships: Relations with friendship stability, adjustment and sociometric status

According to the literature on close relationships between adults (Gottman, 1994; Rook, 1984), interpersonal relationships can be both highly intimate and highly conflict-ridden at the same time. Although most children argue with their friends to a certain extent (see review by Hartup & Shantz, 1992), researchers contend that children who are very close with their friends generally do not also argue or fight frequently with their friends (Berndt, 2002). However, there are some children who perceive their relationships with friends as both close and conflictual (e.g., Daniels, Quigley, Menard, & Spence, 2010). The literature on these children is limited. It is unclear how these children manage the intensity and stress that characterize their relationships (Berndt, 2002; Rubin, Fredstrom, & Bowker, 2008). The lack of knowledge in this area is concerning, given that such intensity and stress may lead children to change friends frequently. Changing friends could compromise the secure attachments provided by stable friendships (Howes, 1988). Very close yet conflict-ridden relationships amongst early adolescents are also associated with increased disruptive classroom behaviour over time (e.g., Berndt & Keefe, 1995). Furthermore, recent research with adults shows that *ambivalent* relationships (i.e., friends who are deeply loved and cared for and also unreliable, critical and frustrating) are associated with cardiovascular stress, such as high blood pressure and higher resting heart rate (Holt-Lunstad, Uchino, Smith, & Hicks, 2007; Uchino et al., 2001). Therefore, these relationships may represent a health hazard. For these reasons, the main goals of the present study were: 1) to understand the course of children's relationships that are both highly close and conflictual over time; and 2) to test the link between such relationships and aggressive behaviour over time.

A third aim of this study was to examine the friendship quality of children of different peer status categories. In particular, the friendships of controversial children – who are both liked and disliked by many of their peers – will be a focus because of the desirable and undesirable characteristics that they may bring to their friendships. The reactions they provoke in their friends may be characterized as ambivalent to the degree that they bring to their close relationships the combination of liked and disliked behaviours and characteristics that characterize their reputations in larger groups.

Friendships in childhood - Definition and formation

A friendship is a voluntary dyadic relationship between two individuals that involves reciprocal liking (Bukowski & Hoza, 1989). Stated differently, both children must indicate that they like each other and understand their relationship as intimate and enduring in order to be considered friends. Intimacy and closeness are probably the most important building blocks in children's friendships (Bukowski & Hoza, 1989). There are other various building blocks that facilitate the formation of a friendship. Cooperation and sharing are often linked to the formation of friendships between children (Hartup, 1989). Cooperation on various tasks, sharing toys and feelings, and engaging in pleasurable activities will likely foster a long-term friendship (Newcomb & Bagwell, 1995). Other elements such as propinquity, similarity, and reciprocity also facilitate friendship formation. The chances of children forming friendships depend in large part on their physical proximity (e.g., going to the same school; Clark & Drewry, 1985). Friendships in childhood also tend to be based on similarity in age, race, and sex (Berndt, 1982) as well as values and attitudes (Ladd & Emerson, 1984). Friends are also similar in terms of aggressive, withdrawn, depressive, and prosocial behaviours and in their

sociometric and victimization status (Haselager, Hartup, van Lieshout, Risken-Walraven, & Marianne, 1998; Kupersmidt, DeRosier, & Patterson, 1995). Children who are more similar in aggressive behaviour, for example, have been found to be friends more often than children who are less similar in aggression (e.g., Kupersmidt et al., 1995). Children also expect a certain degree of reciprocity or mutual give-and-take in their friendships (Berndt, 1982). Feelings of equality will also likely lead children to make and keep the same friendships (Asher, Parker, & Walker, 1996), whereas relationships devoid of sharing, closeness or feelings of equality may not last (Asher et al., 1996; Rubin, Fredstrom, & Bowker, 2008).

Benefits of having friends

The building blocks set a foundation in which children derive benefits from having friends. Sullivan (1953) underscored the idea that peer acceptance is important to children's wellbeing. He also stressed the value of having a same-sex close friend, or "chum" around 8 or 9 years of age with whom children experience interpersonal intimacy. Sullivan believed that having a friend fosters empathy for others and validates children's identity. Furthermore, successful relational interactions at this age provide a template for successful interaction with others later in life. Berndt and Perry (1986) echoed Sullivan's views and maintained that friends provide a source of support for children in times of need. For instance, children expect their friends to share with, help, and defend them in times of need. Therefore, friendships are important to children's well-being, both concurrently and across time.

Research has demonstrated some of the specific benefits of having friends. For example, befriended children score lower on measures of loneliness (Parker & Asher,

1993), have fewer peer-victimization experiences (Hodges, Boivin, Vitaro, & Bukoswski, 1999), and have higher self-esteem (Keefe & Berndt, 1996) compared to friendless children. Results of a meta-analysis showed that children in reciprocal relationships reported greater sharing, conflict resolution skills, and task performance than did children who have no reciprocal friendships (Newcomb & Bagwell, 1995). Gest, Graham-Bermann, and Hartup's (2001) research indicated that children who had many friends were more prosocial and good-humoured and less likely to tease or boss others than were children with no or few friends. Furthermore, the combination of having friends and from being accepted by peers during childhood plays a role in positive life adjustment during adulthood (Bagwell et al., 2001).

Despite the general benefits of having friends, certain relationships can have harmful effects as well. For example, some research has shown that children can be victimized by their friends (Crick & Nelson, 2002; Daniels, Quigley, Menard, & Spence, 2010; Mishna, Weiner & Pepler, 2008). More specifically, third- through sixth-grade girls are more likely to be relationally victimized (e.g., target of hurtful gossip) by their friends than are boys, who are more likely to be physically victimized by their friends than are girls; however, relational victimization occurs within boys' friendships as well (Crick & Nelson, 2002). Children who are victimized by their friends find it confusing and stressful (Mishna et al., 2008); they have adjustment problems such as social anxiety, loneliness and externalizing behaviour problems (Crick & Nelson, 2002). The potential benefits of having friends may depend on the quality of children's friendships, as will be reviewed later.

Boys' and girls' friendships

There are important differences between the friendships of boys and girls. The building blocks of friendship and the nature of activities shared by friends appear to be different for boys and girls because their social worlds are gender differentiated (Maccoby, 1990; Zarbatany, McDougall, & Hymel, 2000). Therefore, children mainly form friendships with members of the same sex. This is thought to occur for a variety of reasons, such as the type and structure of boys' and girls' activities, friendship expectations, and children's motivations to form friendships. With regard to the type and structure of activities, boys tend have a higher number of loosely-knit friendships that are less exclusive than those of girls (Rose & Rudolph, 2006). Boys enjoy rough-and-tumble play and they generally engage in more frequent fighting than do girls (Maccoby, 1990). The rough-and-tumble nature of boys' play may stem from their concerns with dominance in the peer group (e.g., Pelligrini & Bartini, 2001; Savin-Williams, 1979). Girls, on the other hand, tend to prefer dyadic relationships based on intimacy and they desire emotional exchange in their friendships (Belle, 1989; Bigelow, 1982). Intimate bonds between girls are often characterized by sharing personal concerns (Rose & Rudolph, 2006).

Motivations for friendship also differ for boys and girls. Girls have been found to be more intrinsically motivated to form relationships (Richard & Schneider, 2005) and to care more about their relationships than do boys (Rose & Rudolph, 2006). Boys and girls also choose same-sex friends depending on their social needs. For instance, some friends may be chosen for relationship-enhancing reasons, whereas others may be chosen to

improve opportunities for achieving dominance amongst peers (e.g., Pelligrini & Bartini, 2001; Rose & Rudolph, 2006).

Friendships in cultural context

Just as there are differences between boys' and girls' friendships, there are cultural differences in friendship expectations and beliefs (Krappmann, 1996; Schneider, 1993). According to Triandis (1995), these differences are partially related to the degree to which individualism or collectivism characterizes children's cultures of origin. People in individualistic cultures (e.g., North America) stress the need for personal achievement and striving toward autonomous goals, whereas people in collectivistic cultures (e.g., China) prize group harmony and well-being (Triandis, 1995). Studies on children's friendships have indicated that children in collectivistic areas, such as Taiwan, tend to report lower levels of conflict than do North American children of majority culture (Benjamin, Schneider, Greenman, & Hum, 2001), suggesting that a collectivistic orientation may influence the level of conflict tolerated or reported within a friendship. French, Pidada, and Victor's (2005) research showed that North American children report greater enhancement of self-worth in their friendships than Indonesian children whereas Indonesian children report more instrumental aid in their friendships. It is possible that North American children engage in more esteem-enhancing behaviours than do Indonesian children because of the importance placed on promoting individual needs (e.g., Kitayama, Markus, Matsumoto, & Norasakkunkit, 1997).

Not all countries can be considered as entirely individualistic or collectivistic, however. For example, a society can be individualistic in certain domains, such as education and work but remain collectivistic in such areas as family or village life (Kim,

Triandis, Kagitcibasi, Choi and Yoon, 1994). Italy represents a mix of both of these dimensions (Schwartz & Ros, 1995). According to Schwartz & Ros' (1995) research, Italians strive for individual achievements, while valuing nonetheless the well-being of the collective. Therefore, interpersonal relationships in these areas may reflect a mix of individualistic and collectivistic orientations. Italians prefer maintaining friendships with few close others according to D'Agostino Mautner (2003) and they have close ties to family members (Lanaro, 1992, cited in Schneider, Fonzi, Tani, & Tomada, 1997). Both conflict and sharing are common features of close relationships in Italy (Argyle, Henderson, Bond, Iizuka, & Contarello, 1986). Sociological studies of Italian children's play at school illustrate the concept of *discussione*, which is a highly stylized, emotional interaction that takes place between children during conflict resolution (Corsaro & Rizzo, 1988). Disagreeing and solving conflict with some intensity appears to be normative amongst Italian children and their friends. This stands in contrast to Chinese children's interactions, in which conflict and emotionally-laden interactions are frowned upon because they may disrupt valued group harmony (Chen, 2000). Therefore, Italian children may be more comfortable with both conflict and closeness in their relationships than Chinese children, for example. It follows logically, then, that Italy is an ideal area to study contentious relationships.

Friendship stability

The reported rate of friendship stability in childhood and adolescence varies from study to study. However, the majority of children's friendships are stable during the same school year according to North American studies (Berndt & Hoyle, 1985; Bowker, 2004; Ladd, Kochenderfer, & Coleman, 1996) and according to research conducted in Italy and

China (Benjamin et al., 2001; Schneider, Fonzi, Tani, & Tomada, 1997). Girls tend to have lower rates of friendship stability than boys, suggesting greater fragility in girls' friendships (Benenson & Christakos, 2003; Berndt & Hoyle, 1985). Girls may have more unstable friendships than boys given the high expectations they have of their friends. For example, in line with the gender differences in friendship described earlier, girls may change friends more frequently when friends do not provide closeness or intimacy. Boys, on the other hand, do not expect intimacy as much as girls do and they may stay in relationships devoid of intimacy. Conversely, boys may change friends if not enough excitement is provided through shared activities (e.g., Berndt, 1982; Rose & Rudolph, 2006).

Keeping the same friend over time is related to children's social adjustment. For instance, friendship stability provides a buffer against depressive feelings in children (Chan & Poulin, 2009). In Ladd's (1990) influential study, maintaining a friendship predicted an increase in liking school over the year. Others have found that stable, reciprocal friendships in adolescence have a greater impact on academic outcomes than do unreciprocated and unstable friendships (Epstein, 1989; Kandel, 1978). In addition, children with high-quality, stable friendships often have more positive interactions with other peers than do children with unstable friendships (Asher, Parker, & Walker, 1996).

Over and above the length of a friendship, whom children befriend is also important (Hartup, 1996). Consistent with this argument, it has been shown that children's adjustment over time depends on the characteristics of their friends. For instance, children's tolerance of aggressive behaviour has been found to increase when they have stable friendships with other aggressive children (Newcomb, Bukowski, &

Bagwell, 1999). The change in children's tolerance of aggressive behaviour probably explains why there is consistency over time in children's and their friends' proactive aggressive behaviours as rated by teachers (Poulin & Boivin, 2000). Similarly, children's aggressive behaviour is likely to decrease over time if their friends' level of aggression is low (Adams, Bukowski, & Bagwell, 2005; Warman & Cohen, 2000). Furthermore, befriending a popular child has been shown to increase a child's peer-rated popularity, while the opposite is true for a child who befriends an unpopular child (Newcomb et al., 1999). Newcomb and colleagues showed that the reputations of children's best friends (as opposed to their second- or third-rated reciprocal best friends) predicted their peer-rated popularity and aggression. These findings reveal that best friendships are more powerful determinants of influence than are second- or third-rated friendships. These results also suggest that the nature of children's friendships might affect their social development. Specifically, maintaining friendships with aggressive children is related to poorer adjustment than is maintaining friendships with prosocial children.

Some researchers have looked at the link between children's behavioural profiles and changes in friendships across time. For example, Parker and Seal (1996) studied the fluctuations in 8- to 15-year-old children's friendship networks at a summer camp by asking children to rate their peers' social behaviours. Children perceived those who changed friendships often as more likely than other children to engage in playful teasing and to know interesting gossip. Children with unstable friendships were also perceived as bossy, physically aggressive and prone to ridiculing others. Children who mainly lost friends enjoyed playful teasing and gossiping and were viewed as nonaggressive by their peers. Children who mainly kept friends were not as caring and they engaged in less

teasing than others, but this finding was not as pronounced as the findings pertaining to the other groups. Finally, children who increased their number of friends were less likely to be bossy than were other children.

The behaviours of children who frequently changed friendships in Parker and Seal's study (1996) can be viewed as either relationship enhancing (e.g., playfulness) or as relationship distancing (e.g., bossiness). As reviewed later, children who have closer and more intimate relationships tend to interact in ways that promote intimacy in their friendships whereas children who argue with their friends tend to be unhappier in their relationships. Therefore, children who describe their relationships as high in both closeness and conflict may report less stable friendships than children who report relationships high in closeness or high in conflict.

Wojslawowicz-Bowker and colleagues (2006) extended Parker and Seal's (1996) study by examining the fluidity of friendships over a school year. They found that children who lost friends over the year were more often victimized than were other children and that those who had stable friendships were more popular, prosocial and nonaggressive than were other children (see also, Ellis & Zarbatany, 2007). These findings are somewhat consistent with Parker and Seal's findings and suggest that those who keep, versus those who lose, their friends display more positive behaviours. Other studies focused on friendship stability as a function of friendship quality will be reviewed in the friendship quality section below.

In summary, it appears that most children are capable of keeping their friends. Children's adjustment is related to whom they stay friends with. Finally, children who frequently change friendships appear to engage in a blend of behaviours, such as

playfulness as well as bossiness, with their peers. As it will be reviewed later, prosocial and caring behaviours are part of enhancing intimacy within a friendship, whereas behaviours such as aggression and bossiness are related to friendship conflict. Based on studies of children who frequently change friendships, relationships with high levels of both closeness and conflict may not last over time.

Provisions obtained from social relationships

Weiss (1974) argued that there are six provisions people receive in close personal relationships. These provisions include a) attachment (a sense of security, affection and intimacy); b) social integration (being able to share concerns, possibility for companionship); c) opportunity for nurturance (a concern for one's well-being); d) reassurance of worth (validating ones sense of self-worth); e) a sense of reliable alliance (a lasting bond); and f) guidance (tangible support from a trustworthy source). Importantly, Weiss claimed that provisions not achieved in a particular relationship will likely be sought out in another relationship. Although Weiss' theory (1974) was originally based on adult relationships, Furman and Buhrmester (1985) applied his theory to children's relationships with mothers and fathers, grandparents, siblings, best friends and teachers.

More recent research emphasizes that there are two dimensions of friendship quality (Berndt, 2002; Furman, 1996). One dimension refers to the level of companionship, help/prosocial behaviour, closeness, security, exclusivity, validation, caring, warmth, commitment and conflict resolution within the friendship and the other dimension refers to the level of conflict and betrayal present in the relationship (Bukowski et al., 1996). The two dimensions have been found to correlate with each

other, albeit weakly (Berndt, 2002). Using different methodologies to study children's friendships, several researchers have reported a two-factor dimensional structure of friendship quality (Furman, 1996). Overall, this would suggest that both closeness and conflict should be studied in order to gain an accurate picture of the quality of children's friendships. It is important to note that friendship quality is important at all ages, but that certain aspects such as intimacy and loyalty become more salient as children age (e.g., Berndt, 2004; Furman & Buhrmester, 1992; Sullivan, 1953), even though others would argue that pre-schoolers' friendships can be intimate (see Aboud & Mendelson, 1996). Overall, this would suggest that friendship quality increases over time, and that it might have greater significance on children's development with age.

Correlates of friendship quality

The benefits of having friends were discussed earlier. Like having friends, the quality of children's friendships is important in many respects. Feelings of self-worth, well-being, and attitudes and beliefs towards others and school reflect the degree of friendship quality (Gifford-Smith & Brownell, 2003). More closeness in friendships is related to less bullying behaviours and to less peer victimization, probably because high friendship quality provides a template for healthy relationships and acts as a buffer against social problems (Bollmer, Milich, Harris, & Maras, 2005; Goldbaum et al., 2003). It is reported in the bullying literature that bullies tend not to victimize peers who have friends, especially friends who seem likely to defend them (Card, Isaacs, & Hodges, 2009; Kochenderfer & Ladd, 1997). Also, high friendship quality attenuates the link between internalizing problems and peer victimization for girls, although it strengthens the link in boys (Schmidt & Bagwell, 2007). Girls may recognize and value, more so than

boys, the support that comes from those who are close to them (Schmidt & Bagwell, 2007). Children who report having friendships high in closeness and support also report higher self-esteem, less loneliness and externalizing behaviour problems, greater peer acceptance, and better school adjustment than do children who report having lower quality friendships (Keefe & Berndt, 1996; Waldrip, Malcolm, & Jensen-Campbell, 2008). Finally, Bowker, Rubin, Rose-Krasnor, and Booth-Laforce (2007) reported that high friendship quality attenuates aggressive coping in aggressive children.

Other researchers have examined the link between children's adjustment and friendship quality across time. For instance, Ladd and colleagues (1996) found that kindergarten children who had high quality friendships increased their school liking more than children who had low quality friendships. Ladd and colleagues (1966) also found that children's support from their classmates increased for those children who reported high versus low quality friendships. These findings imply that forming and maintaining high-quality relationships are beneficial for children's adjustment.

Not all studies have shown that high friendship quality is associated with better adjustment, however. For instance, Agnew (1991) found that adolescents' delinquency increased over time if they had a close attachment to their friends. Similarly, Berndt, Hawkins, and Jiao (1999) found that early adolescents' teacher-rated behavioural problems increased over a school transition if they reported high quality friendships with other disruptive early adolescents. In a different vein, low friendship quality is also associated with increases in problematic behaviour in some studies. In one study, highly delinquent adolescents who reported little closeness in their friendships with other delinquent adolescents increased more in delinquent behaviour than did less delinquent

adolescents (Poulin, Dishion, & Haas, 1999). Overall, the findings reported above illustrate the complexity of the influence of friendship quality. In short, not all studies show that relationship closeness is beneficial to children's adjustment.

Conflict in relationships

Apart from friendship closeness or intimacy, the other friendship quality dimension is the level of conflict. Conflict is an unavoidable phenomenon in any close relationship (Hartup & Shantz, 1992) and it can help to negotiate boundaries and the level of interdependence within a relationship (Laursen & Pursell, 2009). Conflict between friends includes overt or verbal behaviours pertaining to disagreements about psychological and physical harm, social or friendship rules, or facts and opinions (Hartup & Shantz, 1992). Conflict must occur between two people and there must be opposition (contrary position or action) from at least one, but typically two, people who are participating in a friendship (Laursen & Pursell, 2009).

Shantz (1987) wrote that there are distinct sequential features of a conflict between friends. These are initiation and opposition (what event starts the conflict), tactics and strategies (what behaviours perpetuate or mitigate the conflict), resolution (efforts at repairing the relationship), and outcome (consequences of the conflict). Within these features, a conflict may be qualified by frequency and affective tone (or intensity). Related to the sequence of a conflict, some researchers have looked at the patterns of conflict between friends. Laursen and colleagues (1996) described three patterns including coercion (negative affect, aggression or power assertion, and unequal/unfavourable outcomes), mitigation (neutral or positive affect, negotiation, and equal or constructive outcomes) and disengagement (no resolution or outcome). The topic

of conflict determines the intensity of interaction when disagreements between friends regarding friendship norms are met with anger (Laursen & Pursell, 2009). Importantly, high-intensity disputes generally occur less frequently than do low-intensity disputes (Laursen & Pursell, 2009).

In general, through conflict, children learn about their partners, about themselves, and about what is important to their friendships (Corsaro, 1992; Hartup & Shantz, 1992). Furthermore, authors such as Selman (1981) suggest that conflict is linked to the development of social skills and interpersonal knowledge and that it helps to develop cognitive skills as well. Although children often avoid engaging in conflict with their friends (Laursen & Pursell, 2009), the inherent benefit of conflict is the enhanced perspective taking and the realization of mutuality underlying the interaction between two people (Selman, 1981).

How children handle conflict with their friends may be more important than the occurrence of conflict. Greater relationship satisfaction and durability are probable when children resolve their conflicts amicably (Hartup& Shantz, 1992) because this is what children expect from their friends (Berndt, 1982). Accordingly, best friends have been found to handle conflict more effectively than children who are not friends when negotiating how to share a toy (Fonzi et al., 1997). Not resolving conflict is related to overall unhappiness within a friendship (Katz, Kramer, & Gottman, 1992).

Although conflict is normative in children's friendships, some studies show that it can be detrimental to the ongoing relationship. For example, children cite conflict as a main reason for friendship dissolution in hypothetical vignettes depicting friendship problems (Azmitia, Lippman, & Ittel, 1999). Friendships may dissolve because children

engage in revenge goals when their friendships are high in conflict (Rose & Asher, 1999). Raffaelli (1997) found that children who reported having no conflict in their friendships were happier in their relationships and rated their friends as more important than did children who reported having conflict in their friendships. Children are also likely to view friendship conflict as a transitory event (Joshi & Ferris, 2002).

Some studies have shown that friendship conflict exacerbates adjustment. Ladd et al. (1996) reported that children who experienced more conflict in their friendships were less likely to be involved in school activities, less likely to enjoy school, and more likely to feel lonely than were children who experienced less conflict in their friendships. Berndt and Keefe (1995) found that conflict in seventh graders' friendships was related to increases in disruptive behaviour over the school year. Adams and Laursen (2007) reported results similar to those of Berndt and Keefe (1995). Kupersmidt, Burchinal, and Patterson (1995) reported that children's chances of being categorized as delinquent increased when friendship conflict increased and that girls' risk of aggression increased over time as friendship conflict increased. In contrast, Poulin et al. (1996) reported that friendship conflict was not related to any increase in delinquent behaviour. In sum, although friendship conflict may be healthy in some ways, it can also disrupt children's development. Specifically, delinquency and aggression are related to friendship conflict, but not all studies report this.

Aggressive children's friendships

The negative association between conflict and adjustment suggests that aggressive children likely have poor friendships. Indeed, some studies show that aggressive children have friendships with higher conflict and less closeness than do nonaggressive children

(Bagwell & Coie, 2004; Leary & Katz, 2005; Rose, Swenson & Carlson, 2004). This is probably why aggressive children tend to not have long lasting friendships (e.g., Ellis & Zarbatany, 2007). However, there are studies with no reports of friendship quality differences between aggressive and nonaggressive children, either concurrently (Deptula & Cohen, 2004) or over time (Fanti et al., 2009). Fanti and colleagues also reported that aggressive and nonaggressive boys' friendship quality increased over time, whereas moderately aggressive boys' friendship quality decreased over time. The friendships of girls high in aggression decreased in quality. Fanti and colleagues' study was limited, however, because children's reciprocal friendships were not measured. In many cases, it was the aggressive child's report that served as the sole basis for inferring that a friendship existed.

Although there are some results indicating that aggressive children have poorer friendships than do less aggressive children, there are many reasons why they might *not* have poorer friendships. For instance, some aggressive children have been found to display leadership skills, a sense of humour (Dodge & Coie, 1987), social power (Cairns et al., 1988; Kupersmidt, DeRoisier, & Patterson, 1995), and the ability to mentalize or think of others (Sutton, Smith & Sweetenham, 1999). Also, children who are aggressive over longer periods of time have more friendship difficulties than those who are not consistently aggressive (Campbell et al., 2010). In sum, there is some evidence of a link between friendship conflict and poor social adjustment and that aggressive children may have poor relationships, but this depends on a number of factors.

Bagwell and Coie (2004) found that aggressive children did not view their relationships as poorly as did their friends and outside observers. Similarly, Brendgen et

al., (2004) found that aggressive children overestimated the quality of their relationships when compared to their friends' views. Therefore, taking into account both partners' views of their relationship is important. Aggressive children engage in behaviours such as hitting, punching, arguing and teasing (Coie & Kupersmidt, 1983), which may result in decreases in closeness and increases in conflict in their friendships over time. In addition, a study by Poulin and Boivin (1999) suggests that the bidirectional effects of aggressive behaviour and friendship quality over time are important considerations during the course of a relationship: Aggressive behaviour may increase friendship conflict and friendship conflict may increase aggressive behaviour. Unfortunately, no girls were included in the Poulin and Boivin study and friendships were only studied across one year. It would be expected that the friendship closeness of chronically aggressive children would decrease over time because of the host of adjustment problems associated with chronic aggression (Campbell et al., 2010).

Unlike the relationship problems of overtly aggressive children, children who are predominantly relationally aggressive tend to report having friendships somewhat higher in quality. Relational aggression involves manipulating the peer group by spreading malicious gossip about, ignoring or excluding others, as well as threatening to end relational bonds (Crick & Grotpeter, 1995). Both boys and girls engage in relationally aggressive acts but, contrary to initial reports (e.g., Crick & Grotpeter, 1995), gender differences in relational aggression in childhood are trivial according to the results of Card and colleagues' (2008) meta-analysis. Relationally aggressive children report higher levels of exclusivity, friendship intimacy, conflict and betrayal in their friendships than

do nonaggressive children (Daniels et al., 2010; Grotpeter & Crick, 1996; Rose, Swenson & Carlson, 2004).

Considering that relationally aggressive children also have a host of adjustment difficulties such as peer rejection, loneliness, and depression (e.g., Card et al., 2008; Crick & Grotpeter, 1995; Tomada & Schneider, 1997), it is interesting that they sometimes report high quality relationships. These findings can be explained by the mechanism by which a child relationally aggresses against another; that is, it is often a consequence of sharing close and intimate details with a friend (e.g., Murray-Close et al., 2007). Furthermore, relationally aggressive children tend to be socially central in their peer groups, they are often nominated as "cool" (Hoff et al., 2009), they are perceived as popular by their peers (Neal, 2010), and they act in prosocial ways (Card et al., 2008). These behaviours should help foster close relationships and would explain why these children report high quality relationships. It is important to note that relationally aggressive children who are perceived as popular by their peers report similar levels of conflict as do nonaggressive children (Rose et al., 2004). Overall, relationally aggressive children tend to have closer and also more conflictual friendships than do less aggressive children, but this depends on a number of factors such as peer rejection and perceived popularity.

High closeness and high conflict

Some research suggests that the combination of high conflict and high closeness may typify the friendships of aggressive children. Hawley and colleagues (2007a) have studied *bistrategic controllers*, youth who use coercive as well as prosocial means to establish social boundaries. They found that these youth report relationships high in

intimacy and fun but also high in conflict. These youth are also high in both overt and relational aggression. Overall, this study provides additional support for the idea that aggressive children report relationships high in closeness as well as in conflict.

The duality of high closeness and conflict is important because it has been shown to contribute to an increase in problematic behaviour. Specifically, Berndt and Keefe (1995) studied seventh and eighth graders' disruptive behaviour and friendship quality over two time periods of the same school year. Self-reported disruptive behaviour increased the most when friendship quality was high in both esteeming behaviours and in conflict. There were no changes in disruptive behaviour if friendships were described as low in esteeming behaviours and high in conflict or vice versa. Therefore, their study indicates that those who describe their relationships as high in both closeness and in conflict are more likely to engage in disruptive behaviour than are those who describe their relationships as only close or conflict-ridden. Berndt and Keefe's (1995) results are limited because aggressive children have been found to overestimate the quality of their friendships and to have social-cognitive deficits (e.g., Brendgen et al, 2004). Also, using self-reported friendship quality to predict self-reported disruption may have magnified their findings because of shared method bias.

The socialization process in friendship

How childhood friends act towards each other is known to influence their behaviour outside of the relationship. This is found in deviancy training (e.g. Dishion, McCord & Poulin, 1999; Snyder et al., 2008), in which adolescents and young children who laugh at committing delinquent or disruptive acts with a friend are likely to increase in problematic behaviour over time. The argument that friends socialize one another is

complicated, however, by the finding that children select similarly aggressive friends. These similarities and their interaction may account for the increase in aggressive behaviour. Therefore, both friendship quality and the similarity between two children are important considerations in the socialization process.

Some studies suggest that the relationship processes in a friendship are more important for explaining disruptive behaviour than are the characteristics of the individual child. For instance, Coie and colleagues (1999) found that observations of African American children's disruptive behaviour were better accounted for by relationship processes, such as behaving aggressively and retaliating with other aggressive children, than by the ratings of children's highly aggressive behaviour. Unfortunately, Coie and colleagues' design did not include measures of friendship quality. Their results suggest nonetheless that relationship processes, which can be ascertained via children's friendship quality ratings, most likely make a unique contribution to the display of aggressive behaviour, irrespective of children's individual characteristics.

In summary, the results of studies on how friendship quality affects behaviour are mixed. Early adolescents appear to increase in disruptive behaviour if their relationships are close (Agnew, 1991), not close (Poulin, Dishion & Hass, 1999), or high in both closeness and conflict (Berndt & Keefe, 1995). Intuitively, the combination of a highly close yet conflict-ridden relationship should have the greatest influence on aggressive behaviour, as children may be more likely to imitate the behaviour of their aggressive friends if they have a close relationship. This argument follows from Bandura's (1986) social learning theory, which posits that individuals will be more influenced by another if

they have a close relationship. By being supportive, children may be more likely to follow their friends' lead toward aggressive behaviour.

Limitations of previous studies

An important limitation of the aforementioned studies of friendship quality and aggressive behaviour is their almost exclusive focus on older children and adolescents. For example, Kupersmidt, Burchinal, & Patterson (1995) studied the link between friendship quality and aggressive behaviour in children but they did not examine the interaction between conflict and closeness and aggressive behaviour. In addition, their outcome variable was aggression during adolescence. Therefore, it is not certain whether highly close and conflictual relationships are problematic in children. Furthermore, none of the research mentioned above has looked at the dynamic interplay (i.e., the way in which variables change together over time; Murray-Close, Ostrov, & Crick, 2007) between friendship quality and aggressive behaviour. Most authors use friendship quality at Time 1, for example, as a predictor of outcome at a later time point. Complex hierarchical linear models allow for an examination of the dynamic link between variables. These methods have been used to examine the change in relational aggression as a function of change in children's friendship intimacy (Murray-Close, et al., 2007). Notably, overt forms of aggression do not appear to have been studied in this way. It is therefore uncertain how changes in aggressive behaviour are related to changes in friendship quality over time.

Although there are some findings showing that relationships can be both close and conflict-laden at the same time and that these relationships can negatively affect behaviour (e.g., Berndt & Keefe, 1995), friendships that are close tend to have low levels

of conflict (Berndt, 2002; Hartup & Stevens, 1997). This might suggest that relationships will not be high in *both* closeness and in conflict, especially children's relationships because the bulk of the existing data on high closeness/conflict are on pre-adolescent children or youth (e.g., Hawley et al., 2007a). It is therefore unclear whether conflict and closeness are likely to co-occur at high levels in children's friendships and what impact this kind of relationship will have on children's adjustment.

Closeness, conflict, and friendship stability

When relationships are described as high in conflict and low in closeness, children may seek out other relationships. This is consistent with interdependence theory (Thibault & Kelley, 1959), which posits that alternative relationships will be sought out when the costs (conflicts) outweigh the rewards (closeness) of the relationship. According to Laursen's (1996) theory, relationships characterized as having greater rewards than costs are associated with greater interdependence in thoughts, emotions and feelings between the members within the relationship. In contrast, an absence of interdependence within a relationship (or greater costs than rewards) is believed to lead to relationship instability. Therefore, children may view relationships characterized by both high conflict and high closeness as too costly and these relationships may not last over time because little interdependence exists. Although Laursen's arguments are based on adolescent friendships, they may also apply to children's relationships because, like adolescents, children can develop intimacy with their friends and be aware of their friends' needs (e.g., Aboud & Mendelson, 1996; Ladd et al., 1996).

There have been short-term longitudinal studies on children's friendship quality and the findings of these studies are generally consistent with interdependence theory.

For example, Berndt, Hawkins and Hoyle (1986) found that children who remained in stable friendships made more positive comments about their friendships at the beginning of the year than did children whose relationships did not last over the year. Kindergarteners were more likely than not to keep the same friends if their relationships were described as high in closeness or low in conflict (Ladd, Kochenderfer, & Coleman, 1996). Early adolescents, who reported having stable friendships, had higher friendship quality at the start of the study than did early adolescents who reported having unstable friendships (Bukowski, Boivin & Hoza, 1994). Friendship quality items such as companionship, help, security, and proximity were higher in the friendships of early adolescents that lasted over the year.

Similarly, Schneider, Fonzi, Tani, and Tomada (1997) found that the initial quality of a friendship served as a "reserve" for children's friendship stability. That is, even though friendship quality gradually decreased in stable friendships over the year, the initial high quality may have served to protect the durability of the relationship. Other results reported by Schneider et al. (1997) showed that the level of conflict at the beginning of the year was unrelated to friendship stability. Conflict resolution behaviour, such as minimizing the problem, is negatively related to the stability of early adolescent girls' friendships, but it is positively related to boys' friendship stability (Bowker, 2004). There are other results indicating that positive relationship quality is not related to children's friendship stability over the school year (Bowker, 2004). Generally, these results imply that closeness rather than conflict is important for friendship duration. A limitation of these studies is that children who reported having relationships high in both closeness and in conflict were not specifically identified; these qualities of children's

friendships were studied as separate predictors. Therefore, it is not clear whether children who describe their friendships as high in both conflict and in closeness have stable friendships.

As mentioned, researchers have generally used interdependence theory to explain why relationships last over time. Unfortunately, the aforementioned studies only include two time points, so, it is uncertain how friendship quality waxes and wanes in friendships of longer duration. Studies that have tracked friendship quality over longer periods of time have been conducted only with older preadolescent children or youth (Way & Greene, 2006; Selfhout, Branje, & Meeus, 2009) or they do not examine stable friendships (e.g., Murray-Close, Ostrov, & Crick, 2007). Furthermore, studies that examine the change in friendship quality as children age are cross-sectional in nature (e.g., Furman & Buhrmester, 1992). Intuitively, a friendship with the same child should continue to grow over time as the intimacy increases, although there appear to be no findings like this in the literature.

Apart from theories suggesting that children gradually derive more intimacy from their friends as they age (e.g., Berndt, 2004; Selman, 1981), there is little theory identifying the changes in children's stable friendships. This is important because the mechanism underlying how children continue to maintain their bonds with close friends is uncertain (see Rubin, Fredstrom, & Bowker, 2008). Levinger and Levinger (1986) extended their theory of adult friendships and argued that children's relationships can "build up" and eventually reach a consolidation phase as the relationship progresses over time. In the build up and consolidation phases, there is a need for mutually shared interests, forms of self-disclosure, and intentional efforts such as helping to sustain the

relationship. There can be an increase or decrease in affection or confiding, and undesirable characteristics of the friend or the relationship may diminish feelings of trust or closeness. Fehr (1996) echoed these ideas and stated that in adults' long lasting friendships there are various challenges such as balancing autonomy and dependence. Openness must be balanced with self-protectiveness, which can lead to the development of trust (Fehr, 1996). Overall, Levinger and Levinger's (1986) theory suggests that a certain amount of effort is required to maintain relationships. Their ideas are consistent with those of Furman (1996), who stated that friendships of longer duration should provide a context for the development of trust and intimacy in children's friendships. Friendships have the propensity to grow over time and it is possible that increasing closeness with a friend will help to maintain the relationship. Considering that disagreements between children and their friends, regarding the quality of their relationships, are associated with friendship stability (e.g., Schneider et al., 1997), children in continuing friendships should also view their relationships more similarly over time.

Relationships high in closeness and in conflict: Adult relationships

Additional research on highly close yet conflict-ridden relationships has been conducted with adults. The concept of the *volatile couple* is one example and is found in Gottman's (1994) influential work on happy and unhappy couples. The volatile couple is a stable, bonded couple that thrives on conflict, in a competitive versus cooperative sense, which is balanced with affection, warmth and laughter. These couples are known to be intensely emotional and passionate and to "have big fights and great times making up afterward" (Gottman, 1994, p. 160). An important feature of the volatile couple is that

they invalidate each other's feelings during conflict situations. Other research on ambivalence in relationships (Fingerman, Hay & Birditt, 2004; Uchino et al., 2004) provides evidence for the idea that close and intimate relationships also have highly problematic features. Ambivalent relationships are referred to as involving "the people who love you the most, bug you most" (Fingerman et al., 2004, p.794), and they occur more often in close familial relationships (e.g. spouses and parent-adolescent) than in non-kin relationships. Ambivalent relationships are related to poor adjustment, such as increased interpersonal stress and depression. They are also believed to be unpredictable relationships (Uchino et al., 2004; Uchino et al., 2001). Ambivalent relationships have also been associated with cardiovascular stress, such as increased blood pressure (Holt-Lundstad et al., 2007). Overall, these research findings strengthen the idea that relationships can be both highly conflictual and close and, under these circumstances, can negatively affect one's adjustment.

Children's sociometric status

The dyadic relationships that children form with one another constitute one aspect of their social world, while children's reputations or peer sociometric status constitutes another (Rubin, Parker, & Bukowski, 1998). Regardless of the difference between friendship and peer status, it is conceivable that some of the behaviours evident in one of these social contexts may also be evident in the other (e.g., Brendgen et al. 2000). A brief definition of sociometric status and the significance of peer status will be provided here. In addition, research will be reviewed regarding controversial children, who are both liked as well as disliked by their peers. Controversial children's friendships are an important yet an understudied area because they are often nominated as bullies and they

appear to have to ability to manipulate others (DeRosier & Thomas, 2003; Repacholi, Slaughter, Pritchard, & Gibbs, 2003).

Sociometric status – Definition and importance

Peer status is measured via sociometric procedures in which children state whom they like most and whom they like least (e.g., Coie, Dodge, & Coppotelli, 1982). These scores can be combined to delineate various sociometric groups. Popular children have many "liked most" and few "liked least" nominations, while rejected children have many "liked least" nominations. Neglected children receive few "liked most" or "liked least" nominations and, finally, controversial children have many "liked most" as well as many "liked least" nominations. Therefore, controversial children have a mixed reputation amongst their peers.

The status that a child acquires amongst his or her peers is important in many respects. Peer rejection has been one of the most widely researched issues because it is related to a host of negative outcomes such as later delinquency (Kupersmidt & Coie, 1990; Miller-Johnson, Coie, Maumary-Gremaud, Lochman, & Terry, 1999), more negative school attitudes and school avoidance (Ladd, 1990), and internalizing behaviour problems (Crick & Ladd, 1993). Although rejected children appear to be the most at-risk group, controversial children also appear to be at risk for conduct disorder (Ollendick et al., 1992). These findings indicate that the social status a child acquires amongst his or her peers relates to how well he or she adjusts socially.

Friendship and peer contexts

Researchers generally maintain that children's friendship and peer worlds are unique contexts (e.g., Rubin, Parker, & Bukowski, 1998). However, some children may

act similarly with their peers and with their friends. For instance, in Brendgen, Little, and Krappmann's (2000) study on friendship quality in children of different peer status categories, the friends of popular children rated their friendships higher in quality than did popular children themselves. Rejected children's friends rated the quality of their friendships lower than did rejected children. Popular children's friends may rate their relationships higher in quality than do popular children because cooperation, friendliness, sociability, and sensitivity are evident when they interact with their friends, hinting at similarity in behaviours in different contexts (i.e., peer and friendship; Rubin et al., 1998). Children who have many friends also tend to be well-liked amongst their peers (Ladd et al., 1997). A study of children's behaviour with their peers in the classroom, as well as behaviour with their friends in a playgroup, found similarities in children's behaviour across these contexts (Poulin, Cillessen, Hubbard, Coie, Dodge, & Schwartz, 1997). Overall, children appear to be able to act consistently in different contexts with their peers and with their friends.

Sociometrically controversial children

The behaviours of controversial children evident at the peer-group level suggest that they will have highly close yet conflict-ridden relationships as well. For instance, findings from Newcomb, Bukowski, and Patee's (1993) meta-analysis showed that controversial children had higher levels of aggression than any other sociometric status group. In addition, controversial children had higher levels of sociability than did average, rejected, and neglected children, with similar levels as popular children. Furthermore, controversial children had high levels of adaptive social traits, such as leadership, similar to those of popular children. Overall, the above findings suggest that

controversial children display both aggressive and socially competent behaviours with their peers.

Studies since Newcomb et al.'s (1993) meta-analysis have revealed that controversial children engage in a variety of negative behaviours with their peers. For instance, controversial children have been found to be more relationally aggressive, are often nominated as bullies, and are more likely to be central members of deviant peer groups than are children in other sociometric groups (DeRosier & Thomas, 2003; Nelson, Robinson, & Hart, 2005). These findings, in combination with the findings showing that teachers rate controversial children as highly manipulative (e.g., Repacholi, Slaughter, Pritchard, & Gibbs, 2003), suggest that they may be poor friendship candidates, hurting their friends in many ways (e.g. seeking out friendships for manipulative reasons, such as a desire to increase their own popularity; Hawley, 2003). Interestingly, they are often chosen as friends (Gest et al., 2001), although they are considered "tough" by their peers (Robertson et al., 2010). Controversial children's aversive behaviour amongst their peers may be evident in their friendships. Therefore, they may have relationships high in conflict. On the other hand, consistent with the earlier review on friendship quality, behaviours such as sociability, conscientiousness, social skill, popularity, and social integration, which are also likely displayed by controversial children (Coie et al., 1982; Hawley, 2003; Gest et al., 2001), are associated with closeness in a relationship. Therefore, considering that controversial children are more aggressive and possibly hostile with their peers than are children in the other sociometric groups and that they are sociable and socially integrated, it is possible that these peer-directed behaviours may

seep into their friendships, reflecting a duality of elevated conflict and intimacy in their relationships, more so than the other sociometric categories.

Friendship quality and peer status/acceptance

Findings from studies of the friendship quality of children of different peer status categories support the idea that controversial children will have relationships high in closeness and high in conflict. The influential work of Parker and Asher (1993) provided insight into the quality of friendships amongst highly-accepted, average and lowly-accepted children. They asked third- through fifth-grade children to report the level of validation/caring, conflict/betrayal, companionship/recreation, help/guidance, intimate exchange, and conflict resolution in their friendships. There was no difference between children's levels of peer acceptance and the reported companionship and recreation in their friendships. However, low-accepted children mentioned having less validation/caring, help/guidance, and intimate disclosure in their friendships than did high-accepted children. Low-accepted children also indicated more friendship conflict and betrayal than did average children, but no difference in conflict and betrayal in comparison with highly-accepted children. Last, they found that low-accepted children were less satisfied in their friendships than were accepted children.

Since the work by Parker and Asher (1993), other researchers have found that more conflict is evident in the best friendships of less accepted children compared to the friendships of more accepted children (Kupersmidt et al., 1995). However, some results show no correlation between children's relationship closeness/companionship and children's peer acceptance, and weak relations between acceptance and friendship conflict (Rose & Asher, 1999; Lansford et al., 2006). Patterson et al. (1990) found that,

with the exception of neglected children reporting less companionship in their best friendships than average, popular, and controversial children, there were no significant differences in the friendship quality ratings amongst the sociometric groups. Similarly, Brendgen, Little and Krappmann (2000) reported that the friendship quality of popular, average, and rejected children was similar. The lack of significant differences in friendship quality amongst the different sociometric groups may be partly due to methodological differences in defining children's peer acceptance. For instance, some studies used continuous measures of peer acceptance (e.g. Parker & Asher, 1993), whereas others used more categorical approaches. A problem with the continuous definition of peer social standing is that the distinctions become blurred; low accepted children can be neglected as well as rejected (Brendgen et al., 2000). Also, the lack of significance may reflect findings showing that rejected children do not agree with their friends about the quality of their relationships (Brendgen et al., 2000) and they may rate their relationships higher than they are experienced by others.

Observational studies of the friendship quality of children of different peer status categories appear to be more consistent with Parker and Asher's (1993) findings that high-accepted children report higher quality relationships than low-accepted children. Rizzo (1988) inferred friendship quality from the types of play in which children engage. He found that even though there was no difference in the amount of time that popular, average, and rejected children spent with friends, the play of rejected children and their friends was more separate than the play of popular and average children and their friends. Phillipsen (1999) found that the interactions of highly accepted dyads were more positive, coordinated, and sensitive than were the interactions of low accepted dyads

when planning a trip. Lansford et al. (2006) reported that the observations of rejected girls' interactions and their friends were of lower quality than were those of average and popular girls and their friends. What these and the findings of Parker and Asher suggest is that a child who exhibits behaviours characteristic of both rejected *and* popular children might have a relationship characterized by both high conflict and closeness.

Frankel (1990) examined the quality of adolescent girls' friendships. Along with sociometric measures, each participant filled out a measure of the level of social support and general stress, discord, hurt feelings, and embarrassment (which was labelled as stress) within their friendships. The results showed that controversial girls had more stress in their friendships than all other groups, except for rejected children. Also, controversial girls perceived as much support in their friendships as did popular children. The trust (support) minus embarrassment (stress) items equalled zero (reflecting a high degree of both aspects) more often in controversial girls' friendships than it did in the friendships of other the groups. This study supports the idea that controversial children's relationships would be more likely to reflect a combination of both high closeness and conflict than the other sociometric status groups. The study was limited because only girls were studied. Furthermore, Frankel did not examine the effects of these relationships on children's adjustment.

In addition to the high closeness and conflict in controversial children's friendships, there is the possibility that controversial children and their friends will not agree about the quality of their relationships. For instance, controversial children disagree with their peers on measures of school adjustment and anxiety/withdrawal (Cillessen & Bellmore, 1999). Also, as mentioned earlier, aggressive and unpopular children tend to

overestimate their social behaviours (e.g., Brendgen, et al., 2004; Zakriski & Coie, 1996). Given that there is a link between children's peer and friendship worlds (e.g., Brendgen et al., 2000), different views about behaviours amongst peers may also translate into the realm of friendship, such that there are disagreements regarding their quality. It is possible the friends of controversial children will act in ways to preserve their relationship by giving more help, since some children are especially drawn to mean children (e.g., Hawley et al., 2007). A controversial child and his/her friend may have in mind different features of their relationship, which may well range from very positive to very negative, when they evaluate the quality of their relationship. Therefore, a discrepancy in the friendship quality ratings between controversial children and their friends is likely. Unfortunately, there does not seem to be any study of controversial children's views of their friendships compared to their friends' views. Similar friendship views are important because they likely foster stable friendship (e.g., Furman, 1996). Also, accurate friendship quality perceptions may also be associated with the ability to use social feedback regarding negative interactions in order to modify behaviour (e.g., Cillessen & Bellmore, 1999).

In sum, studies of friendship quality in children/adolescents of different peer status categories support the hypothesis that controversial children will have highly close yet turbulent relationships with their friends. With the exception of Frankel (1990), no one appears to have examined the hypothesis that controversial children will report such relationships. This is unfortunate because, as mentioned earlier, controversial children may not be ideal friendship partners and may hurt their friends. There is also the

possibility that controversial children will agree less about the quality of their relationship with their friends than will sociometrically average children and their friends.

Rationale and contributions

Friendships are powerful relationships that affect children's social, emotional and cognitive development (Rubin, Parker, & Bukowski, 1998). The current evidence generally suggests that children who describe having relationships high in companionship and closeness do not often report a high degree of conflict as well. Therefore, children who describe relationships high in both closeness and conflict have been understudied; there is a paucity of information on the nature and fluidity of highly close yet conflict-ridden relationships in children. There is the possibility that these relationships will not be stable because of children's dissatisfaction. However, these relationships may last considering the cultural backdrop against which this study takes place as Italians may be comfortable with both high levels of closeness and conflict in their relationships. The current evidence is also not clear about the effect of highly close and simultaneously conflictual relationships on children's aggressive behaviour over time. It is likely that these intense relationships are related to an increase in aggression over time, in light of the limited information available in the literature. In sum, the information gathered in this study will help to elucidate the nature and possible effects of highly close and highly conflictual relationships.

Second, there is insufficient information on the general evolution of the quality of children's relationships over time. There is the possibility that friendship closeness increases over time in stable friendships. This information would test whether the quality of children's friendships "builds up" over time in stable relationships. However, the

increase in closeness may be limited to girls, in contrast to boys, because of the emphasis placed on nurturing close relationships. Also, it is not clear what happens to the friendship quality of chronically aggressive children over time. Children whose aggressive behaviour remains stable over time should theoretically have friendship relations of poor quality that decrease in closeness and increase in conflict over time. Although there is extensive information on the problematic relationships of aggressive children, the change in friendship quality over time in chronically aggressive children is poorly understood.

Third, there is a paucity of information on the friendships of controversial children. Knowing more about their friendships is important because of their manipulative tendencies. The friendships of controversial children may reflect a combination of both high conflict and closeness because the aggressive and socially competent behaviours noted by their peers in large groups might also be related to the quality of their friendships. That is, higher friendship quality is associated with prosocial behaviour and friendship conflict is associated with aggressive behaviour in some studies. Controversial children may also not agree with their friends about the quality of their relationships because the disagreements regarding their behaviours amongst their peers may also be evident in their friendships. In sum, the present study was conducted in order to tease out the nature of friendships that are both highly close and conflictual, the possible impact that these relationships have on the length of friendships and on children's adjustment.

Two Italian cohorts, one younger (mean age at Time 1 = 7.5 years of age) and one older (mean age at Time 1 = 9.9 years of age), with longitudinal data (four time points for

Cohort 1, and two time points for Cohort 2) were used to evaluate these questions. Stronger effects were expected in the older cohort because of the greater importance of friendship quality with age (e.g., Furman & Buhrmester, 1992). Including a younger cohort was important considering that the bulk of studies on friendship quality and aggressive behaviour were conducted with older children (e.g., Berndt & Keefe, 1995; Kupersmidt, et al., 1995). Last, in terms of answering the questions in this thesis, data from Italy were advantageous because ambivalent relationships may be more prominent in this culture than they are in other cultures (e.g., Argyle et al., 1986) and because Italian children engage in more bullying and aggressive behaviour than do children from other cultures (e.g., Genta et al., 1996).

Hypotheses

1. Considering the intensity of the relationship, children who report relationships high in both closeness and in conflict will be less satisfied with their friendships than will children who report relationships high in closeness and low in conflict or children who report relationships average in closeness and in conflict (Cohorts 1 and 2). This is based on Holt-Lundstad and colleagues' (2007) findings showing that ambivalent or intense relationships are related to cardiovascular and other stress.
2. Because they derive less satisfaction in their relationships, children who describe their friendships as both high in closeness and in conflict will have less stable friendships than will children who describe their friendships as average in closeness and in conflict (Cohort 1).

3. As the relationship deepens, the closeness scores of children who continue their friendships and who report on the same friendship at each time point will increase over time (3a; Cohort 1). The conflict scores of children who report on the same friendship will decrease over time (3b; Cohort 1).
4. Children and their friends' views about the quality of their relationship (closeness and conflict) will be more similar over time as they remain friends (Cohort 1).
5. Considering the characteristics of aggressive children that have been documented in previous studies, such as fighting and perceiving threat in social situations (Coie & Dodge, 1998), physically aggressive children will experience less closeness and more conflict in their relationships than will less aggressive children (Cohorts 1 and 2). Relationally aggressive children will demonstrate more closeness and conflict in their friendships than will less relationally aggressive children (Cohort 2) in light of the findings showing that relationally aggressive children have more turbulent friendships than others (e.g., Grotpeter & Crick, 1996).
6. Closeness will decrease more and conflict will increase more over time in aggressive children's friendships than it will in nonaggressive children's friendships, especially if these children remain highly aggressive (Cohorts 1 and 2).
7. Controlling for aggression at Time 1, the aggression of children who report friendships high in closeness and in conflict will increase more than will the aggression of children who report friendships as either high in closeness or high in conflict, or as in average in closeness and conflict. A stronger effect is expected in Cohort 2 because of the greater importance placed on friendship quality with age.

8. Sociometrically controversial children will be more likely to have relationships higher in both closeness and in conflict than will average, rejected and popular children because of the desirable as well as undesirable characteristics that they likely bring to their relationships (Cohorts 1 and 2).
9. Sociometrically controversial children and their friends will be more likely to have divergent ratings of friendship quality than will sociometrically average children and their friends (Cohort 1).

Method (Cohort 1)

Procedure

In this longitudinal study, children participated four times over two scholastic years (Grade 2 and Grade 3). Data were collected in the third and ninth month of each school year. Children nominated their friends and provided ratings about the quality of their relationships during individual sessions. Peers were the informants regarding children's sociometric status and aggressive behaviour. All measures were repeated at each measurement point.

Participants

The data for the present study were from an established data set collected from 11 schools over a two year period in the city of Florence, Italy and surrounding regions. The province of Florence ranks 25th (out of 109 provinces in Italy) in the number of young adults who complete university, 4th in average income, 9th in the number of non-Italian citizens (Camera di Commercio Firenze, 2008). Of the 11 schools, six were located in central Florence and five were in suburban areas. The socioeconomic status of the areas were primarily medium, however, some schools were of mixed status (i.e., low-high or

medium-high). Although all SES levels are represented, there was an intentional oversampling of more disadvantaged areas. At Time 1, a total of 524 children participated (272 boys and 252 girls, mean age = 7.5). Over the course of the study, the attrition rate was not problematic, with a total drop out rate of 8% (n = 41). Thus, the total sample included 483 children (mean age = 9.1) at the last data collection point. The consent rate was 97%.

Measures

Friendship Nominations. Children named up to six classmates whom they considered friends from a class roster at each data collection point. Following the procedures of Parker and Asher (1993), children were reminded to denote children who are very close friends as first on their list, close friends as second, and so on. We considered children to be reciprocal friends when both children nominated each other on their list of friends and at least one child rated the other as a best friend (Parker & Asher, 1993). Across all four time points, an average of 18% of children had no reciprocal friends, 51% had between one and two reciprocal friends, and 31% had three or more reciprocal friends. Children going to schools located in either central or suburban areas of Florence had a similar number of reciprocal friends across all time points (all ps >.10)[1]. Stability of friendship was calculated in a two stage process by first examining the reciprocal nomination measures at each data point, and determining the variability of each child's friendship nominations at the next time point. For instance, the friend at Time 1 was a) a best or second best friend, b) a third/fourth best friend, c) not listed, or d) not liked at Time 2. I created two dichotomous variables depicting best friendship

[1] The percentage of no friends was 17% (on average) in both central and suburban areas across the study; the percentage of one or two friends was 49% in central areas and 50% in suburban areas; the percentage of three or more friends was 35% in central areas and 34% in suburban areas.

(remains best friends or not, where 0=yes, and 1=no) and friendship (remains best friends or third/fourth best friends or not) stability. Next, because friendship is a dyadic phenomenon, a friendship was considered as terminated if at least one child in the dyad indicated that it was unstable. Please note that the stability scores did not include friendships in which one child moved to another classroom or to another school because children chose children from their classroom as friends. Thus, the stability scores reflected the possible friendships available in each child's classroom. Also, in all analyses, the stability score of one child in each dyad was removed in order to respect the assumption of statistical independence.

Friendship Features Interview. Children rated the quality of the relationship with their closest friend using the Friendship Features Interview for Young Children (FFIYC, Ladd, Kochenderfer, & Coleman, 1996) at each measurement point; this is the only published friendship quality measure for young children. Also, few studies in the literature using this measure were located. Ladd and colleagues' original questionnaire consisted of friendship quality items that tapped into dimensions such as validation, aid, exclusivity, conflict, disclosure of negative affect, affective climate and satisfaction (for a total of 24 items, 2-4 items per dimension). The measure was translated into Italian by a native Italian speaker, and then back-translated to ensure accuracy. Children answered questions about their friends such as "says you're a friend," "stops others being mean to you," "talk about sad things," "makes fun of you," and "plays mostly with you" on a scale of 0 to 2 , where 0 means "*no*", 1 means "*sometimes*", and 2 means "*yes*". A total of 266 children completed the friendship features interview at Time 1, 288 at Time 2, 218 at Time 3, and 225 at Time 4. Only children who had a best friend available (i.e., ranked 1st

or 2nd) at the time of data collection completed the interview. As a result, the total number of those who completed the measure differs from the total number of participants in the study.

Data Reduction. As discussed earlier, friendship researchers (e.g., Berndt, 2002) propose that there are two friendship quality dimensions (i.e., positive and negative). When friendships are high in validation, for example, they are often high in other positive features as well. Similarly, Berndt noted that the conflictual aspects of a friendship should be linked on a single dimension. In their original study, Ladd and colleagues (1996) did not report a two factor structure using the Friendship Features Interview. They used the measure to create the six different factors that were mentioned above. Based on Berndt's ideas and other research that supports this notion (e.g., Furman & Buhrmester, 1992), I tested a two factor closeness and conflict model using exploratory factor analysis (principal axis factoring).

The results of the exploratory factor analysis indicated that there were seven factors with eigenvalues above 1.0 at Time 1, not all of which were interpretable. Given the lack of clear structure, I tested a two factor (closeness and conflict) model using confirmatory factor analysis using AMOS 7.0. Prior to performing the confirmatory factor analyses, the amount of missing data was determined. There were very few missing data across all time points (e.g., 0.5% at Time 1). I used a single imputation with the expectation maximization (EM) method to ensure that there was no missing data. Having a complete data set was important because missing data can be problematic when using the modification indices in AMOS (Garson, 2010).

Once the data set was complete, I analyzed the 21 items that represented closeness and conflict from the Friendship Features Interview at Time 1 with a CFA (the three remaining items of the FFYIC pertained to friendship satisfaction). I specified a two factor model that allowed the latent variables to be correlated and I used the maximum likelihood method (e.g., Vaillancourt, Brendgen, Boivin, & Tremblay, 2003) to estimate the data. I determined if the model fit by evaluating the chi-square value between the proposed model and the actual data (a nonsignificant difference is hoped for; Garson, 2010), and by examining the comparative fix index (CFI) and the root-mean-square error of approximation (RMSEA) of each model (Garson, 2010). In the full model, the discrepancy between the proposed model and the actual data led to a significant chi-square, χ^2= 371.11 (188), $p < .01$; fit indices: CFI = .80, RMSEA = .06. These results indicated that there was not a very good fit.

Due to the lack of fit, I tested a number of additional models systematically. For example, in these subsequent models and based on Harrington (2009), items were dropped if they did not have a standardized regression score above .32 (i.e., items that loaded poorly and accounted for little variance). Additionally, I used the modification indices so that the error variances of items on the same construct were allowed to co-vary one at a time (Garson, 2010). In the final model, five items were removed (four for closeness and one for conflict) and five covariance terms were added to the model. For the final model, the discrepancy between the proposed model and the actual data led to a nonsignificant chi-square, χ^2= 118.23 (98), $p = .08$; fit indices: CFI = .97, RMSEA = .03. The results indicated that there was a good fit to the data. In sum, the final model

consisted of 13 items for closeness and 3 items for conflict. Please see Table 1 for the item loadings.

I replicated the Time 1 model at Times 2, 3 and 4 using the items of each respective time point. Modification indices were used in all of the models. At Time 2, the discrepancy between the proposed model and the actual data led to a significant chi-square, χ^2= 155.34 (94), p = .00. However, the fit indices at Time 2 indicated a reasonable fit, CFI = .93, RMSEA = .05. There was a Heywood case because of a positive communality estimate/negative error variance on "bosses you around" at Time 2. The item could not be deleted because it is suggested that latent variables should have at least three indicators (Garson, 2010). A small positive variance was placed on the offending item (e.g., Garson, 2010) and similar fit statistics were achieved. At Time 3, the discrepancy between the proposed model and the actual data led to a nonsignificant chi-square, χ^2= 119.11 (99), p = .08; fit indices: CFI = .97, RMSEA = .03. Last, at Time 4, the discrepancy between the proposed model and the actual data led to a nonsignificant chi-square, χ^2= 111.34 (90), p = .06; fit indices: CFI = .97, RMSEA = .03. Please refer to Table 1 for the item loadings at Times 2, 3, and 4. The factor loadings were roughly similar across each time point, but some items did not load above 0.32 cut off. These items were retained in order to remain consistent with the model that was found at Time 1.

Overall, the results of the confirmatory factor analyses revealed that the models fit the data well at Times 1, 3 and 4. The model at Time 2 did not fit the data as anticipated. Despite the problems at Time 2, I decided to go ahead with the final model because it represented a theoretically relevant closeness construct. Additional models consisting of

fewer items and that fit the data were not chosen because of the lack of fit with a theoretically sound closeness construct.

The items of each construct of the final model were added together (separately for each time point) in order to form independent variables for closeness and conflict. The internal consistency of the closeness construct at each time point was good (average α was .79), whereas the internal consistency of the conflict construct was poor (average α was .56). It should be noted that Ladd et al. (1996) reported problems with the factor structure of the original instrument yielding poor factor loadings and alphas in the .60 range. Also, Furman (1996) indicated that the structure and reliability of friendship quality instruments often varies from sample to sample. The means and standard deviations of the closeness and conflict variables at each time point for boys and girls (and the full sample) are presented in Table 2. Across each data point, the closeness and conflict variables were negatively and positively skewed, respectively. Because hierarchical linear modelling analyses (to be discussed later) should use normally distributed variables, Table 2 also displays the transformed (square root) means for closeness and conflict. The variables were not skewed after transformation.

Aggressive behaviour. Children's aggressive behaviour was determined by using peer nominations at each measurement point. A procedure adapted from Boulton and Smith (1994) was administered in which children indicated up to three peers that fit the description as a bully (e.g., "someone who often picks on other children, or hits them, or teases them or does any other nasty things to them for no reason"; Boulton and Smith, p.318). Children also responded to questions about their peers who fit a number of behavioural descriptions (which classmates fight, engage in verbal aggression, and

disrupt classroom activities). An aggression score was tabulated by summing and averaging children's nominations from their peers for the bully and aggression items (e.g., "who starts fights"), and this was divided by class size so that classes of different sizes could be compared (standardized scores were not used considering that they have a mean of 0 and the change in mean scores over time was of interest; Murray-Close, Ostrov, & Crick, 2007). Standardized scores were used to calculate the number of children who were considered aggressive or nonaggressive (children 1 standard deviation above the mean were considered aggressive; those below were considered nonaggressive; see Crick and Grotpeter, 1996). There were 68 (21 girls) aggressive children at Time 1, 73 (15 girls) at Time 2, 70 (12 girls) at Time 3, and 66 (10 girls) at Time 4. The means for aggression are presented in Table 3. Like the relationship quality variables, the aggression scores were positively skewed at each data point. The aggression variable underwent a square root transformation, which resulted in normality (Table 3 also presents the transformed means). Table 4 presents the correlations amongst the continuous variables for Cohort 1.

Sociometric Status. To measure children's status amongst their peers, Coie, Dodge and Coppotelli's (1982) sociometric classification system was used at each data point. In classrooms, children nominated three peers that they Liked Most and Liked Least. This system provides two orthogonal dimensions, social preference (total number of liking minus disliking nominations), and social impact (total number of liking plus disliking nominations) that are combined to form popular, controversial, rejected, neglected, and average subgroups. Popular children are those who have a social preference score greater than 1.0, standardized Liked Most scores greater than 0, and

Liked Least scores less than 0. Controversial children's social impact scores are greater than 1.0, and standardized Liked Most and Liked Least scores are each greater than 0. Rejected children have social preference scores less than -1.0, and standardized Liked Most scores less than 0 and Liked Least scores greater than 0. Neglected children have social impact scores less than -1.0, and Liked Most scores of 0 (no Liked Least score is used). Finally, average children have social preference scores greater than -0.5, and less than 0.5. Similar to Coie et al., (1982), the Liked Most/Least scores were standardized within classrooms and then across the entire sample to allow sample wide comparisons. Across each time point, an average of 6% of children were classified as controversial, 15% as popular, 15% as rejected, 2% as neglected and 31% as average. These percentages are somewhat different from the percentages found in Coie et al.'s (1982) original study, but they are similar to other research (e.g., Brendgen, et al., 2000; Gest et al., 2001) in the area.

Method (Cohort 2)

Procedure

In this cohort, children participated three times over two scholastic years (Grade 5 and Grade 6). In the 5th grade (elementary school), data were collected in the third month (Time 1) of the school year and in the third and ninth months in the 6th grade after the transition to middle school (Times 2 and 3). Children nominated their friends and provided ratings about the quality of their relationships during individual sessions. The friendship quality questionnaire was administered only once in each grade (Times 1 and 3). Unlike Cohort 1, longitudinal follow-up of the same friendships was not possible because of the transition to middle school after Grade 5, with many of the original friends

no longer in the same schools. Therefore, there are no friendship stability data in this cohort. As in Cohort 1, peers were the informants regarding participants' social behaviour.

Participants

The data from this sample were also from an established data set[2] collected from 11 schools in the city of Florence, Italy and neighbouring areas. Of the schools 11, five were located in central Florence, and three were either in suburban or rural areas. Similar to Cohort 1, the socioeconomic status of the areas were primarily medium, however, some schools were of mixed status (i.e., low-high or medium-high). Again, there was an intentional oversampling of more disadvantaged areas. At Time 1 (Fall, Grade 5), a total of 471 children participated (225 boys and 209 girls, mean age = 9.9 years). At Time 3 (Spring, Grade 6), there were 434 participants (mean age = 11.6 years). The attrition was due to participants' moving away or to attending other schools not in the study. The consent rate was 98%.

Measures

Friendship Nominations. As in Cohort 1, children circled the names of friends from a class roster (Bukowski, Hoza, & Boivin, 1994). They were asked to identify their best friend from the list. Children were allowed to circle as many names as they pleased so that less pressure would be placed on children with few friends (Furman, 1996). Again, we considered best friendships when children reciprocally nominated one another

[2] Tomada et al. (2005) used the Cohort 1 data to examine the link between friendship and school adjustment over time. Of note, they did not use the friendship quality data. Greenman et al., (2009) also used the Cohort 1 data, but they examined the link between peer rejection and academic performance over time. Last, Schneider et al. (2008) used the Cohort 2 data and found that social support from friends compensated for the lack of support from parents in terms of children's school bonding and motivation. They did not look at the link between friendship quality and aggressive behaviour.

on their friendship lists and one child rated the other as a best friend. At Times 1 and 3, an average of 15% of children had no reciprocal friends, 56% had between one and two reciprocal friends, and 29% had three or more reciprocal friends. As mentioned, there is no friendship stability data in this sample because of the transition into middle school that resulted in the unavailability of roughly two-thirds of previous friendships.

Friendship Quality. Furman and Buhrmester's (1985) Network of Relationships Inventory (NRI) was used the assess children's relationship quality with their best friends. The NRI has been used numerous times in past research to assess children's and adolescent's relationship quality with their mother, father, sibling, friend, grandparent, teacher and romantic partner and it has good psychometric properties. For instance, studies report $\alpha s > .90$ for the subscales (discussed shortly) and stable factor scores over time (Furman, 1996; Furman & Buhrmester, 1985; Sherman, Lansford, & Volling, 2006). The NRI scale is based on Weiss' (1974) scale of relationship provisions and it consists of 30 Likert-type (5-point, 1 = "*little or none*", 5 = "*the MOST*") questions that form 12 narrow-band subscales: i) reliable alliance; ii) enhancement of worth; iii) instrumental help; iv) companionship; v) affection; vi) intimacy; vii) nurturance; viii) relative power; ix) conflict; x) punishment; xi) antagonism; and xii) satisfaction.

Past research has shown that the positive items of the NRI comprise one factor (typically named Social Support), whereas the remaining items reflecting conflict and discord comprise another factor (typically named Negative Interactions; e.g., Furman & Buhrmester, 1992; Schneider et al., 2008; Way & Greene, 2006). Furman (1996) reported that the Social Support and Negative Interactions scales are moderately correlated with each other. Other researchers have reported that each scale is related to early adolescents'

depression, social anxiety, other adjustment problems, school performance and motivation, and knowledge of friends' internalizing problems (Laursen & Mooney, 2008; McDonald et al., 2010; Schneider et al., 2008; Swenson & Rose, 2009). Furman and Buhrmester (2009) reported that the affection, intimacy and help scales are likely correlated with observed positive communication between friends. The Social Support factor was represented by the reliable alliance, affection, enhancement of worth, instrumental aid, companionship, intimacy and nurturance scales (for a total of 21 items, e.g., "How much does this person treat you like you are admired and respected?" and "How sure are you that this relationship will last no matter what?"). The Negative Interactions factor was represented by the conflict, punishment and antagonism scales (for a total of nine items, e.g., "How much do you and this person get upset or mad at each other?" and "How much do you and this person get on each other's nerves?"). The relative power scale comprises a third factor (Furman, 1996) and was not used in the study. The satisfaction scale is made up from three items (e.g., "How satisfied are you when you are with NAME?"). A total of 397 children (196 girls) completed the NRI at Time 1, whereas 407 children (196 girls) completed the NRI at Time 3. The average alpha coefficient for the Social Support factor was .89, whereas the alpha for Negative Interactions was .82. The means and standard deviations for the Social Support and Negative Interactions scores at Times 1 and 3 are presented in Table 5.

Aggressive Behaviour. To assess children's aggressive behaviour, Crick and Grotpeter's (1995) Peer Nomination Instrument (PNI) was used. The PNI is 17-item measure of children's peer acceptance (one item), overt aggression (three items, e.g., "hits, pushes others"), relational aggression (four items, e.g., "tells friends they will stop

liking them unless friends do what they say"), pro-social behaviour (five items, e.g., "does nice things for others") and isolation (three items, e.g., "seems lonely at school"). The PNI has been found to have good psychometric properties in a variety of samples (Crick & Grotpeter, 1995; Ellis & Zarbatany, 2007; Murray-Close, Ostrov, & Crick, 2007). Children were given a class roster and were asked to nominate three classmates for each item. The nominations for each item were summed in order to create a total score for overt and relational aggression. These scores were then standardized within each classroom and by the whole sample to enable sample wide comparisons. Based on Crick and Grotpeter's (1995) procedure, children were classified as aggressive if they scored 1.0 standard deviation or higher above the mean on the overt and relational aggression variables (children were classified as high in either overt or relational aggression or high in both). Those whose scores were below a standard deviation above the mean were considered nonaggressive. At Time 1, there were 338 nonaggressive children, 29 overtly aggressive children, 34 relationally aggressive children and 33 overtly and relationally aggressive children. Table 6 presents the correlations amongst the continuous variables for Cohort 2.

Sociometric Status. As in the younger cohort, Coie, Dodge and Coppotelli's (1982) sociometric classification system was used at each data point to assess children's social status. In classrooms, children nominated three peers that they Liked Most and Liked Least. The Liked Most and Liked Least scores were standardized within each classroom and across the whole sample in order to create social preference and social impact scores. Based on the social preference and social impact scores, children were then classified into one of the five sociometric categories (popular, rejected,

controversial, neglected, and average). A standard deviation of 0.75 for social impact and social preference was used instead of the traditional 1.0 value because of the low number of children classified as controversial at Time 1 (the *n* went 16 to 27 with the alteration). The change also led to more children being classified as popular and as rejected (a 6% and 3% increase, respectively).

Results - Overview

The results section is organized as follows. First, I used ANOVA to test whether children in both cohorts who reported relationships high in closeness and in conflict were less satisfied with their friendships than were children who reported other levels of closeness and conflict (Hypothesis 1). Second, I used logistic regression to test the hypothesis that children who report highly close yet simultaneously conflictual relationships would demonstrate less friendship stability than would children who report other levels of closeness and conflict (Hypothesis 2; Cohort 1). Third, I used growth curve analyses to track the trajectory of friendship quality of children who participated in continuing friendships (Hypothesis 3; Cohort 1). Fourth, I again used growth curve modelling to understand whether children in continuing friendships gradually viewed the quality of their relationships more similarly over time (Hypothesis 4; Cohort 1). Fifth, I used growth curve models (Cohort 1) as well as repeated measures MANOVA (Cohort 2) to understand the relationship quality of aggressive and nonaggressive children, both concurrently (Hypothesis 5) and over time (Hypothesis 6). Sixth, I again used growth curve models (Cohort 1) and regressions (Cohort 2) to understand the link between friendship quality and later aggressive behaviour (Hypothesis 7). Last, I used MANOVA to understand the relationship quality of controversial children (Hypothesis 8) and to see

if controversial children and their friends had more discrepant views about the quality of their relationship than other children (Hypothesis 9).

Preliminary Analyses

In Cohort 1, according to *t*-tests, girls reported more closeness than did boys at Times 2 and 3 ($p < .05$), and at Time 4, but not according to conventional alpha ($p = .06$)[3]. There was no significant difference between boys' and girls' conflict scores at any time point. Overall, these results indicate that gender differences should be considered in subsequent analyses.

In Cohort 2, according to *t*-tests, girls reported more Social Support than did boys at Times 1 and 3 ($p < .01$). There was no significant difference between boys' and girls' Negative Interactions scores at any time point. Again, as in Cohort 1, these results indicate that gender differences should be considered in subsequent analyses.

Hypothesis 1 – Friendship satisfaction, high closeness and high conflict

For both cohorts and according to children's friendship quality scores at each time point (un-transformed variables), I classified children's relationships either as high closeness/high conflict (> 0.5 standard deviation, *SD*, above the mean), high closeness/low conflict (> 0.5 *SD* on closeness, and < than 0.5 *SD* on conflict), high conflict/low closeness (opposite to previous group), low closeness/low conflict, or as average in closeness and in conflict, for a total of five groups (note for simplicity, the terms high closeness and conflict are used rather than social support and negative interactions for Cohort 2). A standard deviation of 0.5 was chosen because an adequate sample of children who represented extreme friendship quality groups was needed to

[3] According to Rom's (1990) procedure controlling family wise error, the difference between boys' and girls' closeness at Time 3 would not be significant ($p = .019$) because the required significance is $p = .016$.

examine the question, and because there were very few children classified as high in closeness and in conflict at 1.0 or 0.75 of a standard deviation above the mean (e.g., for Cohort 1, there were only five children equal to or above the 0.75 cut off at Time 1). Separate means for boys and girls were used to calculate the groups.

Across each time point, an average of 58% of children in both cohorts were classified into one of the friendship quality groups (range 57-60% across each time point). Of those who were classified, 7-9% of children, on average, reported a relationship high in both closeness and in conflict. In contrast, children who reported a relationship high in closeness and low in conflict occurred most frequently for both cohorts (average of 23% for Cohort 1 and 16% for Cohort 2). Interestingly, in Cohort 1, 13% of children, on average, reported a relationship high in conflict and low in closeness.

In Cohort 1, the results of the chi-square analyses showed that there were similar numbers of boys and girls in each group at each time point: Time 1, χ^2 (4, n =213) = 9.11, p = .06; Time 2, χ^2 (4, n = 171) = 1.01, p = .91; Time 3, χ^2 (4, n = 123) = 3.80, p = .43; Time 4, χ^2 (4, n = 136) = 4.94, p = .29. For Cohort 2, the results of the chi square analyses revealed that there was a like number of boys and girls in each of the groups at Time 1, χ^2 (4, n = 159) = 9.11, p = .06. There were gender differences at Time 3, χ^2 (4, n = 243) = 13.32, p = .01. Girls reported more relationships high in closeness and low in conflict (z = 2.0), and low in closeness and high in conflict (z = 1.9) than did boys. On the other hand, boys reported more relationships low in closeness and low in conflict than did girls (z = 2.8).

Cohort 1. The items for the satisfaction scale of the FFIYC were summed in order to examine if the friendship quality groups reported different friendship

satisfaction, concurrently (separate models for boys and girls). The satisfaction scale of the NRI was used for Cohort 2. Table 7 presents the friendship satisfaction scores for each group and cohort. In Cohort 1, boys' and girls' reported similar levels of friendship satisfaction (*p*s ranged from .23-.97 across all time points). There were gender differences in friendship satisfaction for Cohort 2. Girls reported more friendship satisfaction than did boys at both time points, *ps* = <.01.

In all of the analyses (ANOVAs) for Cohort 1, there were main effects for friendship group, except for boys at Time 1 (all *p*s < .01). All of the differences were due to the lower friendship satisfaction reported by children in the low close/high conflict group than children in the other friendship quality groups. Specifically, for girls, at Times 1 and 2, the high conflict/high close and the high close/low conflict groups reported higher satisfaction than did those in the low close/high conflict group. At Time 3, the high close/low conflict group was more satisfied than was the low close/high conflict group. There were no other significant differences. No follow-up tests were conducted at Time 4 because there were too few girls in the high close/high conflict group. For boys at Time 2, the high close/low conflict and the average close/conflict were more satisfied than the low close/high conflict (and there was a difference between the high close/high conflict group and the low close/high conflict group but it was not significant according to conventional alpha). At Time 3, the high close/high conflict and the high close/low conflict groups were more satisfied than was the low close/high conflict group. At Time 4, all friendship groups were more satisfied than the low close/high conflict group.

Cohort 2. For this cohort, the results of the ANOVA indicated that level of friendship satisfaction differed amongst the five friendship quality groups at Time 1 for

girls, F (4, 100) = 21.74, $p < .001$, and for boys, F (4, 111) = 16.45, $p < .001$. Results of the post-hoc Tukey tests showed that boys and girls in the high closeness/high conflict group were more satisfied than were boys and girls in the low closeness/high conflict and the low closeness/low conflict groups at Time 1. Boys and girls in the high closeness/low conflict group were more satisfied than all other groups except those in the high closeness/high conflict group. At Time 3, friendship satisfaction also differed amongst the friendship quality groups for girls, F (4, 113) = 26.57, $p < .001$, and for boys, F (4, 120) = 26.76, $p < .001$. Similar to Time 1, girls in the high closeness/conflict group rated more friendship satisfaction than did girls in the low in closeness/high conflict, low closeness/low conflict and in the average closeness/conflict groups. Girls high in closeness and low in conflict were equally satisfied as were girls in the high closeness/high conflict group. For boys, those high in closeness and high in conflict were more satisfied than were those low in closeness and high in conflict and those low in closeness and in conflict. There was no significant difference in satisfaction between children in the high closeness/high conflict group and children in the high closeness/low conflict group.

Overall, the results reveal that children who report relationships high in closeness and in conflict are essentially as satisfied with their friendships as are children who report friendships high in closeness. Therefore, Hypothesis 1 was not supported by the data. Children appear to derive a sense of satisfaction in turbulent friendships. Also, friendships high in conflict are not as satisfying as are other kinds of friendships unless there is a certain level of friendship closeness or social support.

Hypothesis 2 – Closeness, conflict and friendship stability (Cohort 1)

The second question pertained to the relationship between friendship quality and friendship stability. Specifically, I hypothesized that children who report highly close and highly conflictual relationships would have less friendship stability than would children who report other levels of friendship closeness and conflict.

The average rate of best-friendship stability across each time point in the study was 64% (range 61-67%). The average rate for friendship stability was 80% (range 76-83%). Boys and girls essentially had a similar best-friendship and friendship stability rates at each time point except at Time 4. Girls were slightly, but not significantly, less likely to stay friends than were boys, χ^2 (1, n = 215) = 3.33, p = .07, at Time 4. Table 8 presents the percentages of best-friendship and friendship stability for the whole sample and for each of the friendship quality groups. From the table, the high closeness/high conflict group appears to have similar stability rates as the other groups. Also, Table 9 presents the stability of children's friendships over longer periods of time (i.e., from Time 1 through Time 3, and from Time 1 through Time 4. From Table 9, children's friendship stability tends to decrease relatively linearly when friendships of longer duration are examined. Boys and girls had a similar rate of friendship stability at Times 1-3 and Times 1-4 (all chi-square analyses were nonsignificant).

I used logistic regression to examine whether the friendship quality groups had different rates of friendship stability. I did not use the best friendship stability scores in any of the logistic regressions because the friendship quality data were based on the best friendship available at the time of data collection, not necessarily on reciprocal best friends. Again, the scores of one child in each dyad were randomly deleted in order to

respect the independence of data assumption (Tabachnick & Fidell, 2001). Logistic regression was appropriate because of the dichotomous outcome (still friends or not) and because it can handle categorical variables. In these models, gender was entered on the first step as a control, the categorical friendship quality group variable (five levels) was entered on the second step, and the interaction between gender and friendship quality group was entered on the third step. Friendship quality predicted successive friendship stability for a total of three models (i.e., Time 1 friendship quality predicted Time 1 to 2 friendship stability; Time 2 quality predicted Time 2 to 3 stability and Time 3 quality predicted Time 3 to 4 stability). Please note that there were not enough children to examine the friendship quality group by gender interaction at each time point. As a result, all presented models focus on Steps 1 and 2.

For friendship stability at Time 1-2, the full model (2nd step) was not significantly different from an intercept-only model, χ^2 (5, n = 65) = 5.59, p = .35. Also, the step for gender was not significant at Time 1-2. At Time 2-3, the full model was not significantly different from an intercept-only model, χ^2 (5, n = 69) = 4.75, p = .45. Again, the step for gender was not significant at Time 2-3. At Time 3-4, the full model was not significantly different from an intercept-only model, χ^2 (5, n = 63) = 10.16, p = .07. Children in the low close/high conflict group tended to report more unstable friendships than did the other groups, as this effect was not significant according to conventional alpha. Also, girls tended to have less friendship stability than boys. These analyses using the friendship quality group as a predictor of stability showed that friendship quality is not related to children's short-term friendship stability.

In the next set of analyses, the friendship quality group variable was used to predict friendship stability over longer periods of time. Friendship quality at Time 1 predicted friendship stability from Times 1 thorough 3 and Times 1 through 4. For friendship stability T1-T3, the model was not significant, χ^2 (5, n = 38) = 7.17, p = .21. The step for gender was not significant as well. For friendship stability T1-T4, the model was not significant, χ^2 (5, n = 31) = 7.89, p = .16, nor was the step for gender. In sum, these analyses indicated that children who describe their friendships as high in closeness and in conflict do not report less friendship stability than do children who report other degrees of closeness and conflict in their friendship.

I performed additional logistic regression analyses to address whether children who report relationships high in both closeness and in conflict would have lower friendship stability than would children who report other combinations of closeness and conflict. In the preceding analyses, there were violations of the number of expected frequencies assumption (i.e., more than 20% of the cells were less than 5; Tabachnick & Fidell, 2001) at all time points. Furthermore, categorizing the friendship quality variables resulted in a loss of scores. Recall that only 60% of children who completed the friendship quality measure were classified. Therefore, logistic regression analyses using continuous closeness and conflict variables were carried out. One disadvantage of using the continuous variables is that it is not totally possible to isolate the high closeness/high conflict group.

In these models, gender was entered on the first step, closeness and conflict (main effects) on the second step, all two-way interactions on the third step and the three-way interaction on the fourth step (the full model). Again, only friendship stability was

examined and the scores of one child in each dyad were used. A total of three models were constructed (Time 1 friendship quality was regressed onto Time 1-2 friendship stability; Time 2 quality onto Time 2-3 stability; Time 3 quality on Time 3-4 stability). Data from children whose friendship stability score was missing were deleted from the analyses; scores could not be imputed because of the precision needed for the data. There were no outliers and the linearity of the logit assumption was met at all time points.

For friendship stability at Time 1-2, the full model was not significantly different from an intercept-only model, χ^2 (7, n = 129) = 10.82, p = .15. Closeness (Step 2) predicted friendship stability but it was not significant according to conventional alpha (p = .09). Also, the overall model was not significant at Step 2. For friendship stability at Time 2-3, the full model was not significantly different from an intercept-only model, χ^2 (7, n = 123) = 9.08, p = .25. None of the other steps in the model at Time 2-3 were significant. Last, at Time 3-4, the full model was significantly different from an intercept-only model for friendship stability χ^2 (7, n = 111) = 17.53, p = .01. However, the fourth step consisting of the three-way interaction at Time 3-4 was not significant (p = .40). The full model was significant because of two-way interactions added on the third step. The reduced model (two-way interactions) was significant, χ^2 (7, n = 111) = 16.82, p = .01, and the step was not significant according to conventional alpha, χ^2 (3, n = 111) = 6.97, p = .07. The reduced model (two-way interactions) accounted for a small amount of the variance in friendship stability at Time 3-4 (14%, Cox & Snell r^2; and 20%, Nagelkerke r^2). The interaction between closeness and conflict was significant (p = .04), and the main effect for conflict approached conventional levels of statistical significance (p = .06).

Please see Table 10 for a display of the results for each of the full models at each time point, and Table 11 for a display of the reduced model at Time 3-4.

Additional models analyzing the link between friendship quality at Time 1 and friendship stability of longer duration (i.e., Time 1 through 3 and Time 1 through 4) were constructed. These models were exactly the same as the earlier models in which the three-way interaction between closeness, conflict and gender was examined. At Time 1 through 3, the model was not significant, χ^2 (7, n = 75) = 6.16, p = .52, nor was it significant at Time 1 through 4, χ^2 (7, n = 67) = 2.05, p = .98. Also, none of the steps were significant in any of the models. In sum, friendship quality was not related to friendship stability at Time 1-2 or Time 2-3, but there was a relationship at Time 3-4. Also, there was no relationship between friendship quality at Time 1 and friendship stability of longer duration.

The interaction between closeness and conflict at Time 3 and friendship stability at Time 3-4 was explored using the procedures of Wright (1995). The predicted probability of friendship instability (0 = stable and 1= not stable) was calculated by using the coefficients (*B*) derived from the predictors that were part of the model at Step 3 (see Table 11 for the coefficients). All of the predictors in the model (i.e., gender, closeness, conflict, genderXcloseness, genderXconflict, closenessXconflict, and the intercept) were included in the equation. The equation involves summing the intercept and each predictor multiplied by its coefficient, which derives an exponent term (exp). This exponent term is raised to the power of base e (e^{exp}) and then a constant of 1 is added ($1 + e^{exp}$). The term for e^{exp} is then divided by the term with the constant (e^{exp} /1+ e^{exp}) to form a probability value. This probability value reveals the likelihood that children will discontinue their

friendship (higher the score, the more likely to discontinue). Probabilities were calculated for each possible combination of closeness and conflict using the mean, and one standard deviation above and below the mean, for a total of nine combinations (e.g., probability of friendship instability for high closeness and high conflict, etc). After calculating the rate of friendship stability for each combination according to Wright's (1995) procedure, it is remembered that the rate for friendship stability for all available scores at Time 3-4 was 74%, or 26% of children were not likely to stay friends. Girls (66%) were slightly less likely than were boys (82%) to continue their friendships, χ^2 (1, n = 117) = 3.68, p = .06. Please note that the rate for friendship stability is lower than reported earlier because not all children agreed whether or not they were still friends, and friendships were considered as unstable if one child reported that the relationship was unstable. From the predicted probabilities, the rate of friendship instability for the high closeness/high conflict group was 3% for boys and 10% for girls. Thus, boys and girls were more likely to remain friends if their relationship was characterized as high in closeness and high in conflict. In fact, the high closeness/high conflict group was the least likely group to discontinue their friendships according to the predicted probabilities, the opposite of what was expected.

Calculating the probabilities of unstable friendship for the other friendship groups showed that for boys (25%) and for girls (41%), those high in conflict and low in closeness were the least likely to continue their friendships. However, these rates are similar to the general rate of friendship instability for boys and girls. Please see Table 12 for a display of the probabilities for each combination of closeness and conflict.

In sum, the results generally did not support Hypothesis 2. Children who reported having a high degree of closeness and conflict in their friendships were not more likely

than were other children who reported other combinations of closeness and conflict to discontinue their friendships. In fact, some of the results show that children who report high closeness and high conflict are somewhat more likely to stay friends than are others.

Hypothesis 3 – Friendship quality in continuing friendships (Cohort 1)

Prior to studying Hypothesis 3, preliminary growth curve analyses were conducted on both children who reported on the same friendship and children who reported on different friends throughout the course of the study. That is, children who had a friendship quality score at any time point were included. These results showed that children's closeness increased over time and, to some extent, children's conflict decreased over time. The explanation of hierarchical linear modelling terminology and the specifics of the growth curve models as well as the results can be found in Appendix A. Considering the change in friendship quality over time, more specific models were used to understand whether children in continuing friendships would increase in closeness and decrease in conflict over time (Hypothesis 3). These analyses clarified whether the growth in friendship closeness over time (as demonstrated in the results presented in Appendix A) was due to different rates of growth in children who report on the *same* friendship (continuing) over the course of the study compared to children who reported on *different* friendships (replacement). If the rate of friendship growth is different in these two groups and if the continuing friendship group increased at a more elevated rate than did the replacement friendship group, then it could be argued that children's friendship quality builds over time for those who keep the same friend and that friendship stability is important. However, if both of these groups increased in closeness at a similar rate over time, it would suggest that friendship quality for children with the

same friend does not build over time and that children can have equally close relationships with different individuals.

Separate growth curve analyses were used to understand the trajectory of closeness and conflict for boys and girls who reported on the same friendship (continuing) throughout the course of the study compared to boys and girls who reported on different (replacement) friendships throughout the study (please note that the replacement friendship group included children who reported on three different friends because there were only five children who reported on a different friend across all four time points). There were 12 boys and 20 girls in the continuing-friend group and 16 boys and 18 girls in the replacement-friend group. Figures 4 through 7 display the means for closeness and conflict (transformed variables), respectively, for each group and gender across time. Overall, the rate of change appears to be different for the two groups as boys and girls who reported on the same friendship appear to have slightly higher closeness scores than do those in the replacement-friendship group. For conflict, the pattern is very similar between girls' continuing- and replacement-friendship groups; conflict generally decreases. For boys' continuing- and replacement-friendship groups, the conflict scores are roughly similar across time for the continuing-friendship group, and they show a highly variable pattern across time for the replacement friendship group.

In these models, a continuing/replacement friend group variable and its interaction with the time variables was modelled, which tested whether each friendship group changed at a different rate across time. For girls, the model for closeness (transformed variable) converged and it was a better fit to the data than an intercept-only model, χ^2 (5) = 12.20, p <.05. The G matrix was not positive definite in this model. According to West

et al. (2007) valid inferences about fixed-effects can be made if the V matrix is not problematic even though the G matrix is problematic. There were no error messages indicating that the V matrix was problematic. West et al. (2007) also suggest that random effects are not valid if the G matrix is not positive definite. However, the hypothesis pertained to the fixed effects. The linear and quadratic terms were significant and the quadratic by continuing/replacement friend interaction term approached conventional levels of statistical significance (see Table 13). The continuing/replacement friend variable was not significant, which means that the two groups had similar closeness scores. The nonsignificant trend between time (quadratic) and the continuing/replacement friend variables revealed that the two groups changed in closeness at a different rate across time. Solving the equation for closeness using all of the variables in the equation (e.g., intercept, time, time_quadratic, continuing/replacement friend, time* continuing/replacement friend, and time_quadratic* continuing/replacement friend) indicated that both the continuing- and replacement-friendship groups increased in closeness over time but that the replacement-group tended to decrease at the final time point (see Figure 1 for the actual and predicted values) (Note: similar results were achieved when the untransformed closeness variable was modelled).

For boys, a model including interactions between time and the continuing/replacement friendship group converged but it was not a better fit than an intercept-only model, χ^2 (5) = 1.6, $p > .05$. The only significant variable in the model was the quadratic term for time ($p < .05$) (please see Table 13). The results indicate that there is no significant difference between the continuing and replacement friendship groups for boys and that both boys' groups increased in closeness over time (see Figure 2).

In sum, the results reveal that closeness increases over time in children's stable friendships. Thus Hypothesis 3 was supported by the closeness data for girls. The results also indicate that girls who report on the same friend do not rate their friendships in the same way as do girls who report on different friendships. Friendship stability as a function of relationship closeness appears to be important for girls' continuing friendships but not for boys' continuing friendships. These results also show that the closeness scores of girls' in stable friendships builds up over time. For girls, friendships with the same friend gradually increased in closeness over time whereas friendships with replacement friends increased in closeness as well but at a slightly different rate.

I constructed a continuing/replacement friend model for conflict (separate models for boys and girls). The models included an intercept, linear, quadratic terms as well as terms for the continuing/replacement friend groups and the interactions between the continuing/replacement friend term and time (fixed effects). For both boys and girls, the models were significantly different from an intercept-only model, χ^2 (10) = 20.84, p <.05, for girls, and, χ^2 (7) = 146.26, p <.01, for boys. Although the models were significant for boys and girls, none of the terms (except for the intercept) were significant. Therefore, Hypothesis 3 was not supported for conflict. Conflict in children's stable friendships did not decrease over time. The scatter in the data for boys' conflict (see Figure 3) is probably related to the lack of significance. Considering that the data for girls' conflict depicted a more consistent pattern (i.e., conflict generally decreased, see Figure 4), a model with just the continuing-friendship group was analyzed. This model was not significantly different from an intercept-only model, χ^2 (2) = 2.63, p = .27. Again, these results show that conflict does not decrease in children's stable friendships.

Hypothesis 4 – Friendship quality agreement in continuing friendships (Cohort 1)

In this section, I conducted growth curve analyses to examine whether children in continuing friendships gradually viewed their relationship quality more similarly over time. It was expected that children in continuing-friendships would have similar/interdependent friendship ratings over time. Preliminary correlations revealed that children in stable friendships did not view the quality of their relationships similarly. Pearson correlations between partner A and partner B in each dyad (n = 16) were not strong (range was -.02 to -.29 across each time point for closeness, and .06 to .39 for conflict; all correlations were above the .05 level).

Friendship quality difference scores were calculated at the dyad level (e.g., self rated closeness minus friend rated closeness). Then, growth curve analyses were used to model the difference scores (the scores of only one child in each dyad was used in the analyses in order to prevent redundancy). Similar to earlier growth curve models, an intercept, and linear and quadratic terms (for time) were modelled. A positive estimate for time would suggest that children in continuing friendships do not view their relationships similarly over time, and that they increasingly disagree or differ in their perceptions of the relationship (a negative estimate for time would suggest the reverse). Thus, a negative estimate would support Hypothesis 4.

When compared to an intercept-only model, the model for closeness was not significant, χ^2 (4) = 0.46, p = .98 (for the linear model; a linear/quadratic model did not converge). The linear model for conflict did not converge, and the linear/quadratic model for conflict was not significantly different from an intercept-only model, χ^2 (8) = 0.89, p = .99. Post-hoc analyses of the difference scores for one child in each dyad (see Figure 5)

suggested that there was too much variability in the closeness difference scores across time. As can be seen in the figure, there was no consistent pattern to the data. In sum, these results indicate that children in continuing-friendships do not view their relationships more similarly over time. Therefore, Hypothesis 5 was not supported.

Hypotheses 5 and 6 – Friendship quality of aggressive children

I hypothesized that aggressive children would have less closeness and more conflict in their friendships than would less aggressive children (Hypothesis 5). I also hypothesized that closeness in the friendships of aggressive children would decrease more and that conflict would increase more over time than it would in the friendships of less aggressive children (Hypothesis 6).

Cohort 1. I used standardized scores for aggression (across classrooms) to calculate the number of children who were considered aggressive or nonaggressive. Children who were 1.0 standard deviation above the mean at *each* time point were considered aggressive; those below at each time point were considered nonaggressive (Crick & Grotpeter, 1996). Using these cut-offs, there were 19 children (1 girl) considered as aggressive across each time point in the study. There were 215 (108 girls) children considered as nonaggressive (please note that not all classified children had friendship quality data). Growth curve analyses were used to model the change in friendship quality over time in aggressive and nonaggressive children. Each model included an intercept, as well as terms for time (linear or linear and quadratic), aggression status (aggressive or not), and the interaction between time and aggression status (separate models were conducted for boys and girls). A significant estimate for aggression status would suggest that there are friendship quality differences between the

two groups (Hypothesis 5), and a significant interaction estimate would suggest that the change in friendship quality over time is different between the two groups (Hypothesis 6).

For boys, the reported model was significantly different from an intercept-only model, $\chi^2 = 30.04$ (4), $p < .001$. The linear and quadratic terms for time as well as aggression status by time variable were significant (see Table 14). As in other models, the G matrix was not positive definite. Considering that the V-matrix was not problematic, the fixed effects were interpreted (West et al., 2007). The results indicated that aggressive boys rated their friendships as closer than did nonaggressive boys, the opposite of what was expected. However, the significant interaction term revealed that aggressive and nonaggressive boys' closeness changed at different rates. Solving the equation for closeness with simple algebra showed that nonaggressive boys' friendships increased in closeness over time, whereas closeness in aggressive boys' friendships decreased over time. Please see Figure 6 for the actual and predicted values for closeness for aggressive and nonaggressive boys. In sum, the results do not support Hypothesis 5: That aggressive children would report lower closeness than would nonaggressive children. However, the results do support Hypothesis 6: Aggressive children's closeness decreased over time. Note that the similar results were achieved when the untransformed closeness variable was modelled.

For conflict, the simplest model including an interaction between time and aggression status was not significantly different from an intercept-only model, $\chi^2 = 4.72$ (4) $p = .32$. Furthermore, no terms (except for the intercept) were significant in the model. This means that aggressive and nonaggressive children reported similar levels of

conflict in their friendships and that they did not change in conflict at different rates over time. Therefore, Hypotheses 5 and 6 for boys' conflict were not supported. That is, aggressive and nonaggressive boys reported similar levels of conflict and aggressive boys did not report increasing levels of conflict over time.

Analyses could not be completed on the friendship quality of chronically aggressive girls because there were too few girls classified as aggressive at each time point. As result, aggression status at Time 1 (greater than 1.0 standard deviation) was used to operationalize girls' aggression status. In these models, the terms for time as well as the interaction with aggression status at Time 1 was analyzed. All of the models converged but aggression status at Time 1 as well as its interaction with time was not significant in any of the models (all *p*s > .05). This means that aggressive and nonaggressive girls reported similar levels of closeness and that aggressive girls' closeness did not decrease over time. Therefore, Hypotheses 5 and 6 for girls' closeness were not supported.

For girls' conflict, the simplest model using aggression at Time 1 and its interaction with time was not significantly different from an intercept-only model, $\chi^2 = 2.47$ (10), p = .99. Also, none of the terms were significant in the model. This means that aggressive and nonaggressive girls reported similar conflict scores in their friendships and that their conflict changes similarly over time. Thus, Hypotheses 5 and 6, predicting that aggressive girls would report more conflict than would nonaggressive girls and that aggressive girls would increase in conflict over time, were not supported.

Cohort 2. In this Cohort, I conducted repeated measures MANOVA to examine the closeness and conflict scores of aggressive and less-aggressive children at Times 1

and 3. Specifically, I conducted these analyses in order to understand whether aggressive children reported less Social Support and more Negative Interactions than did less aggressive children (Hypothesis 5), and whether aggressive children's social support decreased, and their negative interactions increased more than it did for less aggressive children (Hypothesis 6). Again, the aggressive groups (e.g., high overt/high relational, high overt/low relational, low overt/high relational, or low overt/low relational) were determined using 0.5 standard deviation above/below the mean because there were few children who were above 1.0 standard deviation. Also, there were few children in each aggression group at both time points so I used aggression status at Time 1 throughout. In each model, aggression group served as the independent variable and Social Support and Negative Interactions at Times 1 and 3 served as the dependent variables (separate models were conducted for boys and girls). Table 15 displays the Social Support and Negative Interactions means at Times 1 and 3 for each group. The results showed that there was a main effect for Social Support for girls, Wilks' Λ (1, 175) = 682.27, $p < .01$, and for boys, Wilks' Λ (1, 187) = 2962.54, $p < .01$. Essentially, these results indicated that Social Support decreased from Time 1 to Time 3 for girls and for boys, regardless of children's aggressive status. There was no between group effect for aggression for girls and for boys (*ps* = .55 and .77, for girls and for boys, respectively). This means that there was no significant difference in Social Support and Negative Interactions amongst the aggression groups for girls and boys. Also, there were no Social Support*aggressive group, or Negative Interactions*aggressive group interactions across time (all *ps* greater than 0.10) for boys and girls. This means that there was no distinct change in Social Support and Negative Interactions across time for aggressive and nonaggressive children.

(Note: Considering that there were few overtly and relationally and overtly aggressive girls, comparisons were made between relationally aggressive and less aggressive girls. There were no significant differences in the Social Support and Negative Interactions scores between these groups).

Overall, the results reveal that nonaggressive and aggressive children report similar levels of Social Support and Negative Interactions and that aggressive children do not decrease in Social Support and increase in Negative Interactions over time. Therefore, Hypotheses 5 and 6 were not supported by the data in Cohort 2[4].

Hypothesis 7 – Friendship quality a as predictor of change in aggression

In this next section of the study, the relationship between children's aggressive behaviour and friendship quality was examined. The question posed in Hypothesis 7 was whether children who reported highly close and also conflictual relationships would increase more in aggression than would children who provided different friendship quality ratings.

Cohort 1. Prior to studying this question directly, growth curve analyses were employed to understand whether the results depicted in Figure 7 (children's aggression appeared to increase over time) would be supported by the analyses. Again, the normalized aggression variables were used in the analyses, and standardized scores were not used because they have a mean of 0, and the interest was mean change in aggression over time (Murray-Close et al., 2007).

[4] Fanti et al (2009) reported that positive friendship quality increased for nonaggressive and aggressive preadolescent boys, but that it decreased for moderately aggressive boys. In both cohorts, there were no significant quadratic effects for boys and girls for both overtly and relationally aggressive children in Cohort 2. Therefore, the data in this study do not replicate the results of Fanti and colleagues.

The preliminary growth curve models included an intercept term as well as a linear and/or quadratic term(s) for time. The models were similar to the unconditional models for closeness discussed in Appendix A, except that aggression (normalized variable) was modelled. The model including linear and quadratic terms was the best fitting model than a linear-only model, χ^2 (3) = 241.90, $p < .001$. The linear estimate was 0.16 ($p < .001$) and the quadratic estimate was -0.04 ($p < .001$). Similar results were achieved when modelling the untransformed variable for aggression. Solving for each value (linear and quadratic) across time resulted in values similar to those presented in Figure 7. Children's aggression increased over the first three time points and then levelled off at Time 4. The residual was significant, which means that additional variables could be modelled to explain the remaining variance. The covariance for the intercept and slope terms (both linear and quadratic) were also significant (all $ps < .01$), which means that some children started high in aggression and others started low in aggression, that children had different rates of change in their aggression scores, and that those who started high decreased in aggression over time whereas those who started low increased over time. In sum, these preliminary analyses support additional testing of the change in aggression over time.

Given the growth in aggression, I used subsequent growth curve models to test whether the change in closeness and conflict predicted the change in aggression (Hypothesis 7). As mentioned earlier, the advantage of growth curve modelling is that it can test for the change in a response variable (e.g., aggression) as a function of change in predictor variables (e.g., closeness and conflict). This has been referred to in the literature as dynamic change between variables (Murray-Close et al., 2007), which cannot be

adequately tested when using traditional regression analyses. In the model for aggression, an intercept term as well as terms for closeness and conflict and the interaction between closeness and conflict (transformed) were entered as fixed effects (note that each term unique of the others are tested in the model). The closeness and conflict variables as well as the intercept were also entered as random effects because of the change over time associated with those variables. Similar to Murray-Close et al., (2007) the structure of the variance covariance matrix for the random effects was unstructured, and it was simple for the repeated effect for time. A significant positive interaction between closeness and conflict would suggest that children high in both relationship closeness and conflict increase more in aggression over time than do other levels of friendship quality, thus supporting Hypothesis 7.

The results for the aggression model converged. However, the estimated G matrix was not positive definite. To circumvent this problem, a number of different variance covariance structures (e.g., Singer, 1998) were tested for the repeated statement. Similar results were achieved in all of the models (i.e., convergence was achieved, the G matrix was not positive, and the closeness variable was related to aggression). Removing random terms (e.g., West et al., 2007) could not be done because this would prevent the question from being adequately tested. There were no error messages stating that the V-matrix was not positive definite. Also, the hypothesis pertained only to the fixed effects. Despite the error message, the aggression model was a good fit to the data compared to an intercept-only model, $\chi^2 = 266.09$ (7) $p < .001$. The only significant term in the model was closeness and the estimate was positive. Given the greater importance placed on closeness in girls' friendships, the models were re-analyzed separately by gender. The

aggression model for boys was a good fit to the data, $\chi^2 = 353.20$ (6) $p < .001$, but there were no significant effects for closeness or conflict. The model was also a good fit for girls, $\chi^2 = 502.40$ (6) $p < .001$, and the closeness variable was significantly positive. The results of this analysis are presented in Table 16. The results reveal that for every unit increase in girls' closeness (transformed), aggression (transformed) increased by 0.07 units at each time point (note, when using the untransformed closeness and conflict variables, very similar results were achieved. For every unit increase in closeness, aggression increased by .03 units).

In sum, Hypothesis 7 was not supported in Cohort 1 – children who reported highly close and conflictual relationships did not increase more in aggression than did children who reported other combinations of closeness and conflict. However, there is some, although not strong, support for the contention that girls' closeness increased as their aggression increased.

Cohort 2. The link between friendship Social Support, Negative Interactions and aggression was also analyzed in Cohort 2. Unlike Cohort 1, however, growth curve analyses could not be employed because there were only two time points (e.g., Singer, 1998). I used regressions to examine the link between friendship quality and subsequent aggression (Time 1 friendship quality predicted Time 2 and 3 aggression). Both children's overt and relational aggression was examined. Prior to these analyses, I used MANOVA to examine whether there were mean differences in the aggression scores (overt and relational) amongst the five friendship quality groups. Table 17 presents the overt and relational aggression scores for each group. The association between concurrent friendship quality group and aggression was examined, and separate models were

conducted for boys and girls. At Time 1, there was no main effect for friendship quality group for girls, Wilks' Λ (8, 190) = 1.33, p = .23, and there was no main effect for friendship group for boys according to conventional levels of alpha, Wilks' Λ (8, 212) = 1.80, p = .08. Differences between the groups were related to relational aggression (p = .04), and not to overt aggression (p= .55). Follow up Tukey (HSD) tests indicated that boys who rated their relationships as average in closeness and in conflict (these terms are used to remain consistent with Cohort 1) were rated by their peers as more relationally aggressive than were boys who rated their relationship as high in closeness and low in conflict ($p < .05$). There were no other significant differences. At Time 3, there was no main effect for group for girls, Wilks' Λ (8, 224) = 1.33, p = .23, or for boys, Wilks' Λ (8, 238) = 0.59, p = .79.

In sum, these results reveal that there are some differences in the relational aggression scores, but not overt aggression scores, amongst the friendship quality groups. While boys who reported high closeness and high conflict in their friendships generally appeared to be more overtly aggressive at Times 1 and 3, and more relationally aggressive at Time 3 than the other groups (except the average friendship quality group; see Table 17), the difference was not significant.

The preliminary analyses showed that children's peer-rated aggression (concurrent) was somewhat related to friendship quality (concurrent). In order to examine the link between friendship quality and subsequent aggression, a series of hierarchical regressions were performed using the continuous friendship quality scores. These regressions were done in order to understand whether children who reported high Social Support and high Negative Interactions at Time 1 increased more in peer-rated aggression

over time (Times 2 and 3) than did children who reported other combinations of friendship quality (Hypothesis 7). In each model, aggression at Time 1 and gender were entered on the step 1 (as controls), friendship quality main effects were entered on Step 2, all two- way interactions were entered on Step 3, and the three-way interaction between Social Support, Negative Interactions and gender was entered on Step 4. Peer-rated aggression at Time 2 and Time 3 was the dependent variables (separate models were conducted for overt and relational aggression at Times 2 and 3).

The results of the hierarchical regressions indicated that the three-way interaction at Time 1 was significantly related to overt aggression at Time 2 at the .05 level. More specifically, after taking into account for the effect of the two-way interactions, the three-way interaction accounted for an additional 1% of variance in overt aggression at Time 2. Please see Table 18 for the change in R^2 and F-values for each step (considering the link between relational and overt aggression, additional models controlling for relational aggression at Time 1 yielded similar results). The three-way interaction at Time 1 was related to overt aggression at Time 3 but not according to conventional alpha (see Table 18). (Note: There was no link between friendship quality at Time 1 and overt aggression at Time 3 when both Time 1 and Time 2 overt aggression were controlled). For relational aggression, the friendship quality variables did not predict a significant amount of variance at Time 2 or Time 3 (see Table 19) (also, very similar results were achieved when overt aggression was controlled).

In order to understand the three-way interaction between social support, negative interactions and gender at Time 1 in the prediction of aggression at Time 2, equations using the unstandardized coefficients of each variable in the model at the final step were

calculated (the aggression variable at Time 1 was not included because it was not of interest and because it would have been simply added as a constant to the equations). The equations derived an aggression score at Time 2 from the Time 1 predictors in the model (gender, Social Support, Negative Interactions, two-way interactions, and the three-way interaction). Values for aggression at Time 2 were derived for each combination of Social Support and Negative Interactions for boys and girls (e.g., high Social Support/high Negative Interactions, for a total of nine combinations). The results showed that children who reported more Negative Interactions in their friendships at Time 1 were less aggressive at Time 2 than were children who reported less Negative Interactions at Time 1. Girls who reported low Social Support and low Negative Interactions at Time 1 increased the most in overt aggression at Time 2. Contrary to what was expected, boys who reported high Social Support and high Negative Interactions at Time 1 increased the least in aggression at Time 2 amongst all friendship quality groups. Also, girls who reported high Social Support and high Negative Interactions at Time 1 were generally less aggressive than were other friendship quality combinations at Time 2 (see Figure 8 for a depiction of the results).

The analyses revealed that children who reported that their friendships were in high Social Support and high in Negative Interactions did not increase more in overt or relational aggression over time than did children who reported other combinations of Social Support and Negative Interactions. In fact, those who did report relationships high in Social Support and in Negative Interactions were somewhat less overtly aggressive than were other combinations of Social Support and Negative Interactions. Also, there

was no link between earlier friendship quality and later relational aggression. Thus, Hypothesis 7 was not supported by the data.

Hypothesis 8 – The friendship quality of sociometrically controversial children

This hypothesis pertained to the relationship between friendship quality and children's sociometric status. I hypothesized that controversial children, who are liked as well as disliked by many of their peers, would report greater levels of closeness and conflict in their friendships than would popular, rejected, and average children (neglected children were not included because there were no or very few neglected children throughout the study). Table 20 presents the closeness and conflict means (untransformed) amongst each of the sociometric groups for Cohort 1 (these were used in the analyses). Because of the gender differences in relationship quality reported in earlier analyses, separate analyses were conducted for boys and girls. The link between concurrent social status (controversial, popular, rejected, average) and friendship quality (closeness and conflict) was examined using MANOVA (social status served as the independent variable and friendship quality as the dependent variables).

Cohort 1. In this cohort, the main effect for social status was not significant for girls, Wilks' Λ (6, 176) = 1.17, p = .32, and for boys, Wilks' Λ (6, 190) = 1.30, p = .24 at Time 1. At Time 2, the main effect for social status was not significant for girls, Wilks' Λ (6, 178) = 0.58, p = .75, and for boys, Wilks' Λ (6, 212) = 0.65, p = .69. At Time 3, the main effect for social status was not significant for girls, Wilks' Λ (6, 136) = 1.45, p = .20, and for boys, Wilks' Λ (6, 136) = 0.71, p = .64. At Time 4, the main effect for social status was not significant for girls, Wilks' Λ (6, 150) = 0.43, p = .86, and for boys, Wilks' Λ (6, 140) = 0.84, p = .54. Although the means presented in Table 20 indicate slight

differences in friendship quality amongst the sociometric groups, there were no significant differences. In sum, Hypothesis 8 was not supported by the data. There were no statistical differences between the friendship quality ratings of controversial and other sociometric status children.

Cohort 2. As done in Cohort 1, I tested whether controversial children reported more Social Support and more Negative Interactions in their friendships than did other sociometric status children (neglected children were not included because there were only three who had friendship quality data). Concurrent social status and friendship quality was examined, and separate models were conducted for boys and girls. Table 21 presents the friendship quality means for each of the sociometric groups used in the analyses.

At Time 1, there was no main effect for group for girls according to conventional alpha, Wilks' Λ (6, 294) = 1.92, p = .08. Between subjects effects indicated that there was no difference amongst the groups in Social Support according to conventional alpha (p = .09). There was no significant difference in Negative Interactions (p = .16). Findings from follow-up Tukey (HSD) tests indicated that popular girls tended to report reported more Social Support than did average girls, but this difference was not significant (p = .09). For boys at Time 1, there was no main effect for group according to conventional alpha, Wilks' Λ (6, 326) = 2.06, p = .06. Between subjects effects indicated that there was no significant difference in Social Support according to conventional levels of alpha, (p = .07), and no significant difference in Negative Interactions (p = .16). Results of follow-up Tukey (HSD) tests revealed that there was no significant difference in Social Support for any of the groups, however.

At Time 3, there was no main effect for group for girls, Wilks' Λ (6, 310) = 0.28, p = .94, or for boys, Wilks' Λ (6, 360) = 1.51, p = .18. In sum, the results reveal that controversial boys and girls do not report more relationship Social Support and Negative Interactions than do popular, rejected and average children. Therefore, Hypothesis 8 was not supported. Controversial boys and girls did not report high levels of Social Support and Negative Interactions.

Hypothesis 9 – Friendship quality agreement by controversial children (Cohort 1)

I hypothesized that controversial children and their friends would have more discrepant friendship quality ratings (i.e., disagree more) than would popular, rejected, and average children. These analyses only pertained to Cohort 1 because friendship dyad identity scores were not available in Cohort 2. In order to control for redundancy in the data, the score of one child in each friendship dyad was deleted. I deleted the scores of children who were not sociometrically classified in order to retain children who were. Also, if dyads were of mixed sociometric status, controversial, popular, and rejected children were retained as much as possible.

I used MANOVA to analyze the closeness and conflict absolute difference scores (sociometric status was the independent variable, and concurrent closeness and conflict were the dependant variables). Separate models for boys and girls were analyzed. Table 22 presents the means for the absolute difference scores for closeness and for conflict amongst each of the sociometric groups that were used in the analyses.

At Time 1, there was no main effect for group for girls, Wilks' Λ (6, 106) = 1.34, p = .23. The result for the closeness variable only approached conventional levels of alpha, p = .10. There was also no main effect for boys at Time 1, Wilks' Λ (6, 104) =

0.71, p = .64. At Time 2, the main effect for group was not significant according to traditional significance levels, Wilks' Λ (6, 110) = 1.91, p = .08. The difference was due to the absolute difference score for conflict (p = .01). Follow up Tukey (HSD) tests, indicated that controversial girls and their friends were less likely to agree on the level of conflict in their friendship than were average girls and their friends (p=.02). Simple difference conflict scores were calculated between each dyad. These scores indicated that the friends of controversial girls rated more conflict in their friendship than did controversial girls (mean = -0.50; a positive mean score would suggest the reverse). For boys, there was no main effect for group at Time 2, Wilks' Λ (6, 130) = 0.76, p = .61.

At Time 3, there was no main effect for group for girls, Wilks' Λ (6, 82) = 1.73, p = .12. Although there was no group effect at Time 3 for girls, there was a difference for conflict but not according to conventional alpha (p = .06). Rejected girls tended to have greater conflict absolute difference scores than controversial, popular and average children. Difference scores indicated that the friends of rejected girls tended to rate more conflict than did rejected girls. For boys, there was no main effect for group at Time 3, Wilks' Λ (6, 70) = 0.23, p = .97.

At Time 4, there was no main effect for girls, Wilks' Λ (6, 100) = 0.58, p = .75, or for boys, Wilks' Λ (6, 78) = 0.67, p = .67. In sum, the results across the four time points do not support Hypothesis 9. Generally, controversial children and their friends' views of the quality of their friendships are similar to the views of popular, average, and rejected children and their friends. Despite this general conclusion, the friends of controversial and rejected girls rated somewhat more conflict than controversial and rejected girls, but this was not significant.

Summary of findings

In both cohorts, children who reported relationships high in closeness/social support and also high in conflict/negative interactions were generally satisfied with their relationships. They also reported similar levels of friendship satisfaction as did children who reported relationships high in closeness/social support and low in conflict/negative interactions. In Cohort 1, children who reported relationships high in closeness and in conflict were, at times, more, not less, likely to stay friends than were children who reported other levels of closeness and conflict in their friendships. In Cohort 1, the relationship closeness of children who provided friendship quality ratings on the same, continuing friend increased over time. In addition, the relationship closeness of girls who kept the same friend across the study tended to increase at a different rate over time than the closeness of girls who provided ratings on different friends. There was no significant difference in the ratings of conflict between boys and girls who reported on the same or a different friend over the course of the study. Children in continuing friendships were not likely to view their relationships more similarly over time.

Next, in both cohorts, aggressive and nonaggressive children reported similar levels of relationship closeness/social support and conflict/negative interactions. However, in Cohort 1, the relationship closeness of aggressive boys tended to decrease over time. In both cohorts, children who reported relationships high in closeness and in conflict were not more likely to increase in overt or relational aggression over time than were children who reported other levels of closeness and conflict. However, in Cohort 1, girls' closeness tended to increase as their aggressive behaviour nominations increased. In

Cohort 2, girls who reported relationships low in social support and in negative interactions increased the most in overt aggression over time.

Finally, in both cohorts, the friendship quality scores of children popular, rejected, controversial and average children were generally similar. Controversial boys and girls did not report greater closeness/social support and conflict/negative interactions than did the other sociometric groups. In Cohort 1, controversial children and their friends were not more likely to have discrepant views of their friendships than were average, popular and rejected children and their friends.

Discussion

This study was conducted to better understand the quality of children's friendships. More specifically, the inclusion of four data time points in Cohort 1 permitted a longer evaluation of boys' and girls' friendship quality over time than typically found in the literature. Previous studies only included two time points (e.g., Bukowski, Hoza, & Boivin, 1994) or tended to focus on youth (e.g., Way & Greene, 2006). A central goal of the present research was to understand the relationship quality trajectory of children who remain in the same friendships.

Another aim of the study was to understand children's highly close and simultaneously conflictual relationships. Although there are some studies on highly close and highly conflictual relationships (e.g., Berndt & Keefe, 1995), these relationships are not fully understood and questions remain unanswered. For example, are children happy in these relationships? Do these relationships last? Are children more aggressive if they participate in these turbulent relationships? Last, are controversial children more likely to report such relationships? The unanswered questions are of particular interest given the

link between highly close yet conflictual relationships and poorer cardiovascular health in young adults (Holt-Lunstad et al., 2007).

In order to answer these questions, two samples, one with younger children and one with older children, were studied. By having a younger and an older sample, the suggestion that friendship quality is related more strongly to children's social behaviour with age could be tested (Furman & Buhrmester, 1992; Sullivan, 1953). However, friendship stability and the change in friendship quality over time were only examined in the younger cohort because of the nature of the data. The discussion of the results for each question in the study is presented below, which is then followed by limitations of the method.

Friendship quality over time

In Cohort 1, children who reported relationships high in closeness and in conflict were not more likely to discontinue their friendships than were children who reported other combinations of closeness and conflict. Contrary to expectations, children who reported relationships high in closeness and in conflict were the least likely group to discontinue their friendships. It appears that children's relationship closeness acted as reserve (e.g., Schneider et al, 1997), or it obscured the high negative interactions that occurred in these relationships. The finding that children who reported relationships high in closeness and in conflict were as satisfied with their relationships as those who reported relationships high in closeness and low in conflict, and were generally more satisfied than those who reported relationships low in closeness and high in conflict in both cohorts bolsters the idea that closeness acts as a reserve. Also, boys and girls who reported relationships low in closeness and high in conflict were the most likely group to

discontinue their friendships (although the rate of stability in that group was only 7% higher than the general rate). In Cohort 1, children appear quite satisfied and adept at managing the intensity of a highly close yet conflictual relationship.

The findings of this study, in tandem with findings of other studies by Hawley and colleagues, suggest that some children, both younger and older (Hawley, Little, & Card, 2007; Hawley, Johnson, Mize, & McNamara, 2007), may actually seek out and enjoy friendships high in closeness and in conflict. More research is needed however to test whether findings on the stability of highly close and conflictual relationships are found in other studies and how children negotiate this intensity. Because these relationships are maintained does not mean that they are as close and dependable at later time points. In fact, children may become somewhat alienated and guarded by becoming less forthright in close relationships. For example, recent research on ambivalent relationships (Bushman & Holt-Lunstad, 2009) shows that closeness is cited as a main reason for maintaining these relationships but that a considerable amount of distancing (i.e., protection) occurs in these relationships as well. Similarly, the intent or purpose of behaviours related to closeness or intimacy may be questioned in ambivalent relationships (e.g., Holt-Lundstad, Uchino, Smith, & Hicks, 2007). Overall, these findings suggest that ambivalence in relationships may be associated with caution and tentativeness in both adults' and children's relationships. That is, friends may cautiously wait for the next interpersonal attack or blow up, which could compromise the benefits of a close relationship. Also, the conflict and discord in these relationships may create more sensitivity to interpersonal rejection (e.g., Downey & Feldman, 2004), which may be reflected in attempts at becoming closer to the friend. In sum, more information is needed

on the impact of highly close and highly conflictual relationships and on what children learn by participating in these relationships.

In contrast to the aforementioned idea, there is the possibility that highly close yet highly conflictual relationships are not destructive. As mentioned in the introduction, Argyle and colleagues found that Italian adults expect close relationships to have high levels of conflict. Next, lively "intense and involved" debates among close friends are common in adulthood (Corsaro, 1994), and interactions among teachers and students are characterized by physical affection, joking, and teasing within the context of a dispute or debate (Corsaro et al., 2003). Therefore, it is possible that the rules of social interaction among adults and between adults and children are the same in the social relationships of children. As a result, relationships high in both closeness and conflict may be more stable in Italy and they might not necessarily be associated with poorer outcomes.

Other research on cross-cultural differences in friendship quality and stability bolsters the idea of the acceptability of conflictual relationship in Italy. For instance, Schneider et al. (1997) found that Canadian 3rd and 4th graders reported more conflict in their friendships than did Italian children, yet they (girls, more precisely) had lower rates of friendship stability (although friendship conflict was not related to friendship stability). The lower level of conflict reported by Italian children, in contrast to Canadian children, may be due to their ability to take the perspective of others and to navigate through and resolve conflict effectively (e.g., Corsaro & Rizzo, 1988).

It is important to note that the cultural dimensions mentioned by the authors as possibly characterizing each culture in the Schneider and colleagues' study (1997) were not measured directly. Furthermore, in other studies, authors' claims regarding the impact

of culture on children's social behaviours (e.g., Chen et al., 2004; Casiglia, et al., 1998) have not been supported. For instance, Chen and colleagues argued that aggressive Chinese children would not over-estimate their social competence as do aggressive children in North America because of the importance of the collective well-being that is strongly emphasized in Chinese culture. Their findings did not support this claim. In sum, using culture as an explanatory mechanism is not straightforward; some phenomena are universal. Therefore, assuming adequate measurement, highly close yet conflictual relationships are more likely to be problematic, regardless of culture (e.g., Laursen & Pursell, 2009).

Apart from the cultural differences in children's relationships, additional analyses tracked children's relationship quality over time. These analyses showed that children's relationship closeness increased over time and that conflict somewhat decreased over time. Therefore, it could be argued that children's relationships became "richer" (Rubin, Fredstrom & Bowker, 2008) over the course of the study. As other researchers have argued (e.g., Sullivan, 1953), and have found, at least in cross-sectional studies (e.g., Furman & Buhrmester, 1992), children gradually derive greater intimacy with their friends as they age. This is important considering the benefits of friendship closeness, for some children. It is important to note that the younger cohort was studied for a span of a year and a half, so developmental changes in friendship quality are not clear because of the limited time frame. Studies that span over a longer time frame than the one in the present study could be beneficial in terms of explaining developmental differences in friendship.

Although the closeness variable in Cohort 1 was constructed in order to have a broad measure of children's friendship quality, its simplicity may have obscured more nuanced shifts in closeness over time. For example, the closeness variable was represented by items tapping into children's aid, validation, exclusivity, disclosure of negative affect, and the affective bond in the relationship. It is not clear which items were responsible for the increase in closeness over time. A true developmental difference could be ascertained by explaining whether intimate behaviours (e.g., disclosing affect) increase over time, rather than companionship, which is important feature of friendship at any age (Furman & Buhrmester, 1992). Unfortunately, meaningful changes within each domain of friendship quality across time could not be done because of the limited number of items.

When the growth curve analyses for friendship closeness over time were broken down by continuing and replacement friendship groups, some differences were found, at least for girls. That is, the closeness of girls in continuing friendships increased over time at a different rate (marginally) than it did for girls who reported on different friends at each time point. It is noteworthy that the closeness in both girls' groups increased over time. No significant difference in conflict was found between the two groups. The closeness of boys in the continuing friendship group also increased over time, but it increased at a similar rate as it did for boys who reported on different friends. Although children in the replacement-friendship group did not necessarily have unstable friendships, they did provide ratings on novel friendships that they had not yet reported on. While some of the results showed that friendship quality and friendship stability are

independent, it appears that friendship stability has important implications, especially for girls. These implications will be discussed shortly.

The present results did not support the idea that children in continuing friendships gradually view their relationships more similarly over time. Despite the increase in closeness and no change in conflict in children's continuing friendships, children's views of their relationships were quite independent of their friends' views. There was no discernable temporal pattern to the level of friendship quality agreement in children's stable friendships. Lavallee and Parker (2009) discussed the idea that children may have different beliefs regarding which children can meet their needs (for affiliation, companionship, intimacy, etc). Some children report flexible friendship beliefs; they believe that many children can meet their needs. Although measures of friendship quality are associated with findings from research on friendship conceptions (e.g., Bukowski, Hoza, & Boivin, 1994), Lavallee and Parker (2009) found that friendship beliefs were distinct from friendship quality. That is, what children expect from their friends is not necessarily the same as what they receive from their friends. Along these lines, it is possible that some children's friendship beliefs are more flexible than others' beliefs, and different views about the friendship may not reflect a lack of synchrony between children (e.g., Rubin, Fredstrom & Bowker, 2008). This flexibility might actually contribute to friendship stability. Last, considering the marginal significance and error messages in the models, it is possible that the small sample size and resulting loss of power contributed to these results.

Past research has revealed that children's positive relationship quality generally decreased over the school year in stable friendships (Berndt et al., 1986; Schneider et al.,

1997). However, these studies were limited to two time points. In this study, the closeness of girls in the continuing friendship group increased at each time point, for a combined total of 10% from Time 1 to Time 4 (note that the closeness of the replacement friendship group increased by 5%). Also, the continuing friendship group was somewhat higher in closeness (i.e., two units) at Time 1 than the replacement friendship group (who were similar to the overall mean for girls). Although it is improbable that Time 1 was the very beginning of the friendship (e.g., Tomada et al., 2005), with the burgeoning importance of friendship around this age period (e.g., Sullivan, 1953), the continuing friendship group appears to have a unique relationship. Also, like past research, changes in relationship conflict were not associated with children who participated in continuing friendships. It is important to note that conflict was quite low across the whole study and meaningful changes could not be discerned in most of the analyses.

The fact that boys' closeness increased for both the continuing and replacement friendship groups makes sense, considering that boys typically interact in large groups and they tend to have more than one very good friend (e.g., Rose & Rudolph, 2006). Boys may have equally close and satisfying relationships with different individuals, and this does not seem to threaten bonds. On the other hand, girls typically interact with one another in smaller, more exclusive groups (Rose & Rudolph, 2006). Interacting with the same friend over time seems to have important functions and it appears to create a unique context regarding how close girls can get with one another. In girls' continuing friendships, there appears to be a more cemented bond in which each successive piece builds upon the previous one, as girls' relationship closeness increased over time in continuing friendships.

The existing research and thought on the changes in children's friendships refers primarily to the shift in expectations and behaviours as children get older (e.g., Furman & Buhrmester, 1992; Sullivan, 1953). However, no researchers appear to have attempted to understand how the friendship quality processes in children's continuing friendships wax and wane through time and what accounts for the glue that keeps children bonded together. Levinger and Levinger (1986) discussed that children's relationship quality can build over time and that there are certain phases to relationships. Although friendships can decrease in closeness over time for various reasons, girls in the continuing friendship group appear to be in the maintenance or build up phase in which they act in ways to foster deepening closeness over time. As Levinger and Levinger (1986) discussed, the build up phase is characterized by increasing self-disclosure, mutually rewarding interactions, greater intimacy and responsiveness. In some ways, the increase in closeness in girls' continuing friendships parallels other findings in the literature that suggest that children's intimacy and ability to bond together increases with age, but at different rates depending on the length of the relationship. Also, these findings are in line with Fredstrom, Rubin and Bowker's (2008) call for more research regarding children's stable friendships. In sum, the degree of closeness in girls' relationships, but not in boys' relationships, seems to depend on their stability of their friendships.

Despite the increase in closeness of girls in continuing friendships, the finding does need to be interpreted with caution because of the statistical limitations of the analysis, namely the non-positive G-matrix. Including a larger sample size, as there were only 32 (just 20 girls) children who reported on the same friend, would be important for future studies. Also, considering that this seems to be the only study to have reported

such results, there is a dire need for replication in other studies, especially in other cultures. Furthermore, there are other limits to consider. For example, it is not certain whether there was variability in children's best friendship choices within the six-month time lag between measurement periods. Recent research suggests that children's friendship choices can vary over shorter periods of time, such as one month, and that friendship instability in this time frame is related to depressive feelings (Chan & Poulin, 2009). Nevertheless, the fact that closeness increased within girls' stable friendships should not be dismissed because this result was obtained in spite of the ceiling effect often encountered in friendship research because the closeness scores of friends tend to be, by definition, very high to begin with.

Future research should provide novel information on children's continuing friendships. If girls' continuing friendships are unique, as mentioned earlier, then perhaps the dynamics within these relationships are different from the relationship dynamics of children who report on replacement friends. For instance, future research could clarify whether these girls are more likely to self-disclose to one another and whether they engage in more trust-worthy behaviours than do girls who replace their friends (e.g., Rotenberg et al., 2004). However, it is possible that self-disclosure can lead to more relationship destructive behaviours, such as gossiping and other social aggression (Murray-Close et al., 2007; Rose & Rudolph, 2006). In a different vein, it is uncertain whether girls' closeness increases with multiple stable friends, rather than just one. These findings could provide fresh information on what leads children to stay bonded. Observational methods clarifying the process of the dynamics in the relationship (e.g., Berndt, 2004; Gottman, 1994) could help connect children's reports of their friends with

their observable behavioural interactions. These studies could clarify whether there are observable qualitative differences between continuing and replacement friendship groups. Understanding the qualitative differences between these groups could provide novel evidence for stage-like effects in children's long lasting friendships.

Friendship quality and children's aggressive behaviour

In both cohorts, aggressive and nonaggressive children reported similar concurrent levels of relationship closeness/support and conflict/negative interactions. Considering the possibility that aggressive children may bring negative characteristics to their relationships, such as perceived threat in ambiguous interpersonal situations (e.g., Coie & Dodge, 1998), more insecure manner of relating to others (see Duncan, 1999), and emotional dysregulation (Crapanzano, Frick, & Terranova, 2010), their relationships should be fraught with lower quality. However, there are many studies showing that aggressive and nonaggressive children do not differ in relationship quality (e.g., Deptula & Cohen, 2004; Fanti et al., 2009). The lack of difference may reflect general overestimation of their relationship quality (Brendgen et al., 2004) but it may also be due, in part, to their ability to empathize and relate to others' distress (Sutton, Smith, & Sweetenham, 1999). The distress of others should generate more closeness or intimacy related behaviours (e.g., Bowlby, 1973), but it is possible that aggressive children use the information gathered in close interactions maliciously (e.g., Daniels et al., 2010; Nelson & Crick, 2002).

Accurate representation of relationship quality or not, there are some research findings showing that more chronic versus transient aggression is related to friendship difficulties, including lower relationship closeness (e.g., Campbell et al., 2010). Indeed,

in Cohort 1, boys who were classified as aggressive at *each* time point were more likely to show more problems in their friendships than were boys who were nonaggressive at each time point. As in other studies (e.g., Brendgen et al., 2004), aggressive boys overestimated their relationship closeness at Time 1, as seen in Figure 6 depicting the closeness of aggressive and nonaggressive boys. However, in the present study, aggressive boys' relationship closeness decreased over time, whereas nonaggressive boys' relationship closeness increased over time (as seen in the general trajectory for closeness in Appendix A). More specifically, aggressive boys' closeness (untransformed) decreased by 11% from Time 1 to Time 4, whereas nonaggressive boys' closeness increased by 11%. There does not seem to be any other study in the literature with such results. Nevertheless, these results show that chronically aggressive children have greater difficulty connecting with others than do nonaggressive children. Again, these results should be interpreted with caution and larger sample sizes of chronically aggressive children, especially chronically aggressive girls, may help to clarify and extend the results reported here.

There was no significant change in conflict across time for aggressive and nonaggressive children in Cohort 1. Again, the conflict scores were quite low and there was little variability, as might be expected in data pertaining to close friendships. Furthermore, the conflict variable in Cohort 1 did not reflect simple disagreements or not getting along as other measures of friendship quality tap into (e.g., Bukowski et al., 1994; Parker & Asher, 1993). It more closely resembled relationally aggressive behaviours or power dynamics within the friendship (e.g., "says will not be your friend" or "bosses you around"). Given the high intercorrelation between overt and relational aggression, and the

fact that relational aggression increases over time in middle childhood (Murray-Close et al., 2007), it makes sense that conflict did not decrease. In fact, one would expect that with adequate measurement, relational aggression would increase in this younger sample.

In Cohort 2, limited power precluded the ability to adequately test whether children who are consistently classified as aggressive change in relationship social support or negative interactions over time. The list-wise deletion procedure in traditional analyses, such as MANOVA, led to a loss of scores because not all children had friendship quality data at each time point. Tracking the change in social support and negative interactions of children who were aggressive at Time 1 did not reveal any statistical difference compared to nonaggressive children. Again, this is possible for the same reasons described above as worse outcomes tend to be found when children display more pervasive negative behaviour (e.g., Campbell et al., 2010).

The decrease in friendship closeness for aggressive boys (Cohort 1) found in this study extends Campbell and colleagues' (2010) work by including multiple data points of aggressive children's relationship quality. Although the results of exploratory paired samples *t*-tests did not reveal significant differences in the closeness scores between chronically aggressive children and their friends, the closeness scores of the friends of chronically aggressive children (their aggression status notwithstanding) were an average three units lower across all time points. The closeness of chronically aggressive children's friends decreased over time as well, although this was a nonsignificant trend. In some ways, the closeness of aggressive children and their friends tracked each over time, such that they both decreased in a synchronous fashion. To some extent, this may

mean there is a certain degree of behavioural synchrony in these friendships, although these relationships may not be "rich" (e.g., Rubin et al., 2008).

Alternatively, the difference in closeness scores amongst aggressive children and their friends may reflect the power differential in the relationship. As mentioned earlier, aggressive children may be sought out as friends because of their *coolness* (Hawley, Little, & Card, 2007) and because of their physical attractiveness (Hawley, Johnson, Mize, & McNamara, 2007). Rather than a reflection of friendship quality overestimation (e.g., Brendgen et al., 2004), perhaps the difference in closeness between aggressive children and their friends reflects the desire of the friend to maintain the relationship with the aggressive child. That is, the friend may engage in more validation or help in order to foster the bond with the aggressive, attractive child. Having all of the power, the aggressive child would not reciprocate the friend's behaviours, such as help and validation, which is why the friend reports lower friendship quality. In a similar vein, perhaps fear rules nonaggressive children's behaviour such that they engage in "nice" behaviours in order not to be hurt (e.g., Nelson and Crick, 2002). Again, these ideas are purely speculative and perhaps qualitative research methods would help to clarify these discrepancies.

Analyses were conducted to examine whether the aggression (both overt and relational) of children who report high closeness/social support and high conflict/negative interactions in their relationships would increase more than it would for children who report other combinations of closeness and conflict. The question was tested in both cohorts, although different statistical analyses were used with each cohort because of the flexibility in each data set.

In each cohort, regardless of statistical design, the aggression of children who reported highly close and highly conflictual relationships did not increase more than it did for children who reported other combinations of closeness and conflict. In Cohort 1, dynamic growth curve models studying the change in closeness, conflict and aggression over time were used. There appears to be only one study in the literature that featured a similar design but it focused on children's relational aggression (Murray-Close, Ostrov, & Crick, 2007). The results in this study did not reveal any statistical relationship between all of the variables. However, the change in girls' relationship closeness over time was related to an increase (although small) in aggressive behaviour. For boys, there was no relationship between closeness and conflict and aggressive behaviour. The link between girls' closeness and aggressive behaviour should be viewed with caution, however, because of the error message in the growth curve models.

In Cohort 2, the results of the regression analyses indicated that there was an association (although small) between closeness and conflict and children's overt aggression. The aggression of girls, but not of boys, who reported relationships low in social support and low in negative interactions increased the most over time. In fact, the aggression of children who reported relationships high in social support and high in negative interactions actually increased the least over time. This finding was the exact opposite of what was expected. Boys and girls who reported relationships high in social support (across all levels of negative interactions) generally did not increase in aggression over time. In Cohort 2, there was no relationship between children's friendship quality and relational aggression over time.

Having different aged cohorts was a unique feature of the thesis. Some authors (e.g., Sullivan, 1953) maintain that friendship quality, and intimacy in particular, is more important later in childhood than it is in middle childhood. As reviewed earlier, there are some studies showing an association between friendship quality and outcomes in older children. There are also findings showing that friendship quality dimensions such as validation, aid, and exclusivity are related to kindergarteners' adjustment as measured by school achievement, liking, and avoidance (Ladd et al., 1996). Again, as mentioned earlier, it is possible that different results would have been achieved in this study if the friendship quality measure was broken down into its specific dimensions, especially for the younger cohort.

Berndt and Keefe (1995) studied the relationship between friendship quality and disruptive behaviour in seventh and eighth graders. Notably, the children in the present study (both Cohorts) were roughly 3 to 7 years of age younger than those in the Berndt and Keefe study. If friendship quality has a stronger association with children's adjustment with age as others have suggested (e.g. Sullivan, 1953; Furman & Buhrmester, 1992), then the discrepant findings in this study, compared to the results reported by Berndt and Keefe, are somewhat to be expected. However, regardless of that simplistic explanation, it would seem more likely that methodological differences between the studies contributed to the different findings. More specifically, Berndt and Keefe used self-report measures of disruptive behaviour and friendship quality. They found that children whose relationships were high in both closeness and in conflict were more disruptive over time than were children whose relationships were either high in closeness or high in conflict. Again, these findings were not strong. When Berndt and

Keefe used teacher reports of disruptive behaviour, their results were barely significant. The use of nonindependent informants may explain their findings, considering that aggressive children report relationships high closeness and conflict (e.g., Hawley et al., 2007). As has been discussed elsewhere (e.g., Newcomb, Bukowski & Pattee, 1995), peers are more attuned informants of children's behaviour than are outsiders, such as teachers. Last, the measures in Berndt and Keefe's study solely reflected disruptive behaviour in class, which is associated in aggressive behaviour (e.g., Coie & Dodge, 1998), and the measures of aggression in the present study were not as circumscribed.

Apart from the methodological differences between the present and Berndt and Keefe's (1995) study, there are additional factors to consider regarding the lack of significant findings. As discussed earlier, it is possible that children's behaviours leading to a relationship high in closeness may mask, or at least offset, children's high conflict. Generally speaking, closeness has been linked to more adaptive behaviours and conflict to more maladaptive behaviours (e.g., Berndt, 2002). If relationship closeness offsets relationship conflict, as discussed earlier, then it could be argued that more adaptive behaviours may result. Again, there is the possibility that children may thrive in highly close yet conflictual relationships but the costs need to be fully explored in additional research.

There is also the possibility that the association between friendship quality and peer-rated aggression does not capture the dynamics within friendships. Although there is an overlap between children's friendship and peer worlds, they are distinct constructs (e.g., Bukowski & Hoza, 1989; Asher et al., 1996). Along these lines, it is possible that the wrong dependent variable was examined. Indeed, in a recent study by Daniels,

Quigley, Menard, & Spence (2010), it was found that both physical and relational victimization *within* girls' friendships was related to both high positive and negative friendship quality. Furthermore, and perhaps more importantly, half of the variance in relational victimization, and a third of the variance in physical victimization within friendships was accounted for by children's relationship quality. These findings suggest that dynamics within the friendship, rather than within the peer-network, are better accounted for by children's friendship quality.

Other variables that were not considered could have affected the link between friendship quality and aggression in both cohorts. For example, proactively aggressive children report supportive and satisfying relationships, whereas reactively aggressive children do not (Poulin & Boivin, 1999). The degree of proactive versus reactive aggression in this study was not controlled, although the aggression variable in Cohort 1 resembles proactive aggression more than reactive aggression. The variability in children's aggressive behaviour may have contributed to the results. Furthermore, in both cohorts, the effect of children's friends and how members of the same friendship-dyad socialize one another toward aggressive behaviour were not examined. Adams and Bukowski (2005) found that changes in children's aggressive behaviour were related to the characteristics of their friends, such that befriending a child low in aggression is related to less aggression over time. Last, some aggressive children are perceived as popular, whereas others are not (Estell, Cairns, Farmer, & Cairns, 2002), and the link between friendship quality and aggressive behaviour, both overt and relational, is mediated by children's perceived popularity (Rose et al., 2004). In sum, the link between friendship quality and peer-rated aggressive behaviour over time is not straightforward,

and these additional factors may help to explain the lack of significant results of the present study.

Despite the aforementioned issues, there were some interesting and unexpected results. As mentioned, in Cohort 1, girls' aggression and closeness tracked each other over time. As one increased, so did the other, to a modest degree. Although overt aggression tends to be studied solely in boys (e.g., Coie & Dodge, 1998; see also Murray-Close et al., 2007), there are some girls who display overt aggression as well (Loeber et al., 2009). Recent work by Hawley and colleagues (2007), for example, has found that bistrategic girls engage in high levels of both overt and relational aggression in their friendships. Hawley and colleagues findings are akin to Moffitt and colleagues' (2001) findings that girls are more likely to use physical aggression within their friendships. In a different vein, closeness in girls' relationships is not always a good thing as some children use close and intimate details against the other by gossiping and spreading nasty rumours (e.g., Murray-Close et al., 2007), which may affect one's sense of self and overall feelings of worth (Bowker & Rubin, 2009). Considering that children's overt and relational aggression are highly intercorrelated (see the present study and Smith et al., 2010), it is possible that the increase in girls' closeness and overt aggression in the present study is due to the association between relationally aggressive behaviours and relationship closeness, as Murray-Close and colleagues (2007) found. Indeed, in another study, Murray-Close and Crick (2006) found that as children's physical aggression increased, so did their relational aggression. Therefore, it is possible that by including measures of relational aggression in Cohort 1, similar results as Murray-Close and colleagues (2007) would be achieved.

In Cohort 2, the overt aggression of girls who reported relationships low in social support and low in negative interactions increased the most over time. It should be noted that girls were generally lower in overt aggression than were boys, so the significance and implications of the finding is not large but it is noteworthy. As discussed earlier, girls are socialized towards harmonious interpersonal relationships with others (Rose & Rudolph, 2006). Sullivan (1953) remarked that low quality relationships lead children to feel defensive and insecure. It is possible that girls who report relationships low in social support and low in negative interactions may react defensively in aggressive ways because of their inability to fruitfully connect with others. There is evidence that insecure attachment to others is related to disruptive behaviour (e.g., Fonagy et al. 1997), possibly because the threat of a secure connection with others (e.g., Bowlby, 1973), and that young aggressive girls tend to report poor relationship quality with their friends (e.g., Campbell et al., 2010).

In addition to the link uncovered in the present study between friendship quality and aggressive behaviour, there were also some interesting findings on children's peer-rated aggressive behaviour over time. In this Italian sample, children's aggressive behaviour increased over time. Although there are findings showing that children's aggressive behaviour decreases as they get older (e.g., Broidy et al., 2003; Underwood, Beron, & Rosen, 2009), children's bullying behaviour appears to be somewhat stable and it increases from middle-late childhood through early adolescence (Lafontaine, 1991; Long & Pelligrini, 2003). Pelligrini and Long suggest that children's aggressive behaviour is a dominance strategy used to solidify peer status through the transition to middle school. Also, Strayer and Strayer (1976) noted that dominance hierarchies are

very common amongst both boys and girls. It is possible that the increase in boys' and girls' aggression (especially because it resembles more proactive aggression) is related to the need to establish peer status, perceived or real, as peer status is very important in this age group (e.g., Sullivan, 1953). Additionally, the increase in aggression may be due to the destabilization that occurs from the transition to a more challenging school environment and increased academic demand that Italian children go through as they enter the third grade (Tomada, Schneider, Domini, Greenman, & Fonzi, 2005).

Friendship quality and sociometric status

Overall, the results found in both cohorts showed that controversial children did not report high levels of closeness/social support in conjunction with high levels of conflict/negative interactions. The closeness and conflict means at various time points for controversial boys and girls in Cohort 1 were in the direction of the hypothesis but there was no statistical relationship. In Cohort 2, the means for negative interactions for controversial boys and girls were somewhat in the direction of the hypothesis as well but, again, there was no statistical relationship between children's sociometric status and children's reported friendship quality. Although it is tempting to infer that the modest sample size was a determining factor in the null results, especially for Cohort 1, other studies with larger sample sizes have found similar results as those reported here (e.g., Brendgen et al., 2000; Lansford et al., 2006; Patterson et al., 1990).

As discussed, controversial children are liked by many and also disliked by many. The question remains as to *who* likes and dislikes controversial children as this may affect the cross-situational consistency argument discussed in the introduction (i.e., behavioural similarity in children's peer and friendship contexts). For example, Farmer

and colleagues (2009) recently studied the link between children's liked most/least nominations and peer cliques. They found that children reserved their liked most nominations for children within their clique, and their liked least nominations for those outside of their clique. Farmer and colleagues' findings suggest that controversial children would be more likely to have close or socially supportive relationships devoid of negativity. Therefore, controversial children would not be more likely than other sociometric groups to report relationships high in both closeness/social support and conflict/negative interactions.

As discussed earlier, some children appear to seek out, or at least make friends with mean children (Hawley et al., 2007). Controversial children have been regarded as manipulative according to their teachers (Repacholi et al., 2003) and as tough by their peers (e.g., Robertson et al. 2010). Although controversial children are often nominated as friends and are socially central in their peer groups (e.g., Gest et al., 2001), it is possible that their mean or manipulative behaviours foreshadow the development of a close bond. Furthermore, because controversial children are socially prominent and display leadership qualities (e.g., Newcomb et al., 1995), it is possible that they use these behaviours in order to establish peer norms, although these norms may not be healthy because of their centrality in deviant peers groups (DeRosier & Thomas, 2003). Ethnographic researchers Adler and Adler (1998) said that high status children act in prosocial ways to gain others' liking, but that they also act in hostile ways so as to preserve the group's boundaries. Therefore, the behaviours of controversial children may lead their friends to feel unsafe leading their friends to not "tell others to stop teasing", "say you're good at sports", or "mostly play with you." Last, because controversial

children may choose others as friends in order to boost their own social standing (e.g., Hawley, 2003), their friends may see through the fickleness or they may even be fickle themselves, which would preclude the development of a close bond.

There is the possibility that the friendships of controversial children become mutual antipathies (e.g., Card, 2010), in which each member dislikes the other after forming a bond. This can be problematic because increases in mutual antipathy involvement are associated with increases in physical aggression and victimization for boys and relational aggression for girls (Murray-Close & Crick, 2006). There is some evidence for antipathy (in Cohort 1) after examining the number of children who disliked a previously listed friend. Specifically, across all time points, there were just 21 children who reported disliking a previously listed friend, but 24% of these ratings were made by controversial children (average children represented the largest percentage at 33%; 14% for popular; and 10% for rejected children). Considering the small number of children who are classified as controversial, the percentage is quite remarkable. This means that the dynamics within controversial children's friendships can be quite damaging to enduring friendships. However, considering that the dislike was not mutual, this may suggest even worse socio-emotional outcomes for controversial children because shared antipathy, in contrast to unilateral antipathy, can help define a sense of self (e.g., Witkow et al., 2005).

Just as there were no significant friendship quality differences amongst the sociometric groups, there were no significant differences in the friendship-dyad discrepancy scores amongst the sociometric groups in Cohort 1. That is, controversial children and their friends were no more or less likely to have discrepant views of their

relationships than were popular, average, and rejected children and their friends. The lack of significance could be due to the identity of the controversial children's friends. Different sociometric status children have different social needs (e.g., Brendgen et al., 2000). Considering that controversial children made friends with different sociometric status children, greater differences in the friendship of a controversial and rejected child, for example, would be expected.

It is possible that the friends of controversial children would act in more positive ways towards controversial children in order to foster a bond with a powerful child. If controversial children are adept at acquiring social resources as the work by Hawley et al. (2002) suggests, then perhaps the friends of controversial strive to maintain the bond, which would lead to discrepant views of the relationship. However, controversial children are socially adept (e.g., Newcomb et al., 1995), which would suggest that they are quite able to match and reciprocate the gestures of their friends. Therefore, less rather than more discrepancy would be expected.

The present results failed to replicate Brendgen and colleagues' (2000) findings regarding the discrepancy in reported friendship quality between rejected children and their friends. There are two possible reasons for this. There were not many rejected children who had friendship quality data that were included in the analyses. For instance, Brendgen and colleagues (2000) had three to four times more the number of rejected children in their analyses than the number of rejected children in the present study. This means that at least twice the number of controversial children would probably be sufficient. Second, Brendgen et al. (2000) did not use a global measure of friendship quality (i.e., they examined friendship aid/help separately from intimacy, for example).

The closeness measure used in the present study represented different aspects of children friendship quality and may have masked or obscured subtler aspects of friendship quality that Brendgen and colleagues (2000) studied.

A number of studies have found no difference in the relationship quality of different sociometric status children (e.g., Brendgen et al., 2000; Lansford et al., 2006; Patterson et al., 1990). There is the possibility that observational studies would yield differences in the interaction quality of children of different sociometric status. The information gleaned from observations of behavioural interactions shows that rejected girls, for example, have poorer quality interactions with their friends than do other sociometric status children and their friends (e.g., Lansford et al., 2006). In line with the ideas put forth by Cillessen (2006) and Steenbeck and van Geert (2008), studies observing the dynamic interaction between peer status, power, and competence would help to elucidate the relationships of controversial and other peer status children. With the exception of studies including observations of the play interactions of controversial children (e.g., Black & Logan, 1995; Braza et al., 2007), there do not seem to be any observational studies of controversial children's interactions with their friends. This is obviously problematic considering controversial children's characteristics, as discussed earlier.

Limitations of the present study

In addition to the limitations already mentioned, there were other additional noteworthy problems. A major limitation in Cohort 1 was the measure representing conflict. It did not represent conflict in the classical sense (e.g., degree of disagreement or quarrelling between friends) as is typically found in other measures of friendship quality

(e.g., Bukowski, Hoza, & Boivin, 1994; Parker & Asher, 1993). Also, the low number of items and poor internal consistency of the scale across each time point was problematic for the conflict measure. Again, it should be noted that very few studies using the Friendship Features Interview for Young Children (Ladd et al., 1996) were located in the literature, but it is the only published measure of friendships quality for young children. Also, Ladd and colleagues had difficulty in coming up with a clear, interpretable structure. The low internal consistency amongst the items in the present study is likely due to the different constructs being tapped into. For instance, "says won't be your friend" is more relationally aggressive in nature, whereas "bosses you around" and "makes fun of you" reflects more the power dynamics within a relationship. A measure including conflict as it pertains to disagreements and arguing in addition to how conflict is resolved may be more generalizable to the detrimental (or even adaptive) effects of conflict discussed in the introduction.

Even though there was a nonsignificant downward trend for conflict across each of the four time points in Cohort 1, the incidence of conflict was quite low. That is, the majority of children rated low levels (an average score of 1 out of a possible 6) of conflict. Given the intense nature of the kind of conflict detected by the Friendship Features Interview, this may be a good thing since children did not appear to engage in many dominant-like behaviours with their friends. However, the low rate of conflict may be due to the method used to measure it. For instance, Laursen and Pursell (2009) said that more conflict is reported when it is defined as disagreeing rather than as quarrelling or arguing. Given the more relationally aggressive nature of the conflict variable in Cohort 1, the low incidence rate may be due to the "intense" nature of the items. As seen

in Cohort 2, the rate of negative interactions among friends was comparable to other studies in the literature (e.g., Furman, 1996). Again, items that tap into disagreements among friends could lead to results similar to those found in the literature. Furthermore, repeated measurements that control for recent fights or arguments among friends may lead to more accurate representations of the general level of conflict within friendships.

As mentioned in the introduction, there is a context and sequence to children's conflict with friends (Laursen & Pursell, 2009; Shantz, 1987). The sequence or context of children's conflict was not understood in either cohort. Items targeting the context in which conflict occurs might prove useful. For instance, arguing that takes place within the context of a stimulating educational debate, or quarrelling that identifies needs and clarifies personal boundaries in a relationship might be associated with more adaptive outcomes. On the other hand, quarrelling for the sake of quarrelling (e.g., "argues with me no matter what I say") or conflict regarding the lack of "respect" of friendship rules might be associated with poorer outcomes. Furthermore, it is uncertain whether children who report highly close yet conflictual relationship engage in more coercive versus negotiation tactics with their friends. Given the probable intensity highly conflictual yet close relationships, the present study would have benefited if the kinds of conflict behaviours that occur amongst friends were better understood. Such information would either support or discount the idea that relationships characterized by simultaneous high closeness and conflict are indeed intense and fraught with negative affect. On the other hand, if high closeness offsets the high conflict in these relationships, as discussed earlier, alternative scenarios may be more likely. For instance, there is the likelihood that children will engage in communal goals aimed at fostering their relationships (Rose &

Asher, 1999). The literature on children's friendships could be improved by testing these speculations.

Apart from the problems with the measure of conflict, there was no measure of relational aggression in Cohort 1. This is unfortunate because the aggression of girls is often relational in nature (e.g., Crick & Grotpeter, 1995), although Card and colleagues (2008) found in their meta-analysis that gender differences in relational aggression are quite small. Not having a measure of relational aggression in Cohort 1 was problematic for a number of other reasons. First, by including an index of relational aggression, it would have been possible to do a direct test of the only study to show that girls' relational aggression increases as a function of their friendship intimacy (e.g., Murray-Close et al., 2007). The dynamic change between two variables over time using hierarchical linear models is not common in research on children's friendships (Murray-Close et al., 2007). Second, the trajectory of chronically relationally aggressive girls' relationship quality could have been measured. To date, there does not appear to be any research on this topic. Such findings would help to flesh out the existing literature on the problems evident in relationally aggressive girls (e.g., Card et al., 2008), and perhaps boys as well. Third, it was not possible to compare the link between friendship quality and relational aggression in both of the younger and older cohorts. Some researchers (e.g., Furman & Buhrmester, 1992) suggest that friendship quality should have stronger effects on children's development with age. Having a measure of relational aggression in each cohort could have tested Furman and Burhmester's contention.

In Cohort 2, there were a number of limitations worthy of mentioning. The lack of multiple data points, including measures of friendship quality for children in continuing

friendships, limited the opportunity to track children's relationship quality over time with more sophisticated data analyses such as hierarchical linear modelling. Second, the impossibility of including friendship stability scores precluded direct comparisons of the link between friendship quality and friendship stability in the younger and older cohorts.

Last, it is unclear how the results in both of these samples would generalize to other cultures. As seen, children were satisfied in highly close yet conflictual relationships. An important question would be to understand the impact and desirability of highly close and conflictual relationships in other cultures (e.g., China) where there is a high value placed on harmonious interactions and an absence of conflict. Also, although the correlates between friendship and peer status are similar in Italy and the United States (e.g., Menesini, 1997), it is also unclear how children in North America respond to turbulent relationships.

Main contributions and applications

Despite its limitations, there are a number of main contributions of the thesis. First, the data indicated that children who participate in highly close yet conflictual relationships do not fare worse than do their counterparts who describe having other kinds of relationships. This general conclusion should be tempered by the fact that there was no equivalent comparison group, ideally from another culture, and because of the limited number of outcome measures. Second, children, girls in particular, who participate in long term relationships derive different benefits from their friends than do children who participate in short term friendships. Finally, chronically aggressive children have difficulty maintaining close relationships with others over time. This is of concern given the benefits of close friendship. Interventions that help aggressive children

connect with others fruitfully such as empathy training (Espelage, Mebane, & Adams, 2004) could be beneficial. Second, interventions that help chronically aggressive children to become aware of the reciprocity that occurs in close relationships (e.g., Berndt, 1982) could also be beneficial.

References

Aboud, F., & Mendelson, M. J. (1996). Determinants of friendship selection and quality: Developmental perspectives. In W.M. Bukowski, A.F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence.* (pp. 87-112). New-York, NY, US: Cambridge University Press

Adams, R. E., Bukowski, W. M. & Bagwell, C. (2005). Stability of aggression during early adolescence as moderated by reciprocated friendship status and friend's aggression. *International Journal of Behavioral Development, 29,* 139-145.

Adams, R. E., & Laursen, B. (2007). The correlates of conflict: Disagreement is not necessarily detrimental. *Journal of Family Psychology, 21,* 445-458

Adler, P. A., & Adler, P. (1998). *Peer Power: Preadolescent Culture and Identity*. New Brunswick, NJ: Rutgers University Press,

Agnew, R. (1991). The interactive effects of peer variables on delinquency. *Criminology, 29,* 47-72

Argyle, M., Henderson, M., Bond**,** M., Iizuka, Y., & Contarello, A. (1986). Cross-cultural variations in relationship rules. *International Journal of Psychology, 21,* 287-315

Asher, S. R., Parker, J.G., Walker, D. L. (1996). Distinguishing friendship from acceptance: Implications for intervention and assessment. In W.M. Bukowski, A.F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence.* (pp. 366-405). New-York, NY, US: Cambridge University Press

Azmitia, M., Lippman, D. N., Ittel, A. (1999). On the relation of personal experience to early adolescents' reasoning about best friendship deterioration. *Social Development, 8,* 275-291

Bagwell, C. L., & Coie, J. D. (2004). The best friendships of aggressive boys: Relationship quality, conflict management, and rule-breaking behavior. *Journal of Experimental Child Psychology, 88*, 5-24

Bagwell, C. L., Schmidt, M. E., Newcomb, A. F., & Bukowski, W. M. (2001). Friendship and peer rejection as predictors of adult adjustment. In D. W. Nangle, Douglas W & C. A. Erdley (Eds.), *The role of friendship in psychological adjustment.* (pp. 25-49). San Francisco, CA, US: Jossey-Bass

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.

Belle, D. (1989). [Ed]. Children's social networks and social supports. *Oxford, England: John Wiley & Sons*

Benjamin, W. J., Schneider, B. H., Greenman**,** P. S., & Hum, M. (2001). Conflict and childhood friendship in Taiwan and Canada. *Canadian Journal of Behavioural Science, 33,* 203-211

Benenson, J. F., & Christakos, A. (2003). The greater fragility of females' versus males' closest same-sex friendships. *Child Development, 74*, 1123-1129

Berndt, T. J. (1982). The features and effects of friendship in early adolescence. *Child Development, 53,* 1447-1460

Berndt, T. J. (2002). Friendship quality and social development**.** *Current Directions in Psychological Science, 11,* 7-10

Berndt, T. J. (2004). Children's friendships: Shifts over a half-century in perspectives on their development and their effects. *Merrill-Palmer Quarterly, 50,* 206-223

Berndt, T. J., Hawkins, J. A., Hoyle, S. G. (1986). Changes in friendship during a school year: Effects on children's and adolescents' impressions of friendship and sharing with friends. *Child Development, 57*, 1284-1297

Berndt, T. J., Hawkins, J. A., & Jiao, Z. (1999). Influences of friends and friendships on adjustment to junior high school. *Merrill-Palmer Quarterly, 45*, 13-41

Berndt, T. J., & Hoyle, S.G. (1985). Stability and change in childhood and adolescent friendships. *Developmental Psychology, 21*, 1007-1015

Berndt, T. J., & Keefe, K. (1995). Friends' influence on adolescents' adjustment to school. *Child Development, 66,* 1312-1329

Berndt, T. J., & Perry, T. B. (1986). Children's perceptions of friendships as supportive relationships. *Developmental Psychology, 22,* 640-648

Bigelow, B. (1982). On the interdependency between stage and sequence in the development of children's friendship expectations. *Journal of Psychology: Interdisciplinary and Applied, 110, 121-132*

Black, B., & Logan, A. (1995). Links between communication patterns in mother–child, father–child, and child–peer interactions and children's social status. *Child Development, 66,* 255–271.

Bollmer, J. M., Milich, R., Harris, M. J. & Maras, M. A. (2005). A friend in need: The role of friendship quality as a protective factor in peer victimization and bullying. *Journal of Interpersonal Violence, 20*, 701-712

Boulton M. J. & Smith, P. K. (1994). Bully/victim problems in middle-school children: Stability, self-perceived competence, peer perceptions and peer acceptance. *British Journal of Developmental Psychology, 12,* 315-329.

Bowlby, J. (1973). *Attachment and loss: Separation, anxiety, and anger*. New York: Basic Books.

Bowker, A. (2004). Predicting friendship stability during early adolescence. *Journal of Early Adolescence, 24,* 85-11

Bowker, J. C., Rubin, K. H. (2009). Self-consciousness, friendship quality, and adolescent internalizing problems. *British Journal of Developmental Psychology, 27,* 249-267

Bowker, J. C., Rubin, K. H., Rose-Krasnor, L., & Booth-LaForce, C. (2007). Good friendships, bad friends: Friendship factors as moderators of the relation between aggression and social information processing. *European Journal of Developmental Psychology, 4,* 1-20.

Braza, F., et al., (2007). Behavioral profiles of different types of social status in preschool children: An observational approach. *Social Behavior and Personality, 35,* 195-212

Brendgen, M., Little, T. D, & Krappmann, L. (2000). Rejected children and their friends: A shared evaluation of friendship quality? *Merrill-Palmer Quarterly, 46*, 45-70

Brendgen, M., Vitaro, F., Turgeon, L., Poulin, F., Wanner, B. (2004). Is There a Dark Side of Positive Illusions? Overestimation of Social Competence and Subsequent Adjustment in Aggressive and Nonaggressive Children. *Journal of Abnormal Child Psychology, 32,* 305-320.

Broidy, L. M., et al., (2003). Developmental trajectories of childhood disruptive behaviors and adolescent delinquency: A six-site, cross-national study. *Developmental Psychology, 39,* 222-245

Bukowski, W. M., Hoza, B., & Boivin, M. (1994). Measuring friendship quality during pre- and early adolescence: The development and psychometric properties of the Friendship Qualities Scale. *Journal of Social and Personal Relationships, 11,* 471-484

Bukowski, W. M., Newcomb, A. F. & Hartup, W. W. (1996). *The company they keep: Friendship in childhood and adolescence*. New York, NY, US: Cambridge University Press

Bukowski, W. M., & Hoza**,** B**.** (1989). Popularity and friendship: Issues in theory, measurement, and outcome. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relationships in child development* (pp. 15-45). Oxford, England: John Wiley & Sons

Bushman, B. B., & Holt-Lunstad, J. (2009). Understanding social relationship maintenance among friends: Why we don't end those frustrating friendships. *Journal of Social and Clinical Psychology, 28,* 749-778

Cairns, R. B., Cairns, B. D., Neckerman, H. J., Gest, S. D., et al. (1988). Social networks and aggressive behavior: Peer support or peer rejection? *Developmental Psychology, 24,* 815-823

Campbell, S. B., Spieker, S., Vandergrift, N., Belsky, J., Burchinal, M. (2010). Predictors and sequelae of trajectories of physical aggression in school-age boys and girls. *Development and Psychopathology, 22,* 133-150

Camera di Commercio Firenze (2008). La qualita' della vita 2007 a Firenze secondo l'osservatorio del sole 24ore. Retrieved October 20, 2010 from http://www.fi.camcom.it

Card, N. A. (2010). Antipathetic relationships in child and adolescent development: A meta-analytic review and recommendations for an emerging area of study. *Developmental Psychology, 46,* 516-529

Card, N. A., Isaacs, J., & Hodges, E. V. E. (2009). Aggression and victimization in children's peer groups: A relationship perspective. In A. Vangelisti (Ed.), *Feeling hurt in close relationships.* (pp. 235-259). New York, NY, US: Cambridge University Press

Card, N. A., Stucky, B. D., Sawalani, G. M., & Little, T. D. (2008). Direct and indirect aggression during childhood and adolescence: A meta-analytic review of gender difference, intercorrelations, and relations to maladjustment. *Child Development, 79,* 1185-1229

Casiglia, A. C., Lo Coco, A., & Zappulla, C., (1998). Aspects of social reputation and peer reputation in Italian children: A cross-cultural perspective. *Developmental Psychology, 34,* 723-730

Chan, A., & Poulin, F., (2009). Monthly instability in early adolescent friendship networks and depressive symptoms *Social Development, 18,* 1-23.

Chen, X. (2000). Social and emotional development in Chinese children and adolescents: A contextual cross-cultural perspective. In F .Columbus(Ed). *Advances in psychology research, Vol. 1. (pp. 229-251).* Hauppauge, NY, US: Nova Science Publishers.

Chen, X., Zappulla, C., Lo Coco, A., Schneider, B., Kaspar, V., De Oliveira, A. M., et al., (2004). Self-perceptions of competence in Brazilian, Canadian, Chinese, and Italian children: Relations with social and school adjustment. *International Journal of Behavioral Development, 28,* 129-138.

Cillessen, A. H. N. (2006). Peer Rejection: Bridging Theory and Application. *Human Development, 49,* 44-53

Cillessen, A. H. N. & Bellmore, A. D. (1999). Accuracy of social self-perceptions and peer competence in middle childhood. *Merrill-Palmer Quarterly, 45*, 650-676

Clark, M. L.**,** & Drewry**,** D. L. (1985). Similarity and reciprocity in the friendships of elementary school children. *Child Study Journal, 15,* 251-264

Coie, J. D., Cillessen, A. H. N., Dodge, K. A., Hubbard, J. A., Schwartz, D., Lemerise, E. A., & Bateman, H. (1999). It takes two to fight: A test of relational factors and a method for assessing aggressive dyads. *Developmental Psychology, 35,* 1179-1188

Coie, J. D., & Dodge, K. A. (1998). Aggression and antisocial behavior. In W. Damon & N. Eisenberg, Nancy (Eds.), *Handbook of child psychology, 5th ed.: Vol 3. Social, emotional, and personality development.* Hoboken, NJ, US: John Wiley & Sons

Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology, 18,* 557-570

Coie, J. D., & Kupersmidt, J. B. (1983). A behavioral analysis of emerging social status in boys' groups. *Child Development, 54,* 1400-1416

Corsaro, W. A., (1994). Discussion, debate, and friendship Processes: Peer discourse in U.S. and Italian Nursery schools. *Sociology of Education, 67,* 1-26

Corsaro, W. A. (1992). Interpretive reproduction in children's peer cultures. *Social Psychology Quarterly, 55,* 160-177

Corsaro, W. A., Molinari, L., Gold Hadley, K., & Sugioka, H. (2003). Keeping and making friends: Italian children's transition from preschool to elementary school. *Social Psychology Quarterly, 66,* 272-292

Corsaro, W. A., & Rizzo, T. A. (1988). Discussione and friendship: Socialization processes in the peer culture of Italian nursery school children. *American Sociological Review*, *53,* 879-894

Crapanzano, A. M., Frick, P. J., & Terranova, A. M. (2010). Patterns of physical and relational aggression in a school-based sample of boys and girls. *Journal of Abnormal Child Psychology, 38,* 433-445

Crick, N. R., & Ladd, G. W. (1993). Children's perceptions of their peer experiences: Attributions, loneliness, social anxiety, and social avoidance. *Developmental Psychology, 29*, 244-254

Crick, N.R., & Grotpeter, J. K., (1995). Relational aggression, gender and social-psychological adjustment. *Child Development, 66*, 710-722

Crick, N. R., & Nelson, D. A. (2002). Relational and physical victimization within friendships: Nobody told me there'd be friends like these. *Journal of Abnormal Child Psychology, 30,* 599-607

D'Agostino-Mautner, R. (2003). *Living la Dolce Vita: Bring the Passion, Laughter and Serenity of Italy into Your Daily Life.* New York, NY: US: Sourcebooks, Incorporated

Daniels, T., Quigley, D., Menard, L., & Spence, L. (2010**).** My best friend always did and still does betray me constantly": Examining relational and physical victimization within a dyadic friendship context. *Canadian Journal of School Psychology, 25,* 70-83.

Deptula, D. P. & Cohen, R. (2004). Aggressive, rejected, and delinquent children and adolescents: A comparison of their friendships. *Aggression Violent Behavior, 9,* 75-104

DeRosier, M. E., & Thomas, J. M. (2003). Strengthening sociometric prediction: Scientific advances in the assessment of children's peer relations. *Child Development, 74*, 1379-1392

Dishion, T. J., McCord, J., & Poulin, F. (1999). When interventions harm: Peer groups and problem behavior. *American Psychologist, 54*, 755-764

Dodge, K. A., & Coie, J. D. (1987). Social-information processing factors in reactive and proactive aggression in children's peer groups. *Journal of Personalityand Social Psychology, 53,* 1146–1158.

Downey, G., & Feldman, S. I. (2004). Implications of Rejection Sensitivity for Intimate Relationships. In R. M. Kowalski & M. R. Leary (Eds.), *The interface of social and clinical psychology: Key readings*. (pp. 173-198). New York, NY, US: Psychology Press; US

Duncan, R. D., (1999). Peer and sibling aggression: An investigation of intra- and extra-familial bullying. *Journal of Interpersonal Violence, 14,* 871-886.

Ellis, W. E., & Zarbatany, L., (2007). Explaining friendship formation and friendship stability: The role of children's and friend's aggression and victimization. *Merrill Palmer Quarterly, 53,* 79-104

Epstein, J. (1989). The selection of friends: Changes across the grades and in different school environments. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relationships in child development* (pp. 158-187). Oxford, England: John Wiley & Sons.

Espelage, D. L., Mebane, S. E., & Adams, R. S. (2004). Empathy, Caring, and Bullying: Toward an Understanding of Complex Associations. In D. L. Espelage & S. M. Swearer (Eds.), *Bullying in American schools: A social-ecological perspective on prevention and intervention*. Mahwah, N.J., US: Lawrence Erlbaum

Estell, D. B., Cairns, R. B., Farmer, T. W., Cairns, B. D. (2002). Aggression in inner-city early elementary classrooms: Individual and peer-group configurations. *Merrill-Palmer Quarterly, 48,* 52-76

Fanti, K. A., Brookmeyer, K. A., Henrich, C. C., & Kuperminc, G. P. (2009). Aggressive behavior and quality of friendships: Linear and curvilinear associations. *Journal of Early Adolescence. 29,* 826-838.

Farmer, T. W., Leung, M., Keagy, K., Boudah, D. J., Akos, P., McDonough, E., et al., (2009). Social preference choices in late elementary school: Within and across group nominations. *Psychology in the Schools, 46,* 362-374

Fehr, B. (1996). *Friendship Processes.* London, United Kingdom: Sage Publications.

Fonagy, P., Target, M., Steele, M., Steele, H., Leigh, T., Levinson, A., et al. (1997). Morality, disruptive behavior, borderline personality disorder, crime and their relationship to security of attachment. In L. Atkinson & K. J. Zucker (Eds.), *Attachment and psychopathology.* (pp. 223-274)New York, NY, US: Guilford Press.

Fonzi, A., Schneider, B. H., Tani, F., & Tomada, G. (1997). Predicting children's friendship status from their dyadic interaction in structured situations of potential conflict. *Child Development, 68*, 496-506

Fingerman, K.L., Hay, E.L., & Birditt, K.S. (2004). The best of ties, the worst of ties: Close, problematic and ambivalent social relationships. *Journal of Marriage and the Family, 66,* 792-808

Frankel, K. A. (1990). Girls' perceptions of peer relationship support and stress. *Journal of Early Adolescence, 10*, 69-88

French, D. C., Pidada, S., Victor, A. (2005). Friendships of Indonesian and United States youth. *International Journal of Behavioral Development, 29,* 304-313

Furman, W. (1996). The measurement of friendship perceptions: Conceptual and methodological issues. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence*. (pp. 41-65). New York, NY, US: Cambridge University Press

Furman, W., & Buhrmester, D. (1985). Children's perceptions of the personal relationships in their social networks. *Developmental Psychology, 21,* 1016-1024

Furman, W., & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development, 63,* 103-115

Furman, W. W., & Buhrmester, D. (2009). Methods and measures - The Network of Relationships Inventory: Behavioral Systems version. *International Journal of Behavioral Development, 33,* 470-478.

Garson, D. (2010). *Statnotes: Topics in Multivariate Analysis.* Retrieved from http://faculty.chass.ncsu.edu/garson/PA765/statnote.htm

Genta ML, Menesini E, Fonzi A, Costabile A, Smith PK. 1996. Bullies and victims in schools in central and southern Italy. *European Journal of Psychology of Education, 11,* 97–110

Gest, S. D., Graham-Bermann, S. A., & Hartup, W. W. (2001). Peer experience: Common and unique features of number of friendships, social network centrality, and sociometric status. *Social Development, 10,* 23-40

Gifford-Smith, M. E., & Brownell, C. A. (2003). Childhood peer relationships: Social acceptance, friendships, and peer networks. *Journal of School Psychology, 41,* 235-284

Goldbaum, S., Craig, W. M., Pepler, D., & Connolly, J. (2003). Developmental Trajectories of Victimization: Identifying Risk and Protective Factors. *Journal of Applied School Psychology, 19*, 139-156

Gottman, J. M. (1994). *What predicts divorce: The relationship between marital processes and marital outcomes.* Hillsdale, New Jersey, US: Lawrence Erlbaum

Greenman, P. S., Schneider, B. H., & Tomada, G. (2009). Stability and change patterns of peer rejection: Implications for children's academic performance over time. *School Psychology International, 30,*163-183

Grotpeter, J. K., & Crick, N. R. (1996). Relational aggression, overt aggression, and friendship. *Child Development, 67,* 2328-2338

Harrington, D. (2009). *Confirmatory Factor Analysis.* New York, NY, US: Oxford University Press

Hartup, W. W. (1989). Behavioral manifestations of children's friendships. In T. J. Berndt & G. W. Ladd (Eds.), *Peer relationships in child development* (pp. 46-70). Oxford, England: John Wiley & Sons

Hartup, W. W. (1996). The company they keep: Friendships and their developmental significance. *Child Development, 67*, 1-13

Hartup, W. W., & Shantz, C. U. (1992). *Conflict in child and adolescent development.* New York, NY, US: Cambridge University Press

Hartup, W. W., & Stevens, N. (1997). Friendships and adaptation in the life course. *Psychological Bulletin, 121*, 355-37

Haselager, G. J. T; Hartup, W. W., van Lieshout, C. F. M, & Risken-Walraven, J., & Marianne, A. (1998). Similarities between friends and nonfriends in middle childhood. *Child Development, 69,* 1198-1208

Hawley, P. H. (2003). Strategies of control, aggression and morality in preschoolers: An evolutionary perspectives. *Journal of Experimental Child Psychology, 85*, 213-235

Hawley, P. H., Little, T. D., & Pasupathi, M. (2002). Winning friends and influencing peers: Strategies of peer influence in late childhood. *International Journal of Behavioral Development, 26,* 466-474

Hawley, P. H., Johnson, S. E., Mize, J. A., & McNamara, K. A. (2007). Physical attractiveness in preschoolers: Relationships with power, status, aggression and social skills. *Journal of School Psychology, 45,* 499-521.

Hawley, P. H., Little, T. D., & Card, Noel A. (2007a). The allure of a mean friend: Relationship quality and processes of aggressive adolescents with prosocial skills. *International Journal of Behavioral Development, 31*, 170-180

Hodges, E. V. E., Boivin, M., Vitaro, F., & Bukoswski, W. M. (1999). The power of friendship: Protection against an escalating cycle of peer victimization. *Developmental Psychology, 35,* 94-101.

Holt-Lundstad, J., Uchino, B.N., Smith, T.W., & Hicks, A. (2007). On the importance of relationship quality: The impact of ambivalence in friendships on cardiovascular functioning. *Annals of Behavioral Medicine, 33,* 278-290

Hoff, K. E., Reese-Weber M., Schneider W. J., & Stagg, J. W., (2009). The association between high status positions and aggressive behavior in early adolescence. *Journal of School Psychology, 47,* 395-426.

Howes, C. (1988). Peer interaction of young children. *Monographs of the Society for Research in Child Development, 53, 94*

Joshi, A., & Ferris, J. C. (2002). Causal attributions regarding conflicts between friends in middle childhood. *Social Behavior and Personality, 30*, 65-74

Kandel, D. B. (1978). Homophily, selection, and socialization in adolescent friendships. *American Journal of Sociology, 84,* 427-436

Katz, L. F., Kramer, L., Gottman, J. M. (1992). Conflict and emotions in marital, sibling, and peer relationships. In C. U. Shantz & W. W. Hartup (Eds.), *Conflict in child and adolescent development*. (pp. 122-149). New York, NY, US: Cambridge University Press

Keefe, K., & Berndt, T. J. (1996). Relations of friendship quality to self-esteem in early adolescence. *Journal of Early Adolescence, 16,* 110-129.

Kim, U., Triandis, H. C., Kagitcibasi, C., Choi, S. C., & Yoon, G. (Eds.). (1994). *Individualism and Collectivism: Theory, method, and applications.* Thousand Oaks, California, US: Sage.

Kitayama, S., Markus, H. R., Matsumoto, H., & Norasakkunkit**,** V. (1997). Individual and collective processes in the construction of the self: Self-enhancement in the United States and self-criticism in Japan. *Journal of Personality and Social Psychology, 72,* 1245-1267

Kochenderfer, B. J., & Ladd, G. W. (1997). Victimized children's responses to peers' aggression: Behaviors associated with reduced versus continued victimization. *Development and Psychopathology, 9,* 59–73.

Krappmann**,** L. (1996). Amicitia, drujba, shin-yu, philia, Freundschaft, friendship: On the cultural diversity of a human relationship. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence*. (pp. 19-40). New York, NY, US: Cambridge University Press

Kupersmidt, J. B., & Coie, J. D. (1990). Preadolescent peer status, aggression, and school adjustment as predictors of externalizing problems in adolescence. *Child Development, 61*, 1350-1362

Kupersmidt, J. B., Burchinal, M, & Patterson, C. P. (1995). Developmental patterns of childhood peer relations as predictors of externalizing behavior problems. *Development and Psychopathology, 7,* 825-843

Kupersmidt, J. B., DeRosier, M. E., & Patterson, C. P. (1995). Similarity as the basis for children's friendships: The roles of sociometric status, aggressive and withdrawn behavior, academic achievement and demographic characteristics. *Journal of Social and Personal Relationships, 12,* 439-452

Ladd, G. W. (1990). Having friends, Keeping friends, making friends, and being liked by peers in the classroom: Predictors of children's early school adjustment? *Child Development, 61,* 1081-1100.

Ladd, G. W., & Emerson, E. S. (1984). Shared knowledge in children's friendships. *Developmental Psychology, 20,* 932-940

Ladd, G. W., Kochenderfer, B. J., & Coleman, C. C. (1996). Friendship quality as a predictor of young children's early school adjustment. *Child Development, 67,* 1103-1118

Ladd, G. W., Kochenderfer, B. J., & Coleman, C. C. (1997). Classroom peer acceptance, friendship, victimization: Distinct relational systems that contribute uniquely to children's school adjustment? *Child Development, 68,* 1181–1197

La Fontaine, J. 1991. *Bullying: The child's view*. London, UK; Calouste Gulbenkian Foundation

Lansford, J.E., Putallaz, M., Grimes, C. L., Schiro-Osman, K. A., Kupersmidt, J. B. Coie, J. D. (2006). Perceptions of friendship quality and observed behaviors with friends: How do sociometrically rejected, average and popular girls differ? *Merrill Palmer Quarterly, 52,* 694-720

Laursen, B. (1996). Closeness and conflict in adolescent peer relationships: Interdependence with friends and romantic partners. In W. M. Bukowski, A. F. Newcomb, & W. W. Hartup (Eds.), *The company they keep: Friendship in childhood and adolescence*. (pp. 186-210). New York, NY, US: Cambridge University Press

Laursen, B., Hartup, W. W., & Koplas, A. L. (1996). Towards understanding peer conflict. *Merrill-Palmer Quarterly, 42,* 76-102.

Laursen, B., & Mooney, K. S. (2008). Relationship network quality: Adolescent adjustment and perceptions of relationships with parents and friends. *American Journal of Orthopsychiatry, 78,* 47-53

Laursen, B. & Pursell, G. (2009) Conflict in peer relationships. In K. H. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of Peer Interactions, Relationships and Groups.* (pp. 267-286). New York, NY, US: Guilford.

Lavallee, K. L., & Parker, J. G. (2009). The role of inflexible friendship beliefs, rumination, and low self-worth in early adolescents' friendship jealousy and adjustment. *Journal of Abnormal Child Psychology, 37,* 873-885

Leary, A**.**, & Katz, L. F. (2005). Observations of aggressive children during peer provocation and with a best friend. *Developmental Psychology, 41,* 124-134

Levinger, G., & Levinger, A. C. (1986). The temporal course of close relationships: Some thoughts about the development of children's ties. In W. W. Hartup & Z. Rubin (Eds.), *Relationships and Development* (pp. 111-133). Hillsdale, NJ: USA: Lawrence Erlbaum

Loeber, R., Pardini, D. A., Hipwell, A., Stouthamer-Loeber, M., Keenan, K., & Sembower, M. A. (2009). Are there stable factors in preadolescent girls' externalizing behaviors? *Journal of Abnormal Child Psychology, 37,* 777-791.

Long, J. D., & Pellegrini, A. D. (2003). Studying change in dominance and bullying with Hierarchical Linear Models. *School Psychology Review*, *32*, 401–417.

Maccoby, E. E. (1990). Gender and relationships: A developmental account. *American Psychologist, 45,* 513-520

McDonald, K. L., Bowker, J. C., Rubin, K. H., Laursen, B., & Duchene, M. S. (2010). Developmental changes and gender differences in adolescents' perceptions of friendships. *Journal of Youth and Adolescence, 39,* 563-574.

Menesini, E. (1997). Behavioural Correlates of Friendship Status among Italian Schoolchildren *Journal of Social and Personal Relationships, 14,* 109-121

Miller-Johnson, S., Coie, J. D., Maumary-Gremaud, A., Lochman, J., & Terry, R. (1999). Relationship between childhood peer rejection and aggression and adolescent delinquency severity and type among African American youth. *Journal of Emotional and Behavioral Disorders, 7*, 137-146.

Mishna, F., Weiner, J., & Pepler, D., (2008). Some of my best friends – Experiences of bullying within friendships. *School Psychology International, 29,* 549-573

Moffitt, T. E., Caspi, A., Rutter, M., & Silva, P. A. (2001). Sex differences in antisocial behaviour: Conduct disorder, delinquency, and violence in the Dunedin Longitudinal Study. *Sex differences in antisocial behaviour: Conduct disorder, delinquency, and violence in the Dunedin Longitudinal Study*. New York, NY, US: Cambridge University Press

Murray-Close, D., & Crick, N. R. (2006). Mutual antipathy involvement: Gender and associations with aggression and victimization. *School Psychology Review, 35,* 472-492

Murray-Close, D., Ostrov, J. M., & Crick, N. R., (2007). A short-term longitudinal study of growth of relational aggression during middle childhood: Associations with gender, friendship intimacy, and internalizing problems. *Development and Psychopathology, 35,* 472-492

Neal, J.W. (2010). Social aggression and social position in middle childhood and early adolescence: Burning bridges or building them? *Journal of Early Adolescence, 30,* 122-137

Nelson, D. A., Robinson, C. C., Hart, C. H. (2005). Relational and Physical Aggression of Preschool-Age Children: Peer Status Linkages Across Informants. *Early Education and Development, 16*, 115-139

Newcomb**,** A. F, & Bagwell, C. L. (1995). Children's friendship relations: A meta-analytic review. *Psychological Bulletin, 117,* 306-347

Newcomb, A. F., Bukowski, W. M., & Bagwell, C. L. (1999). Knowing the sounds: Friendship as a developmental context. In A. W. Collins & B. Laursen (Eds,). *Relationships as developmental contexts.* (pp. 63-84)Mahwah, NJ, US: Lawrence Erlbaum

Newcomb, A. F., Bukowski, W. M., & Pattee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average sociometric status. *Psychological Bulletin, 113*, 99-128

Ollendick, T. H., Weist, M. D., Borden, M. C., & Greene, R. W. (1992). Sociometric status and academic, behavioral, and psychological adjustment: A five-year longitudinal study. *Journal of Consulting and Clinical Psychology, 60,* 80-87

Parker, J. G. & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology, 28,* 611-621.

Parker, J. G., & Seal, J. (1996). Forming, losing, renewing, and replacing friendships: Applying temporal parameters to the assessment of children's friendship experiences. *Child Development, 67,* 2248-2268.

Patterson, C. J., Kupersmidt, J. B., & Griesler, P. C. (1990). Children's perceptions of self and of relationships with others as a function of sociometric status. *Child Development, 61,* 1335-1349

Pellegrini, A. D., & Bartini**,** M**.** (2001). Dominance in early adolescent boys: Affiliative and aggressive dimensions and possible functions. *Merrill-Palmer Quarterly, 47,* 142-163

Phillipsen, L.C., 1999. Associations Between Age, Gender, and Group Acceptance and Three Components of Friendship Quality. *Journal of Early Adolescence* 19, 438-464

Poulin, F., & Boivin, M. (1999). Proactive and reactive aggression and boys' friendship quality in mainstream classrooms. *Journal of Emotional and Behavioral Disorders, 7,* 168-177

Poulin, F., & Boivin, M. (2000). The role of proactive and reactive aggression in the formation and development of boys' friendships. *Developmental Psychology, 36,* 233-240

Poulin, F., Cillessen, A. H. N., Hubbard, J. A., Coie, J. D., et al. (1997). Children's friends and behavioral similarity in two social contexts. *Social Development, 6*, 224-236

Poulin, F., Dishion, T. J., & Haas, E. (1999). The peer influence paradox: Friendship quality and deviancy training within male adolescent friendships. *Merrill-Palmer Quarterly, 45,* 42-61

Raffaelli, M. (1997). Young adolescents' conflicts with siblings and friends. *Journal of Youth and Adolescence, 26*, 539-558

Raudenbush, S. W. Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods. 2nd edition*. Newbury Park, CA: Sage.

Repacholi, B., Slaughter, V., Pritchard, M., & Gibbs, V. (2003). Theory of mind, Machiavellianism, and social functioning in childhood. In B. Repacholi & V. Slaughter (Eds.), *Individual differences in theory of mind: Implications for typical and atypical development*. (pp. 67-97). New York, NY, US: Psychology Press

Rook, K. S. (1984). The negative side of social interaction: Impact on psychological well-being**.** *Journal of Personality and Social Psychology, 46,* 1097-1108

Richard, J. F., & Schneider, B. H. (2005). Assessing friendship motivation during preadolescence and early adolescence. *Journal of Early Adolescence, 25,* 367-385

Rizzo, T. A. (1988). The relationship between friendship and sociometric judgments of peer acceptance and rejection. *Child Study Journal, 18*, 161-191

Robertson, D. L., et al.,(2010). Interpersonal competence configurations and peer relations in early elementary classrooms: Perceived popular and unpopular aggressive subtypes. *International Journal of Behavioral Development, 34*, 73-87

Rom, D. M. (1990). A sequentially rejective test procedure based on a modified Bonferroni inequality. *Biometrika, 77,* 663-665

Rose, A. J., & Asher, S. R. (1999). Children's goals and strategies in response to conflicts within a friendship. *Developmental Psychology, 35*, 69-79

Rose, A. J., & Rudolph, K. D. (2006). A review of sex differences in peer relationship processes: Potential trade-offs for the emotional and behavioral development of girls and boys. *Psychological Bulletin, 132,* 98-131

Rose, A. J., Swenson, L. P., & Carlson, W. (2004). Friendships of aggressive youth: Considering the influences of being disliked and of being perceived as popular. *Journal of Experimental Child Psychology, 88*, 25-45

Rotenberg, K. J., MacDonald, K. J., & King, E. V. (2004). The relation between loneliness and interpersonal trust during middle childhood. *Journal of Genetic Psychology, 165,* 233-249

Rubin, K. H., Parker, J. G., & Bukowski, W. (1998). Peer interactions, relationships, and groups. In W. Damon, William, & N. Eisenberg, Nancy (Eds.), *Handbook of child psychology, 5th ed.: Vol 3. Social, emotional, and personality development.* (pp. 619-700). Hoboken, NJ, US: John Wiley & Sons

Rubin, K. H., Fredstrom, B., Bowker, J. (2008). Future directions in…Friendship in childhood and early adolescence. *Social Development, 17,* 1085- 1096

Savin**-**Williams**,** R. C. (1979). Dominance hierarchies in groups of early adolescents. *Child Development, 50,* 923-935

Schneider**,** B. H. (1993). Cross-cultural comparison as doorkeeper in research on the social and emotional adjustment of children and adolescents. *Developmental Psychology, 34,* 793-797

Schneider, B. H., Fonzi, A., Tani, F., & Tomada, G. (1997). A cross-cultural exploration of the stability of children's friendships and predictors of their continuation. *Social Development, 6,* 322-339

Schneider, B. H., Tomada, G., Normand, S., Tonci, E., de Domini, P. (2008). Social support as a predictor of school bonding and academic motivation following the transition to Italian middle school. *Journal of Social and Personal Relationships, 25,* 287-310

Schwartz, S. H., & Ros, M. (1995). Value priorities in West European nations: A cross-cultural perspective. In G. Ben-Shakhar & A. Lieblich (Eds.). *Studies in psychology in honor of Solomon Kugelmass* (Vol. 36, pp. 322-347). Jerusalem, Israel: Magnes Press.

Selfhout, M. H. W, Branje, S. J. T, & Meeus, W. H. J. (2009). Developmental trajectories of perceived friendship intimacy, constructive problem solving, and depression from early to late adolescence. *Journal of Abnormal Child Psychology, 37,* 251-264

Selman, R. L. (1981). The development of interpersonal competence: The role of understanding in conduct. *Developmental Review, 1*, 401-422

Singer, J. (1998). Using SAS PROC MIXED to fit multilevel models, hierarchical models And individual growth models. *Journal of Educational and Behavioral Statistics, 24,* 323-355

Schmidt, M. E., & Bagwell, C. L. (2007). The protective role of friendships in overtly and relationally victimized boys and girls. *Merrill-Palmer Quarterly, 53,* 439-460

Shantz, C. U. (1987). Conflicts between children. *Child Development, 58,* 283-305

Sherman, A. M., Lansford, J. E., Volling, B. L. (2006). Sibling relationships and best friendships in young adulthood: Warmth, conflict, and well-being. *Personal Relationships, 13,* 151-165

Smith, R. L., Rose, A. J., & Schwartz-Mette, R. A. (2010). Relational and overt aggression in childhood and adolescence: Clarifying mean-level gender differences and associations with peer acceptance. *Social Development, 19,* 243-269

Snyder, J., Schrepferman, L., McEachern, A., Barner, S, Johnson K., & Provines, J. (2008). Peer deviancy training and peer coercion: dual processes associated with early-onset conduct problems. *Child Development, 79,* 252-268

Steenbeek, H., & van Geert, P. (2008). An empirical validation of a dynamic systems model of interaction: Do children of different sociometric statuses differ in their dyadic play? *Developmental Science11,* 253-281.

Strayer, F. F., & Strayer, J. (1976). An ethological analysis of social aggression and dominance relations among preschool children. *Child Development, 47,* 980–989

Sullivan, H.S. (1953). *The interpersonal theory of psychiatry*. New York: Norton

Sutton, J., Smith, P. K., & Swettenham, J. (1999). Social cognition and bullying: Social inadequacy or skilled manipulation? *British Journal of Developmental Psychology, 17,* 435-450

Swenson, L.P., & Rose A. J. (2009). Friends' knowledge of youth internalizing and externalizing adjustment: Accuracy, bias, and the influences of gender, grade, positive friendship quality and self-disclosure. *Journal of Abnormal Child Psychology, 37, 6,* 887-901.

Tabachnick, B. G., & Fidell, L. S. (2001). *Using Multivariate Statistics* (4th ed.). Toronto, On, CA: Allyn and Bacon.

Thibault, J. W., & Kelley, H. H. (1959). *The social psychology of groups.* New York, N.Y., U.S.: Wiley.

Tomada, G., & Schneider B., (1997). Relational aggression, gender, and peer acceptance: Invariance across culture, stability over time, and concordance among informants. *Developmental Psychology, 33,* 601-609

Tomada, G., Schneider, B. H., de Domini, P., Greenman, P. S., & Fonzi, A. (2005). Friendship as a predictor of adjustment following a transition to formal academic instruction and evaluation. *International Journal of Behavioral Development, 29,* 314-322

Triandis, H. C. (1995). *Individualism and collectivism.* Boulder, CO: Westview Press.

Uchino, B.N., Holt-Lunstad, J., Smith, T.W., & Bloor, L. (2004). Heterogeneity in social networks: A comparison of different models linking relationships to psychological outcomes. *Journal of Social and Clinical Psychology, 23,* 123-139

Uchino, B.N., Holt-Lunstad, J., Uno, D., & Flinders, J.B. (2001). Heterogeneity in the social networks of young and older adults: Prediction of mental health and cardiovascular reactivity during acute stress. *Journal of Behavioral Medicine*, *24*, 361-382

Underwood, M. K, Beron, K. J., & Rosen, L. H. (2009). Continuity and change in social and physical aggression from middle childhood through early adolescence. *Aggressive Behavior, 35,* 357-375

Vaillancourt, T., Brendgen, M., Boivin, M., & Tremblay, R. E. (2003). A longitudinal confirmatory factor analysis of indirect and physical aggression: Evidence of two factors over time? *Child Development, 74,*1628-1638

Verbeke, G., & Molenberghs, G. (2000). *Hierarchical linear models for longitudinal data*. New York, NY, US: Springer.

Waldrip, A M., Malcolm, K T., & Jensen-Campbell, L A. (2008). With a little help from your Friends: The Importance of High-Quality friendships on early adolescent adjustment. *Social Development, 17,* 832-852

Warman, D. M., & Cohen, R. (2000). Stability of aggressive behaviors and children's peer relationships. *Aggressive Behavior, 26,* 277-290

Way, N., & Greene, M. L. (2006). Trajectories of Perceived Friendship Quality During Adolescence: The Patterns and Contextual Predictors. *Journal of Research on Adolescence, 16,* 293-320

Weiss, R. S. (1974). The provisions of social relationships. In Z. Rubin (Ed.), *Doing unto others* (pp. 17–26). Englewood Cliffs, NJ: Prentice-Hall

West, B.T., Welch, K. B, Galecki, A. T. (2007). *Linear mixed models.* Boca Raton, FL, US: Chapman & Hall

Witkow, M. R., Bellmore, A. D., Nishina, A., Juvonen, J, & Graham, S. (2005). Mutual antipathies during early adolescence: More than just rejection. *International Journal of Behavioral Development, 29,* 209-218

Wojslawowicz Bowker, J. C., Rubin, K. H., & Burgess, K. B. (2006). Behavioral characteristics associated with stable and fluid best friendship patterns in middle childhood. *Merrill Palmer Quarterly, 52,* 671-693

Wright, R. E. (1995). Logistic Regression. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and Understanding Multivariate Statistics.* (pp. 217-245). Washington, D.C., US: American Psychological Association

Zakriski, A. L., & Coie, J. D. (1996). A comparison of aggressive-rejected and nonaggressive-rejected children's interpretations of self-directed and other-directed rejection. *Child Development, 67*, 1048-1070

Zarbatany, L., McDougall, P., & Hymel, S. (2000). Gender-differentiated experience in the peer culture: Links to intimacy in preadolescence. *Social Development, 9,* 62-79

Appendix A - Growth curve analyses of friendship quality over time (Cohort 1)

In these analyses, children who reported on the same friendship and children who reported on different friends throughout the course of the study were included. That is, children who had a friendship quality score at any time point were included. Analyses tracking the change in closeness for specific subgroups of children (e.g., children who reported on the same or different friends at *each* time point) were presented in Hypothesis 3. Considering the change in age and multiple data collection points, it was expected that children's friendship closeness would increase and that friendship conflict would decrease over time. The data analytic approach that I chose for this question was Hierarchical Linear Modelling.

Hierarchical Linear Models (HLMs), also known as growth curve modelling or linear mixed models, are multilevel models that allow the evaluation of change over multiple time points (called the Level 1 units) for a given individual and then allow the computation of the average degree of change across multiple individuals (the Level 2 units), the variance in the degree of change (slope) across individuals and the degree to which that change is affected my moderator variables (e.g., children who report on the same or different friendships) (Long & Pellegrini, 2003). As a result, each model consists of time-point and individual level equations

HLMs are basically an extension of traditional regression models that include correlated residual structures to account for repeated observations within individuals (Long & Pellegrini, 2003). An HLM model can be decomposed into fixed and random effects. Fixed effects do not vary from individual to individual and they refer to the average degree of change across individuals (e.g., average linear or quadratic changes).

Random effects vary from individual to individual and they consist of both the residuals from the fixed (group) effects and measurement error (Long & Pellegrini, 2003). It is possible to have unconditional or conditional models (Singer, 1998). Unconditional models refer to the linear or quadratic change in the variable of interest (e.g., friendship quality) whereas conditional models use a predictor of interest (e.g., gender or friendship quality) to see how the response (e.g., aggression) changes as a function of the predictor. Conditional models can include static (e.g., gender) and non-static (e.g., friendship quality) predictors.

Figures 9 and 10 depict the closeness and conflict means (transformed variable, actual values can found in Table 2) for children who reported on the same friend and children who reported on different friends across the study (the whole sample), and for boys and girls separately, as obtained prior to performing HLM to determine the functions (e.g., linear, quadratic) that should be modelled. It should be noted that the data at this point are not separated between ratings of the same, continuing relationships and ratings of replacement friendships. In general, in Figures 9 and 10, the dominant trends are linear, but there are quadratic trends as well. Because standard HLMs assume that the response or dependent variable is normally distributed (Garson, 2010; Verbeke & Molenberghs, 2000), the square-root transformed closeness and conflict scores were used in all growth curve analyses.

As mentioned, HLMs consist of multilevel models (Long & Pellegrini, 2003). The Level 1 equation refers to the change over time for each individual (linear and/or quadratic). Because Figure 9 depicts linear and quadratic change for closeness, the

individual-level or Level 1 model testing the linear and quadratic trends, respectively, are:

$$DV = \beta_0 + \beta_1 (\text{time point}) + e,$$

$$DV = \beta_0 + \beta_1 (\text{time point}) + \beta_2 (\text{time point squared}) + e$$

"DV" is the score on the dependent variable (i.e., closeness or conflict, depending which set analyses was completed) for a given friendship at a given time point. Time point (linear trend) was centered and coded as -1.5, -0.5, 0.5, 1.5 and time point squared (quadratic trend) was coded as 2.25, 0.25., 0.25, 2.25 (time point squared) (Raudenbush & Bryk, 2002). The parameter β_0 is intercept for a given individual, β_1 is the degree of linear trend for a given individual, and β_2 is the degree of quadratic trend for a given individual. The e reflects measurement error and the residuals associated with the trajectory for each individual.

The second level refers to the nature of group change, that is, changes across all individuals. At Level 2, the parameters obtained for individuals are treated as response variables. Keeping in mind the individual-level model for closeness, the group level model equations for the linear and quadratic model are:

$$\beta_0 = \gamma_{00} + u_0$$

$$\beta_1 = \gamma_{10} + u_1$$

$$\beta_2 = \gamma_{20} + u_2$$

Gamma, γ, in each equation, refers to the group level intercept and represents the average across all individuals; γ_{00} refers to the group mean intercept (i.e., the mean initial status), γ_{10} is the group mean linear change, and γ_{20} is the group mean quadratic change (Long & Pellegrini, 2003). The *u* values represent the residuals of individuals from the

group averages. The gammas represent the fixed effects, while the *u* values represent the random effects.

Authors such as West and colleagues (2007) indicate that it is logical to build from the simplest to more complex models. Accordingly, it was not until a linear and/or quadratic trend was found to vary significantly across individuals in the unconditional model, that a conditional model was performed in later analyses (e.g., continuing and replacement friendships) where a continuing/replacement variable was tested as a potential explanation of this variability. This was done by adding the continuing/replacement variable as a predictor in each of the level 2 equations.

All growth curve models were tested with SAS. As in other research in this area (e.g., Murray-Close et al., 2007), the variance and covariance structure of the error terms was unstructured. This method is typical in longitudinal designs as differences in variances are to be expected (Singer, 1998; Verbeke & Molenberghs, 2000). Restricted maximum likelihood (REML) methods were used to test the overall model significance in which an intercept-only model was compared to an unconditional or conditional model to see if the unconditional/conditional model was a good fit to the data (Singer, 1998; West, et al., 2007). The -2 log-likelihood values were used to compare the different models. The maximum likelihood (ML) was used when comparing models with different fixed effects (Singer, 1998, West et al., 2007).

The results of the closeness model indicated that a model including the intercept, linear and quadratic terms was a better fit to the data than a model with only a linear term, χ^2 (3) = 9.2, $p < .05$. The estimates were: 2.96 ($p < .0001$) for the intercept, 0.18 ($p < .0001$) for the linear term, and 0.07 ($p < .001$) for the quadratic term. Specifically, the

positive values for the linear and quadratic estimates indicate that children's closeness increased over the course of the study. A model using the untransformed closeness variable was analyzed but similar results were not achieved (i.e., the quadratic term was not significant). As a result, all interpretation is based on the results of the transformed closeness model. Solving the values for closeness (transformed) at each time point using simple algebra revealed that children's closeness increased by 0.54 units across the study. Please recall that at this stage that the analysis does not discriminate participants who remained friends with the same individual from those who change friends, which is considered in Hypothesis 3. The results support the change in friendship quality over time. Children's closeness increased over time.

The variance of the residual in the linear/quadratic model for closeness (transformed) was significant as well (estimate = 0.30, $p < .0001$), which showed that the steepness of the slope representing change in closeness over time varies significantly across individuals, justifying the addition of moderators that could explain the steepness of the slope (Singer, 1998). The covariance of the intercept and slope (linear) terms were significant as well, which revealed that there were different initial levels of closeness for children (i.e., some started high, and some low) and that there was different rates of change across time. The interaction between the covariance of the intercept and slope was not significant.

The change in conflict over time was examined next. Again, children who reported on the same or a different friend over the study (i.e., had a conflict score at any time point) were included in the analysis. Children who represented different groups (e.g., continuing or replacement friend) were considered in later analyses. From Figure

10, children's conflict scores appear to decrease linearly over time. As with closeness, an unconditional model including a linear term for time (Singer, 1998) was modelled for the transformed conflict variable. The model for conflict was not significantly different from an intercept-only model, $\chi^2(2) = 3.60$, $p > .05$, nor was a model including the quadratic term ($p > .05$). Despite the fact that the linear model for conflict was not significantly different from an intercept-only model, the linear estimate was -0.05 ($p < .01$), which means that children's conflict decreased over time.

Table 1

Factor loadings (standardized regression weights) for the closeness and conflict items at Times 1-4 (final model) (item number in parentheses) (Cohort 1)

Closeness	Time 1	Time 2	Time 3	Time 4
	(α= .79)	(α= .77)	(α= .80)	(α= .79)
"Tells others to stop teasing" (16)	.60	.61	.75	.79
"Makes others stop being mean" (13)	.59***	.57***	.73***	.77***
"Tells good a sports" (9)	.56***	.46***	.36***	.32***
"Say you're good in class" (7)	.56***	.59***	.37***	.44***
"Makes feel better if teacher yelled" (10)	.52***	.59***	.66***	.63***
"Friend says give back" (1)	.46***	.50***	.71***	.67***
"Mostly do things with you" (15)	.45***	.46***	.37***	.31***
"Says you're his/her friend" (3)	.43***	.33***	.30***	.10
"Mostly plays with you" (12)	.42***	.19**	.21**	.29***
"Talk when feel bad" (8)	.39***	.45***	.49***	.52***
"Feel happy with friend" (4)	.37***	.35***	.45***	.26***
"Feel sad if not at school" (20)	.37***	.33***	.42***	.34***
"You like friend more than others" (21)	.34***	.19**	.29***	.27***
Conflict	**Time 1**	**Time 2**	**Time 3**	**Time 4**
	(α= .62)	(α= .56)	(α= .46)	(α= .58)
"Makes fun of you" (23)	.67	.39	.68	.79
"Bosses you around" (17)	.63***	.99***	.25***	.50***
"Says he (she) won't be your friend" (11)	.50***	.41***	.21**	.43***

*** $p < .00$; ** $p < .01$.

Table 2

Means and standard deviations for closeness and conflict scores for the entire sample, boys, and girls at each time point (square-root transformed variables in parentheses (Cohort 1)

		T1	T2	T3	T4
Entire Sample		(*n*=266)	(*n*=288)	(*n*=219)	(*n*=225)
Closeness	*M*	17.63 (2.87)	19.02 (2.88)	19.14 (3.13)	20.04 (3.41)
	SD	5.14 (0.89)	4.52 (0.84)	4.72 (0.87)	4.46 (0.86)
Conflict	*M*	1.14 (0.77)	1.02 (0.72)	0.88 (0.62)	0.85 (0.62)
	SD	1.27 (0.74)	1.18 (0.71)	1.14 (0.70)	1.09 (0.68)
		T1	T2	T3	T4
Boys		(*n*=126)	(*n*=149)	(*n*=101)	(*n*=103)
Closeness	*M*	17.16 (2.78)	18.06 (2.70)	18.34 (2.98)	19.43 (3.30)
	SD	4.93 (0.85)	4.60 (0.82)	4.94 (0.86)	4.85 (0.91)
Conflict	*M*	1.06 (0.75)	1.01 (0.73)	0.90 (0.64)	0.84 (0.60)
	SD	1.20 (0.71)	1.12 (0.69)	1.12 (0.70)	1.13 (0.70)
		T1	T2	T3	T4
Girls		(*n*=140)	(*n*=139)	(*n*=118)	(*n*=122)
Closeness	*M*	18.06 (2.95)	20.05 (3.08)	19.83 (3.26)	20.57 (3.50)
	SD	5.30 (0.92)	4.21 (0.83)	4.43 (0.86)	4.05 (0.81)
Conflict	*M*	1.21 (0.79)	1.02 (0.70)	0.86 (0.61)	0.86 (0.64)
	SD	1.34 (0.77)	1.25 (0.73)	1.17 (0.70)	1.06 (0.68)

Note. *M*= Mean. *SD* = Standard Deviation.

Table 3

Means and standard deviations for children's aggression nominations at each time point (Cohort 1)

		T1	T2	T3	T4
Entire Sample		*n*=479	*n*=484	*n*=464	*n*=459
Aggression	*M*	1.06	1.37	1.44	1.44
	SD	0.65	0.75	0.72	0.75
Aggsqrt	*M*	0.98	1.13	1.16	1.16
	SD	0.32	0.31	0.30	0.30
Boys		*n*=245	*n*=248	*n*=244	*n*=240
Aggression	*M*	1.18	1.60	1.60	1.61
	SD	0.74	0.85	0.81	0.87
Aggsqrt	*M*	1.03	1.22	1.23	1.22
	SD	0.34	0.33	0.32	0.32
Girls		*n*=234	*n*=236	*n*=220	*n*=219
Aggression	*M*	0.96	1.14	1.27	1.25
	SD	0.52	0.54	0.57	0.53
Aggsqrt	*M*	0.93	1.04	1.10	1.09
	SD	0.30	0.31	0.27	0.25

Note. For simplicity, the transformed aggression variable (aggsqrt) is presented on this table.

Table 4

Correlations among the study variables (Cohort 1) (girls above the diagonal, boys below the diagonal)

	Close1	Con1	Close2	Con2	Close3	Con3	Close4	Con4	Agg1	Agg2	Agg3	Agg4
Close1	-	-.45**	.58**	-.13	.49**	-.37**	.43**	-.33**	-.04	.09	.16	.12
Con1	-.28*	-	-.30**	.25*	-.23	.38**	-.39**	.32**	.09	.16	-.11	-.05
Close2	.50**	-.12	-	-.21*	.49**	-.21	.36**	-.28**	-.09	.16	.09	.18
Con2	-.12	.37**	-.22**	-	.01	.36**	-.14	.38**	.06	.10	-.03	-.03
Close3	.44**	-.20	.63**	-.09	-	-.33**	.51**	-.11	.08	.20*	.24*	.22*
Con3	-.01	.26**	-.07	.22	-.25*	-	-.20	.31**	-.02	-.10	-.03	.08
Close4	.40**	-.07	.58**	-.16	.47**	-.42**	-	-.45**	-.08	.05	.04	.12
Con4	-.10	.37**	-.15	.29*	-.05	.37**	-.21*	-	-.01	-.06	.00	.04
Agg1	.07	-.01	.13	.03	.08	-.11	.00	-.09	-	.37**	.28**	.37**
Agg2	.24**	-.10	.07	.10	.20	-.01	-.08	.08	.56**	-	.35**	.36**
Agg3	.18	-.06	.03	-.01	.15	-.01	-.06	-.02	.60**	.61**	-	.50**
Agg4	.20*	-.03	.16	.01	.22*	.03	-.03	.15	.53**	.57*	.74**	-

* = p <.05; ** = p <.01.

Table 5

Means and standard deviations for Social Support and Negative Interactions for the entire sample, boys, and girls at Times 1 and 3 (Cohort 2)

		T1	T3
Entire Sample		(n = 397)	(n = 407)
Social Support	*M*	117.91	116.93
	SD	18.36	17.78
Negative Interactions	*M*	27.52	26.93
	SD	9.41	9.39
		T1	T3
Boys		(n = 205)	(n = 211)
Social Support	*M*	112.33	111.60
	SD	18.65	17.49
Negative Interactions	*M*	28.09	27.62
	SD	9.59	9.39
		T1	T3
Girls		(n = 192)	(n = 196)
Social Support	*M*	123.86	122.68
	SD	16.07	16.27
Negative Interactions	*M*	26.92	26.19
	SD	9.20	9.89

Table 6

Correlations among the study variables (Cohort 2)(girls above the diagonal, boys below the diagonal)

	Close1	Con1	Close3	Con3	O.Agg1	O.Agg2	O.Agg3	R.Agg1	R.Agg2	R.Agg3
Close1	-	-.05	.44**	-.12	.06	-.03	.08	-.03	-.01	.06
Con1	-.04	-	.03	.35**	.01	-.02	.04	.03	-.09	-.07
Close3	.56**	.09	-	-.21**	.11	.02	.02	-.01	.03	.14
Con3	.05	.33**	.12	-	-.06	-.05	-.07	.05	-.07	-.10
O.Agg1	-.06	-.01	.03	-.11	-	.34**	.24**	.44**	.29**	.19**
O.Agg2	-.00	.07	.03	.02	.53**	-	.40**	.22**	.38**	.35**
O.Agg3	-.02	.03	.04	.04	.53**	.79**	-	.14**	.22**	.49**
R.Agg1	-.08	-.08	.01	.03	.61**	.26**	.33**	-	.26**	.13
R.Agg2	.03	.12	.06	-.01	.41**	.67**	.60**	.42**	-	.44**
R.Agg3	.02	.11	.05	.03	.39**	.63**	.75**	.36**	.72**	-

* = $p < .05$; ** = $p < .01$

Table 7

Friendship satisfaction means amongst each friendship quality group at each time point (C1= Cohort 1 & C2 = Cohort 2)

	Satisfaction											
	Time 1				Time 2		Time 3				Time 4	
	Boys		Girls		Boys	Girls	Boys		Girls		Boys	Girls
	C1	C2	C1	C2	C1		C1	C2	C1	C2	C1	
Group												
High Closeness/High Conflict	5.12 (1.33)	19.59 (1.60)	6.00 (0.00)	20.65 (0.86)	5.77 (0.60)	6.00 (.00)	5.75 (0.46)	19.58 (1.26)	6.00 (.00)	20.33 (1.11)	6.00 (.00)	6.00 (.00)
High Closeness/Low Conflict	5.95 (0.22)	20.55 (0.71)	5.90 (0.32)	20.79 (0.49)	6.00 (0.01)	6.00 (.00)	6.00 (.00)	20.63 (0.74)	6.00 (0.01)	20.67 (0.66)	6.00 (.00)	5.94 (0.24)
Low Closeness/High Conflict	5.41 (1.01)	16.20 (2.67)	4.82 (1.16)	17.08 (2.39)	5.19 (1.08)	5.00 (1.26)	4.85 (0.99)	15.30 (1.89)	5.38 (0.96)	16.63 (2.22)	4.73 (1.28)	5.13 (1.19)
Low Closeness/Low Conflict	5.50 (0.85)	16.60 (3.83)	5.56 (0.73)	17.69 (2.43)	5.77 (0.60)	5.69 (0.75)	5.50 (1.07)	16.79 (2.57)	5.78 (0.44)	18.64 (2.01)	5.77 (0.60)	5.90 (0.32)
Average Closeness/Conflict	5.59 (0.82)	18.31 (1.86)	5.80 (0.45)	19.70 (1.32)	5.82 (0.39)	5.79 (0.59)	5.57 (0.79)	18.88 (1.74)	5.91 (0.30)	19.12 (1.57)	6.00 (.00)	5.90 (0.66)

Note. Standard deviation in parentheses. Again, for simplicity, the terms closeness and conflict rather than Social Support and Negative Interactions are used for Cohort 2.

Table 8

Best-friend and friend stability percentage from Times 1 to 2, 2 to 3, and 3 to 4 as a function of each friendship quality group at Times 1, 2 and 3, respectively

	Time 1 to 2	
Time 1	Best-friend	Friend
Whole Sample (*n*=260, 134 girls)	61%	76%
High Closeness High Conflict (*n*=19, 12 girls)	53%	74%
High Closeness Low Conflict (*n*=56, 34 girls)	63%	77%
High Conflict Low Closeness (*n*=43, 27 girls)	63%	70%
Low Closeness Low Conflict (*n*=24, 11 girls)	50%	67%
Average Closeness and Conflict (*n*=49, 26 girls)	59%	73%
	Time 2 to 3	
Time 2	Best-Friend	Friend
Whole Sample (*n*=243, 115 girls)	63%	80%
High Closeness High Conflict (*n*=28, 13 girls)	61%	65%
High Closeness Low Conflict (*n*=59, 33 girls)	67%	79%
High Conflict Low Closeness (*n*=29, 15 girls)	47%	89%
Low Closeness Low Conflict (*n*=25, 12 girls)	50%	68%
Average Closeness and Conflict (*n*=25, 14 girls)	65%	87%
	Time 3 to 4	
Time 3	Best-Friend	Friend
Whole Sample (*n*=215, 116 girls)	67%	83%
High Closeness High Conflict (*n*=15, 6 girls)	71%	93%
High Closeness Low Conflict (*n*=51, 26 girls)	59%	78%
High Conflict Low Closeness (*n*=30, 17 girls)	64%	75%
Low Closeness Low Conflict (*n*=21, 11 girls)	56%	94%
Average Closeness and Conflict (*n*=19, 12 girls)	71%	88%

Note. All friendship quality groups had some missing friendship stability data at each time point. As a result, the stability percentage is based on the available data and not on the absolute n's in each group.

Table 9

Best friend and friend stability from Times 1 to 3 and Times 1 to 4 based on friendship quality at Time 1

Time 1	Time 1 to 3 Best-friend	Time 1 to 3 Friend
Whole Sample (*n*= 213, 111 girls)	24%[5]	52%
High Closeness High Conflict (*n*=11, 6 girls)	20%[6]	36%
High Closeness Low Conflict (*n*=33, 21 girls)	35%	48%
High Conflict Low Closeness (*n*=35, 18 girls)	29%	54%
Low Closeness Low Conflict (*n*=15, 5 girls)	12%	27%
Average Closeness and Conflict (*n*=14, 5 girls)	57%	71%

Time 1	Time 1 to 4 Best-friend	Time 1 to 4 Friend
Whole Sample (*n*=206, 113 girls)	18%	35%
High Closeness High Conflict (*n*=13, 8 girls)	18%	31%
High Closeness Low Conflict (*n*=33, 22 girls)	24%	39%
High Conflict Low Closeness (*n*=28, 15 girls)	18%	39%
Low Closeness Low Conflict (*n*=14, 5 girls)	6%	14%
Average Closeness and Conflict (*n*=12, 5 girls)	31%	58%

[5] The total sample for best friend and friend stability differs because there was some missing data. The *n* that is presented reflects the number of children who had friendship stability data.

[6] For each friendship quality group, the total sample for best friend and friend stability differs because there was some missing data. The *n* that is presented in the table reflects the number of children who had friendship stability data because this was used for the logistic regression analyses

Table 10

Summary of logistic regression analyses predicting friendship stability at Times 1 to 2, 2 to 3, and 3 to 4 with gender, closeness and conflict, and the interaction between closeness, conflict, and gender at Times 1, 2 and 3, respectively

				95% Confidence Interval for *OR*		
Variables	***B***	***Wald Test***	***Odds Ratio***	*Upper*	*Lower*	*p*
DV: Friendship stability at Time 1-2; IV: Friendship quality at Time 1						
Step 1: Gender	-3.07	1.58	0.05	5.58	0.04	.21
Step 2: Closeness	-0.02	0.11	0.98	1.12	0.86	.74
Conflict	0.41	0.52	1.51	4.65	0.49	.47
Step 3: Close*Gender	-0.05	1.94	0.95	1.02	0.88	.16
Conf*Gender	-1.99	2.64	0.14	1.51	0.01	.11
Close*Conf	-0.05	1.94	0.81	1.02	0.88	.16
Step 4: Three-way int.	0.15	3.71	1.16	1.35	0.99	.05
Intercept	3.35	2.76	28.40			
Full model: χ^2 (7, n = 129) = 10.82, p =.15						
DV: Friendship stability at Time 2-3; IV: Friendship quality at Time 2						
Step 1: Gender	5.11	3.66	164.82	0.88	30769.32	.06†
Step 2: Closeness	-0.16	3.42	0.86	1.01	0.73	.06†
Conflict	-2.47	2.45	0.09	1.87	0.01	.11
Step 3: Close*Gender	0.23	2.96	1.26	1.63	0.97	.09†
Conf*Gender	3.25	3.01	25.86	1017.31	0.66	.08†
Close*Conf	0.13	2.66	1.13	1.32	0.98	.01
Step 4: Three-way int.	-0.14	2.31	0.87	1.04	0.72	.12
Intercept	-2.75	1.81	0.06			
Full model: χ^2 (7, n = 123) =9.08, p = .25						
DV: Friendship stability at Time 3-4; IV: Friendship quality at Time 3						
Step 1: Gender	-2.55	0.76	0.08	23.74	0.01	.38
Step 2: Closeness	-0.01	0.02	0.89	1.15	0.85	.99
Conflict	0.99	0.79	2.71	24.27	0.30	.37
Step 3: Close*Gender	0.06	0.15	1.06	1.41	0.80	.30
Conf*Gender	1.46	0.73	4.31	122.17	0.15	.39
Close*Conf	-0.08	1.07	0.94	1.06	0.83	.30
Step 4: Three-way int.	-0.09	0.68	0.92	0.75	1.13	.41
Intercept	-0.20	0.02	0.82			
Full model : χ^2 (7, n = 111) =17.53, p = .01						

Note. * = $p < .05$; † = $p < .10$.

Table 11

Summary of logistic regression analyses predicting friendship stability at Time 3 to 4 with gender, closeness and conflict, and the interaction between closeness, conflict, and gender at Time 3 (reduced model)(Cohort 1)

				95% Confidence Interval for *OR*		
Variables	***B***	***Wald Test***	***Odds Ratio***	*Upper*	*Lower*	*p*
DV: Friendship stability at Time 3-4; IV: Friendship quality at Time 3						
Step 1: Gender	-1.10	0.26	0.33	23.56	0.01	.61
Step 2: Closeness	0.01	0.04	1.01	1.17	0.88	.85
Conflict	1.62	3.47	5.04	27.66	0.92	.06†
Step 3: Close*Gender	-0.21	0.04	0.98	1.21	0.80	.84
Conf*Gender	0.12	0.06	1.12	2.86	0.44	.81
Close*Conf	-0.10	4.33	0.90	0.82	0.99	.04*
Intercept	0.34	1.01	1.10			

Reduced model: χ^2 (6, n = 111) = 16.82, p = .01
Step: χ^2 (3, n = 111) = 6.97, p = .07
Cox Snell R^2 = 0.14; Nagelkerke R^2 = 0.20
ΔR^2 Cox Snell = .05; ΔR^2 Nagelkerke = 0.08

Note. * = $p < .05$; † = $p < .10$.

Table 12

Predicted friendship instability probabilities at Time 3 to 4 for each friendship quality group at Time 3 for boys and for girls

	Friendship Instability T3-T4	
Friendship Quality T3	Boys	Girls
Full Sample	.18	.34
High Closeness/High Conflict	.03	.10
High Closeness/Mean Conflict	.07	.25
High Closeness/Low Conflict	.12	.41
Mean Closeness/High Conflict	.10	.21
Mean Closeness/Mean Conflict	.11	.32
Mean Closeness/Low Conflict	.13	.40
Low Closeness/High Conflict	.25	.41
Low Closeness/Mean Conflict	.18	.39
Low Closeness/Low Conflict	.13	.38

Figure 1. Closeness means (transformed) over time for girls' continuing and replacement friendship groups (Cohort 1)

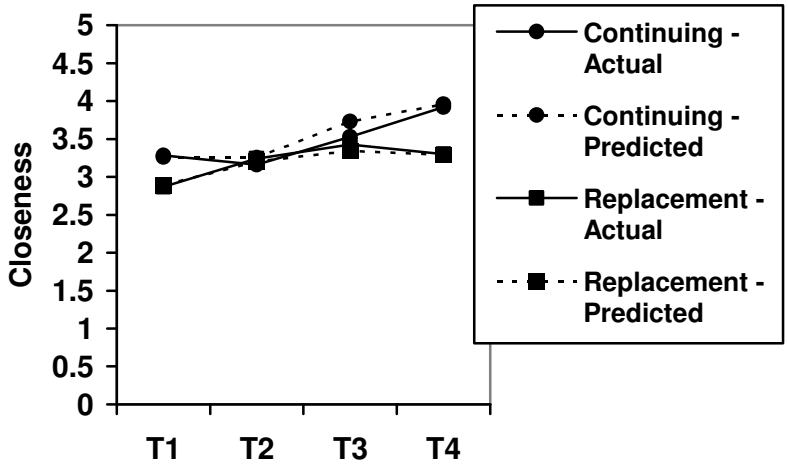

Figure 2. Closeness means (transformed) over time for boys' continuing and replacement friendship groups (Cohort 1)

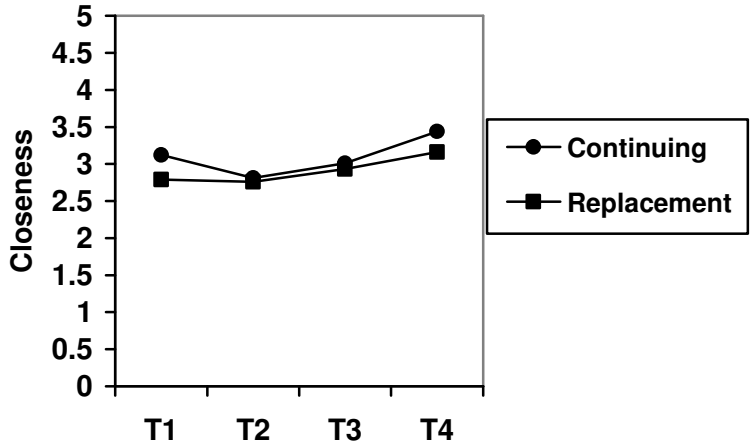

Figure 3. Conflict means (transformed) over time for boys' continuing and replacement friendship groups (Cohort 1)

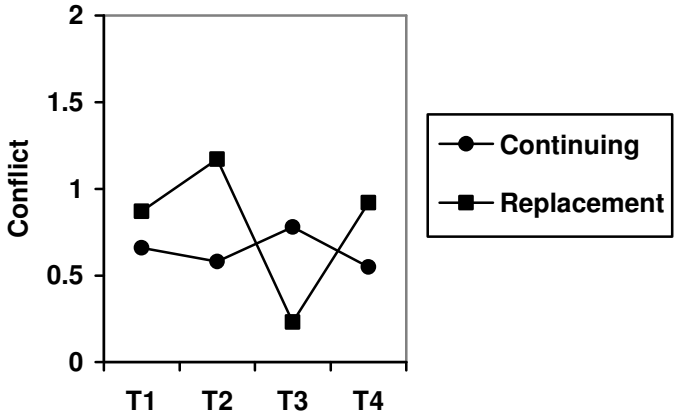

Figure 4. Conflict means (transformed) over time for girls' continuing and replacement friendship groups (Cohort 1)

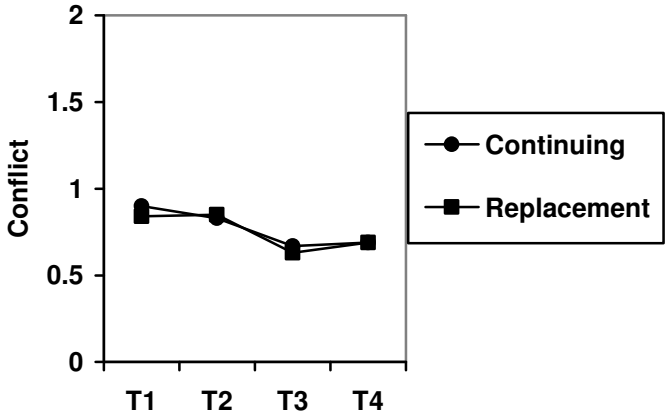

Table 13

Parameter estimates for the growth in closeness for the continuing and replacement friendship groups (transformed variable)(Cohort 1)

Parameter	Estimate		*df*		*F*-value	
	Boys	Girls	Boys	Girls	Boys	Girls
γ_{00} :Intercept	2.87***	3.34***	1, 26	1, 36	159.94	413.36
γ_{10} :Linear	.13	.23***	1, 26	1, 36	1.99	13.03
γ_{20} :Quadratic	.18*	.12†	1, 23	1, 34	5.27	3.02
γ_{30} :Cont/Rep Friend	-.02	-.05	1, 13	1, 23	0.01	0.04
γ_{40} :Lin* Cont/Rep Friend	.00	-.10	1, 13	1, 23	0.00	1.09
γ_{50} :Quad* Cont/Rep Friend	-.13	-.21†	1, 13	1, 23	1.33	4.33

Note. ***=p <.001; * = p <.05; † = p <.10. Cont/Rep = Continuing/Replacement.

Figure 5. Plot of difference in closeness over time in continuing friendships.

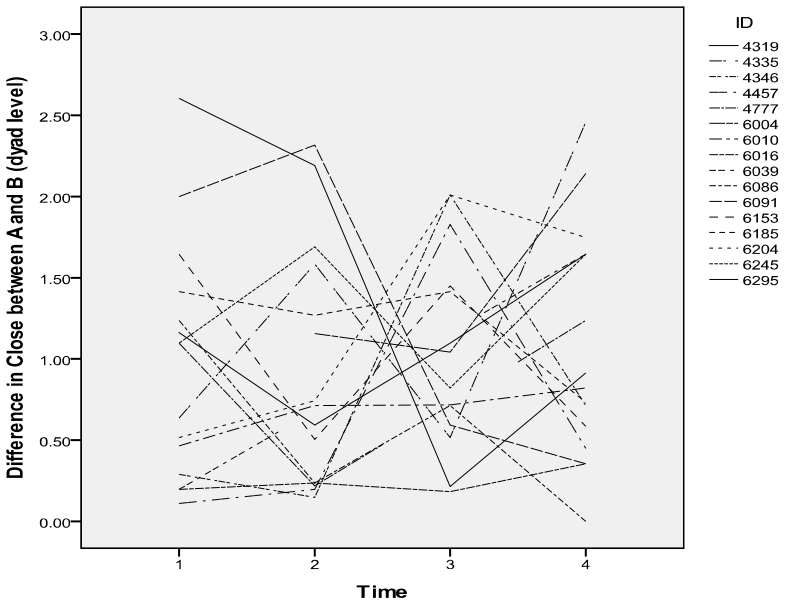

Table 14

Parameter estimates for the change in closeness (transformed) between aggressive and nonaggressive boys (Cohort 1)

Parameter	Estimate	*df*	*F*-value
γ_{00} :Intercept	2.76***	1, 100	861.67
γ_{10} : Time	.22***	1, 73	26.13
γ_{20} : Time_quad	.11**	1, 38	7.50
γ_{30} : Aggression_status	.56	1, 21	4.02
γ_{40} : Aggression_status*time	-.39*	1, 21	7.16

Note. ***=p <.001. ** = p <.01. * = p <.05.

Figure 6. Actual and predicted closeness values for aggressive and nonaggressive boys (Cohort 1)

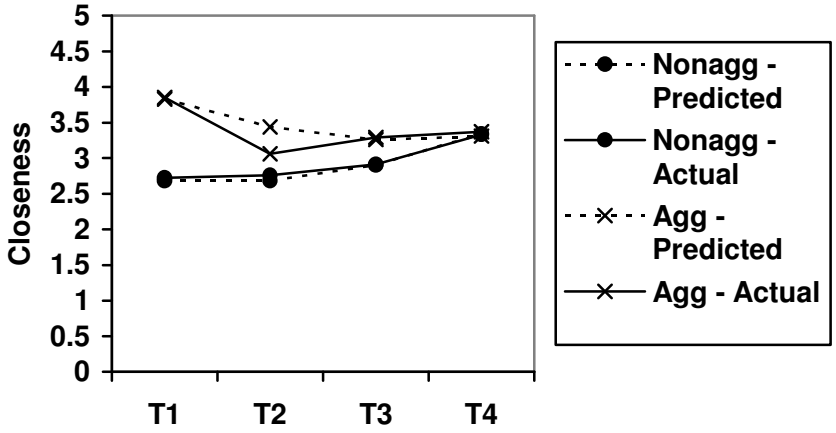

Table 15

Time 1 and Time 3 Social Support and Negative Interactions means for each aggression group (at Time 1)

		Time 1				Time 3			
		SS		NI		SS		NI	
Group		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
High Overt/High Relational	*M*	110.50	127.67	26.95	32.67	109.98	125.00	27.14	29.33
	SD	17.02	29.16	8.06	11.66	15.28	17.35	7.55	11.72
High Overt/Low Relational	*M*	110.26	127.00	28.78	19.00	111.11	128.50	27.44	13.00
	SD	20.66	19.80	12.05	0.00	25.76	17.68	9.29	5.66
Low Overt/High Relational	*M*	107.00	119.03	30.22	27.83	112.78	119.47	30.33	28.47
	SD	20.66	19.47	7.51	8.24	13.34	20.68	9.31	7.91
Low Overt/Low Relational	*M*	114.78	124.84	27.57	26.98	111.67	123.62	27.39	25.38
	SD	17.71	14.83	9.25	9.20	17.53	15.23	9.21	9.49

Each aggression group was based on 0.5 SD above the mean from the overt or relational aggression peer nominations.

Figure 7. Children's aggression over time in Cohort 1 (entire sample, boys, & girls; untransformed variables)

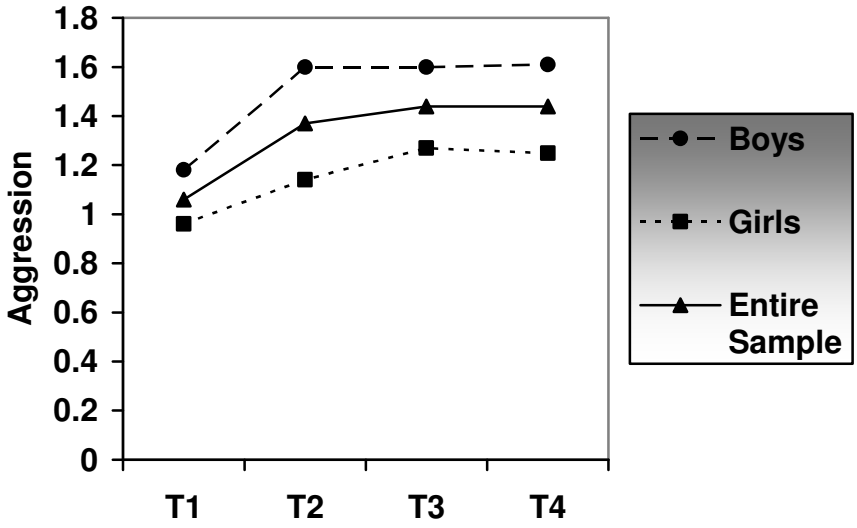

Table 16

Parameter estimates for the relationship between closeness and conflict on aggression (transformed) for boys and girls (Cohort 1)

Parameter	Estimate		*df*		*F*-value	
	Boys	Girls	Boys	Girls	Boys	Girls
γ_{00} : Intercept	1.03***	.80***	1, 210	1, 213	178.76	157.56
γ_{10} : Closeness_sqrt	.03	.07*	1, 146	1, 160	1.48	11.82
γ_{20} : Conflict_sqrt	.02	.09	1, 58	1, 82	0.08	2.31
γ_{30} : Closeness_sqrt*Conflict_sqrt	.01	-.01	1, 47	1, 56	0.12	0.48

Note. ***=p <.001. * = p <.05.

Table 17

Overt and relational aggression means and standard deviations (in parentheses) amongst each friendship quality group at Times 1 and 3 (Cohort 2)

	Time 1				Time 3			
	Overt		Relational		Overt		Relational	
Group	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
High Closeness/High Conflict	0.81	-0.43	0.18	0.04	0.44	-0.45	0.36	-0.13
	(1.23)	(0.35)	(1.06)	(1.03)	(1.16)	(0.16)	(1.14)	(0.83)
High Closeness/Low Conflict	0.35	-0.33	0.01	-0.02	0.17	-0.25	0.14	0.06
	(1.28)	(0.64)	(0.99)	(0.73)	(1.06)	(0.55)	(0.97)	(0.92)
Low Closeness/High Conflict	0.28	-0.34	-0.02	-0.47	0.16	-0.50	-0.16	-0.43
	(0.99)	(0.37)	(0.63)	(0.64)	(1.06)	(0.26)	(0.85)	(0.70)
Low Closeness/Low Conflict	0.53	-0.49	0.09	-0.31	0.16	-0.28	0.03	-0.44
	(1.26)	(0.44)	(1.22)	(0.57)	(1.21)	(0.81)	(1.20)	(0.63)
Average Closeness/Conflict	0.73	-0.46	0.78	-0.34	0.49	-0.36	0.13	-0.27
	(1.29)	(0.30)	(1.31)	(0.51)	(1.35)	(0.51)	(1.22)	(0.61)

Note. The *ns* at each time point reflect the number of children classified into each group, and the means reflect concurrent friendship quality and aggression.
Note. The terms closeness and conflict are used rather than social support and negative interactions in order to remain consistent with Cohort 1.

Table 18

Regression analyses of overt aggression (Time 2 and 3) predicted by friendship quality (Time 1) (Cohort 2)

	Overt T2			Overt T3		
	$F\Delta$	$R^2\Delta$	β	$F\Delta$	$R^2\Delta$	β
Step 1	101.18**	.34**		110.29**	.36**	
Agg T1			.55**			.53**
Gender			.16†			.29**
Step 2	0.91	.00		0.57	.00	
SS			.001			.001
NI			.01			.004
Step 3	3.05*	.02*		2.68*	.01*	
SS X NI			.001*			.001**
SS X Gender			.01			.000
NI X Gender			.02*			.01
Step 4	4.03*	.01*		2.77†	.004†	
3-way interaction			.001*			.001†

F (model) final step T1= 109.71
Total R^2 T1 = .37
F (model) final step T3= 116.31
Total R^2 T3 = .37

Note. * = $p < .05$. ** = $p < .01$. SS=Social Support, NI=Negative Interactions.

Table 19

Regression analyses of relational aggression (Time 2 and 3) predicted by friendship quality (Time 1)(Cohort 2)

	Relational T2			Relational T3		
	FΔ	$R^2\Delta$	β	FΔ	$R^2\Delta$	β
Step 1	36.42**	.16**		21.61**	.10**	
Agg T1			.35**			.26**
Gender			.30**			.28**
Step 2	0.50	.00		0.82	.004	
SS			.002			.003
NI			.003			.004
Step 3	1.77	.01		0.84	.01	
SS X NI			.000			.000
SS X Gender			.004			-.001
NI X Gender			.02*			.02
Step 4	0.81	.002		1.90	.004	
3-way interaction			.001			.001

F (model) final step T1= 39.50
Total R^2 T1 = .17
F (model) final step T3= 25.17
Total R^2 T3 = .12

Note. * = $p < .05$. ** = $p < .01$. SS=Social Support, NI=Negative Interactions.

Figure 8. Aggression at Time 2 based on friendship quality at Time 1 (Cohort 2)

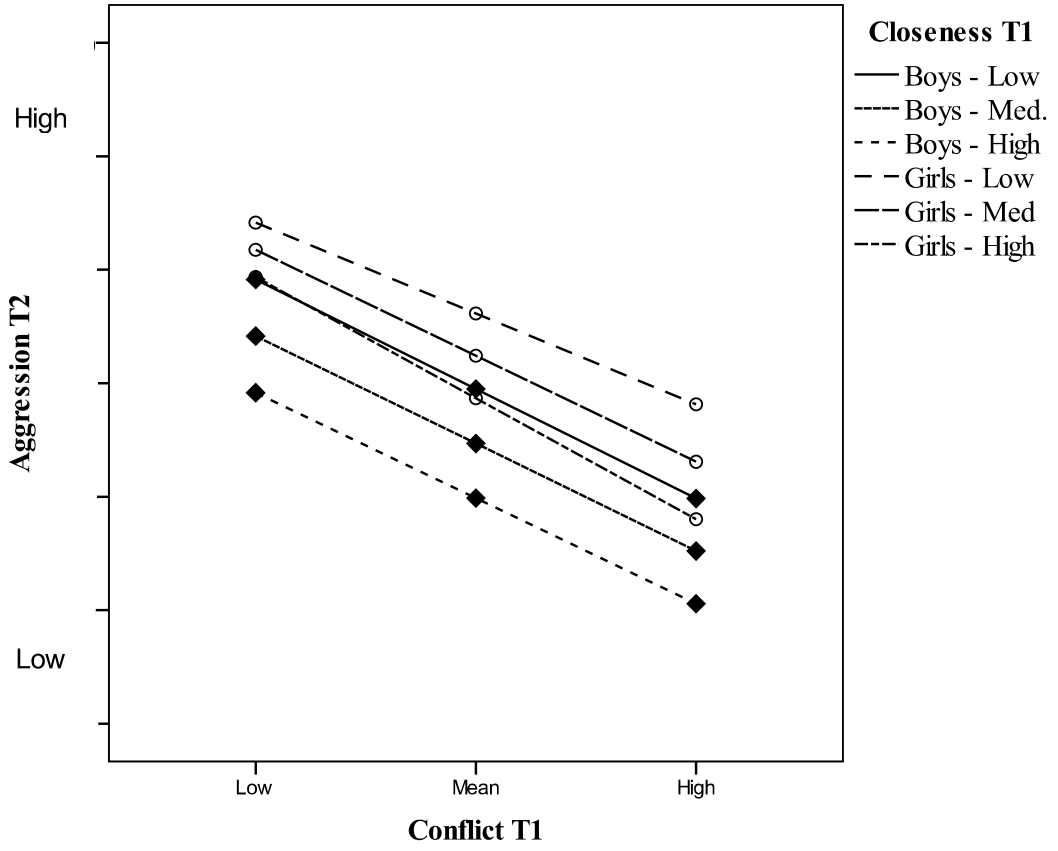

Table 20

Means and standard deviations (in parentheses) for closeness and conflict by sociometric status (Cohort 1)

	Time 1		Time 2		Time 3		Time 4	
	Close	Conflict	Close	Conflict	Close	Conflict	Close	Conflict
Social Status								
Controversial								
Boys	17.51 (3.77)	1.45 (1.44)	19.11 (4.39)	1.00 (1.19)	20.00 (2.67)	1.20 (1.23)	17.43 (5.32)	0.57 (0.98)
Girls	17.27 (5.89)	1.31 (1.30)	21.75 (5.44)	1.50 (1.91)	22.40 (2.70)	0.40 (0.55)	20.00 (2.94)	0.75 (0.50)
Popular								
Boys	15.90 (4.80)	1.27 (1.08)	18.57 (4.34)	1.14 (1.16)	18.31 (5.16)	0.93 (0.96)	19.93 (3.78)	1.11 (1.09)
Girls	18.16 (5.44)	1.06 (1.29)	20.62 (3.18)	1.03 (1.36)	20.40 (3.68)	0.80 (1.01)	21.20 (2.65)	0.93 (1.16)
Rejected								
Boys	14.05 (3.84)	0.57 (0.79)	17.34 (5.32)	0.75 (0.93)	16.89 (5.56)	0.78 (1.09)	18.75 (6.25)	1.00 (1.07)
Girls	17.01 (6.05)	2.00 (1.48)	22.20 (3.56)	1.20 (1.10)	19.25 (3.96)	1.88 (1.96)	21.33 (4.38)	0.83 (0.83)
Average								
Boys	16.94 (5.77)	1.07 (1.21)	17.86 (3.77)	1.05 (1.19)	18.00 (5.74)	0.72 (1.17)	18.42 (5.16)	0.76 (1.30)
Girls	18.58 (4.91)	0.89 (1.16)	19.88 (4.24)	1.02 (1.21)	19.60 (4.88)	0.80 (1.09)	20.76 (3.93)	0.65 (0.93)

Controversial Boys: Time 1, *n* = 22. Time 2, *n*= 18. Time 3, *n*= 10 .Time 4, *n*= 7. Controversial Girls: Time 1, *n* = 16. Time 2, *n*= 4. Time 3, *n*=5 .Time 4, *n*=4.
Popular Boys: Time 1, *n* = 30. Time 2, *n*= 29. Time 3, *n*= 28.Time 4, *n*= 27. Popular Girls: Time 1, *n* = 31. Time 2, *n*= 33. Time 3, *n*= 20.Time 4, *n*= 15.
Rejected Boys: Time 1, *n* = 7. Time 2, *n*= 16. Time 3, *n*= 9.Time 4, *n*= 8. Rejected Girls: Time 1, *n* = 11. Time 2, *n*= 5. Time 3, *n*= 8.Time 4, *n*= 12.
Average Boys: Time 1, *n* = 41. Time 2, *n*= 48. Time 3, *n*= 25.Time 4, *n*= 33. Average Girls: Time 1, *n* = 35. Time 2, *n*= 52. Time 3, *n*= 40 .Time 4, *n*= 49.

Table 21

Means for Social Support and Negative Interactions by sociometric status (Cohort 2) (Standard deviations in parentheses)

	Time 1		Time 3	
	SS	NI	SS	NI
Social Status				
Controversial				
Boys	104.58 (24.43)	29.67 (9.35)	108.88 (16.53)	29.12 (6.86)
Girls	120.91 (13.73)	31.82 (9.38)	125.60 (15.28)	25.60 (6.47)
Popular				
Boys	115.76 (14.52)	27.96 (8.62)	117.19 (13.81)	27.42 (9.84)
Girls	129.92 (11.12)	26.05 (8.62)	121.38 (15.28)	27.29 (9.79)
Rejected				
Boys	108.07 (21.29)	30.16 (10.59)	111.09 (24.05)	26.96 (9.58)
Girls	123.15 (16.56)	26.05 (8.62)	124.71 (19.24)	25.44 (10.99)
Average				
Boys	114.39 (17.85)	26.11 (8.64)	108.41 (15.08)	27.19 (8.82)
Girls	122.72 (16.88)	25.97 (8.63)	122.23 (17.16)	25.96 (9.77)

Controversial Boys: Time 1, *n* = 12. Time 3, *n*= 26 .Controversial Girls: Time 1, *n* = 11. Time 3, *n*=10.
Popular Boys: Time 1, *n* = 54. Time 3, *n*= 53. Popular Girls: Time 1, *n* = 39. Time 3, *n*= 42.
Rejected Boys: Time 1, *n* = 45. Time 3, *n*= 47. Rejected Girls: Time 1, *n* = 34. Time 3, *n*= 34.
Average Boys: Time 1, *n* = 57.Time 3, *n*= 59. Average Girls: Time 1, *n* = 68. Time 3, *n*= 74.

Table 22

Absolute difference means and standard deviations (in parentheses) for closeness and conflict by sociometric status (Cohort 1)

	Time 1		Time 2		Time 3		Time 4	
	Close	Conflict	Close	Conflict	Close	Conflict	Close	Conflict
Social Status								
Controversial								
Boys	5.45 (3.64)	1.10 (0.91)	5.20 (4.30)	1.00 (1.07)	4.43 (3.60)	1.29 (1.11)	5.14 (3.24)	1.14 (1.21)
Girls	5.94 (3.51)	1.00 (0.85)	5.06 (4.57)	2.50 (0.57)	3.80 (3.63)	0.80 (0.84)	2.00 (1.63)	0.50 (0.58)
Popular								
Boys	5.08 (4.37)	1.15 (0.75)	6.76 (4.22)	1.35 (0.93)	5.94 (4.07)	1.00 (1.19)	4.93 (3.53)	0.93 (0.80)
Girls	3.94 (3.30)	1.22 (1.26)	3.84 (2.78)	1.35 (1.35)	4.43 (2.44)	1.07 (1.27)	5.00 (4.09)	1.25 (0.75)
Rejected								
Boys	6.07 (3.73)	0.33 (0.58)	6.13 (4.50)	1.00 (0.74)	4.60 (4.22)	1.20 (1.10)	7.14 (6.30)	0.29 (0.49)
Girls	6.69 (3.26)	1.44 (1.24)	4.80 (4.02)	1.80 (0.86)	5.50 (3.56)	2.50 (1.38)	5.00 (4.00)	0.92 (0.79)
Average								
Boys	6.40 (4.17)	1.50 (1.51)	4.71 (3.27)	0.98 (1.17)	6.10 (5.28)	1.10 (1.29)	5.47 (3.08)	1.20 (1.61)
Girls	4.28 (2.74)	0.83 (0.99)	3.50 (2.98)	0.71 (0.86)	5.86 (4.04)	1.05 (1.07)	4.52 (3.75)	1.04 (1.06)

Controversial Boys: Time 1, *n* = 20. Time 2, *n*= 15. Time 3, *n*= 7. Time 4, *n*= 7. Controversial Girls: Time 1, *n* = 12. Time 2, *n*= 4. Time 3, *n*=5 .Time 4, *n*=4.
Popular Boys: Time 1, *n* =20. Time 2, *n*= 20. Time 3, *n*= 18.Time 4, *n*= 15. Popular Girls: Time 1, *n* = 18. Time 2, *n*= 26. Time 3, *n*= 14.Time 4, *n*= 12.
Rejected Boys: Time 1, *n* = 3. Time 2, *n*= 12. Time 3, *n*= 5.Time 4, *n*= 7. Rejected Girls: Time 1, *n* = 9. Time 2, *n*= 5. Time 3, *n*= 6.Time 4, *n*= 12.
Average Boys: Time 1, *n* = 14. Time 2, *n*= 23. Time 3, *n*= 10.Time 4, *n*= 15. Average Girls: Time 1, *n* = 18. Time 2, *n*= 24. Time 3, *n*= 21 .Time 4, *n*= 27

Figure 9. Closeness means (transformed) over time for the full sample, boys and girls (Cohort 1)

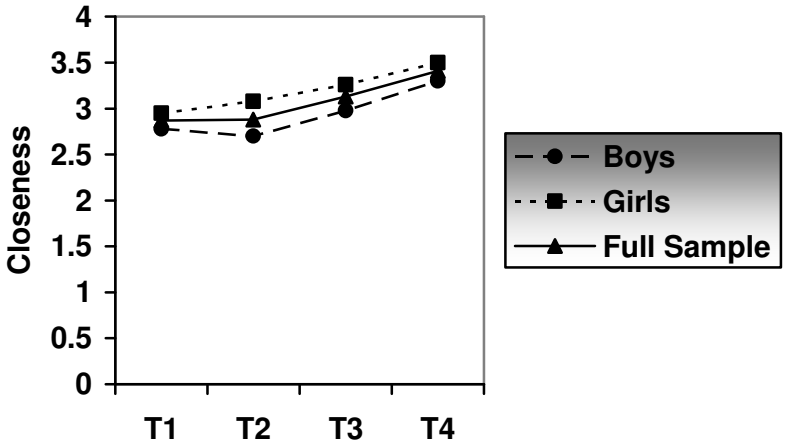

Figure 10. Conflict means (transformed) over time for the full sample, boys and girls (Cohort 1)