Running head: GIRLS' FRIENDSHIPS AND SOCIAL NETWORKS

The Dynamics of Relationally Aggressive
Girls' Friendships and Social Networks

by

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A thesis submitted to
the Faculty of Graduate Studies and Research
in partial fulfillment of
the requirements for the degree of

Doctor of Philosophy

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Abstract

This research is a first step toward examining the characteristics of reciprocated friendships and social network affiliations of relationally aggressive girls. A total of 499 preadolescent children (ages 9–12) and their teachers participated in the initial phase of the study. Teachers completed a rating scale of social behaviour to assess aggression status. Students completed sociometric nominations, a self-report instrument that assessed the quality of the friendship of the friend they spent the most time with, and a measure of the broader social networks of students in their grade. Thirty-nine highly relationally aggressive (RA) girls were identified within this larger sample compared to 204 nonaggressive (NA) girls.

The study found that even though RA girls were more disliked by their peers, they did have reciprocal best friends and their friends were more likely to also be relationally aggressive. RA girls' friendships were higher in exclusivity than the friendships of NA girls and RA girls reported using relational aggression with their friends to harm others. However, relationally aggressive girls' best friends did not differ from the friends of nonaggressive girls in social status.

The social networks of RA girls did not differ from NA girls on most dimensions including membership, cluster size, cluster status, or position within a cluster. However, RA girls affiliated together in clusters more frequently than would be expected by chance. Members of nuclear clusters had significantly higher relational aggression scores than members of secondary clusters and peripheral clusters. As expected, RA girls who held nuclear positions in social clusters had significantly higher prosocial scores than RA girls who held either secondary or peripheral positions in clusters. Finally, nonaggressive members of clusters that also had relationally aggressive members were not found to

significantly differ from nonaggressive members of clusters that only had nonaggressive members in ratings of relational aggression or social status.

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The Dynamics of Relationally Aggressive Girls' Friendships and Social Networks

Due to its deleterious effects on individuals and society and the fact that it is one of the best known predictors of future social and psychological maladjustment, childhood aggression has received a great deal of attention and has been one of the most widely researched topics over the past couple of decades (Coie & Dodge, 1998; Crick et al., 1999; Parke & Slaby, 1983). Specifically a great deal of research has been conducted on the peer relationships of aggressive children. Past research indicates that children who are aggressive are at-risk for both concurrent and long-term psychosocial adjustment difficulties including social rejection, victimization, juvenile delinquency, academic difficulties, dropping out of school, teen pregnancy, and mental health problems (Kupersmidt, Coie, & Dodge, 1990; Parker & Asher, 1987). While important advances have been made in our understanding of aggressive behaviour, most of this knowledge has come from studying aggression in male-only samples (Bjorkqvist & Niemela, 1992; Crick et al., 1999; Lagerspetz, Bjorkqvist, & Peltonen, 1988). Until recently, research on childhood aggression focused on the study of overt aggression (physical and verbal), which is more typical of males than of females. Both of these factors have contributed to the widely held beliefs that not only are boys more aggressive than girls, but that girls are stereotypically nonaggressive (Bjorkqvist & Niemela, 1992).

Recently, however, some researcher have suggested that there has been a gender bias in past research on aggression (Bjorkqvist & Niemela, 1992; Crick & Grotpeter, 1995; Galen & Underwood, 1997; Owens, 1996). These researchers postulate that while males and females are equally aggressive, the *forms* of aggression assessed in earlier research are less characteristic of girls. In recent research by Crick and Grotpeter, a

relational form of aggression has been identified that harms others through manipulation or control of their relationships with others (e.g., threatening to withdraw acceptance or friendship as a way to control others; using social exclusion or rumor spreading as a form of retaliation) (Crick 1995; Crick & Grotpeter, 1995). When relationally aggressive behaviours are examined, girls are found to be more aggressive than previously thought. It has been hypothesized that this form of aggression, although less overt than physical aggression, predicts the same risk factors as overt aggression for both concurrent and long-term psychosocial maladjustment (Crick, 1996). In addition, early research has indicated that unlike physical aggression, relational aggression is used by both boys and girls and that girls may use this form of aggression more than boys (Crick & Grotpeter, 1995; Crick, 1997). Most interestingly, this form of aggression is confounded with gender such that extremely relationally aggressive children are almost always girls.

The published research to date has focused on relationally aggressive children's dyadic friendships, specifically the quality of their friendships, as well as their social status in the larger peer group. Yet children's peer relations have been viewed as consisting of several levels of interpersonal experiences (e.g., dyadic friendships, social clusters, larger peer group or social network) that provide an important context for adaptive social and emotional development in childhood and adolescence (Cairns, Cairns, Neckerman, Gest, & Garipey, 1988; Rubin, Bukowski, & Parker, 1998). However, very little is known about the behavioural characteristics of friends of highly relationally aggressive girls or about relationally aggressive girls' social networks. This study specifically examined these aspects of relationally aggressive girls' peer relations.

The purpose of the present study was to examine the characteristics of reciprocated friendships and social network affiliations of relationally aggressive girls and determine whether they differed from those of nonaggressive girls. It was anticipated that this research would provide greater insight into the nature of the social relationships of relationally aggressive girls. In order to clarify the patterns and process through which aggressive and nonaggressive girls interact with the members of their respective networks the characteristics of their social networks was examined. Of particular interest were the distinctive patterns of behaviours that characterized the members of the groups relationally aggressive girls belonged to and distinguished them from members of other groups. This information will provide an opportunity for early intervention and the possible prevention of negative outcomes.

In the present study, the structure of girls' friendships and social networks were examined at a significant stage in development, namely, middle childhood. It is during this developmental period when children's friendships and affiliations with peer groups become increasingly important and are typically met through relationships with same-gender peers (Cairns & Cairns, 1991; Hartup, 1996; Phillipsen, 1999; Rubin et al., 1998). It is during this time that peers play a primary role in influencing both positive and potentially delinquent behaviour with one another (Bagwell, Coie, Terry, & Lochman, 2000).

Thus, the general goal of the present study was to examine the nature of relational aggression in girls' friendships and social networks. At the outset of the study it was decided that if a large enough sample of relationally aggressive boys were identified, then they would be included in the analyses. However, preliminary analyses clearly indicated

that the type of aggression children engaged in was confounded by gender, resulting in an incomplete design. This is not a surprising result and is consistent with the findings of many other researchers (Crick, 1995; Daniels, Sinclair, Delveaux, & Dodds, 2000; Rys & Bear, 1997). Therefore, the focus of this study was extremely relationally aggressive girls. The comparison group was nonaggressive girls.

In order to provide the context for the present study within the extensive literature on aggressive children's peer relations, this paper begins by distinguishing between four forms of aggression: overt (physical and verbal), indirect, social and relational aggression. Relationally aggressive behaviours are the focus of this section. Next, the literature review specifically examines the relation between girls' aggressive behaviour and their social relationships. Relationally aggressive behaviours are the essence of this investigation and as such, are the focus of the review. Specifically, the literature that has examined the peer status and social-psychological adjustment of relationally aggressive girls is reviewed. The literature review continues with a discussion of the friendships of relationally aggressive girls, with an emphasis on the quality of their friendships. Then, studies that have examined the relation of girls' overt aggressive behaviours to affiliations within the larger social network are discussed. Finally, the present study is discussed in detail with regard to the purpose, hypotheses, method, results, and discussion of findings.

Aggression in Middle Childhood

Definitions of Aggressive Behaviour

Although specific definitions of aggression have varied over the years, the present research defines aggression as behaviours that are intended to hurt or harm another

person (Berkowitz, 1993; Parke & Slaby, 1983). Aggressive behaviours have been differentiated in the literature in terms of the type of behaviours that are utilized in order to deliver aggressive acts. Overt, indirect, social, and relational aggression are four forms of behaviour that are intended to hurt or harm another person.

Overt aggression. Overt aggression is generally defined as verbal and physical behaviours that are directed at individuals with the intent to harm and includes pushing, hitting, kicking, name calling, insulting, or threatening to hit. In general, physical aggression is found more frequently among boys than girls (Crick & Grotpeter, 1995; Galen & Underwood, 1997).

There have been three conceptually related forms of aggression that have been identified in the literature that fit the definition of behaviours whose intent is to harm someone but that are more covert in nature compared to overt aggression. These behaviours involve manipulating social relationships by such means as gossiping, exclusion, and ostracism, and include indirect, social, and relational aggression.

Indirect aggression. One of the first researchers to suggest that aggression could be displayed in a more indirect manner than had previously been assessed in the literature was Feshbach (1969). She described indirect aggression as behaviours that generally cause harm to the target person and generally involve behaviours such as social exclusion and rejection. In her observational study, Feshbach assessed first grade children's use of avoiding, ignoring, excluding and refusing behaviours when interacting with a newcomer to a playgroup. For the first time, a gender difference in the use of indirect aggressive behaviours was reported with girls being significantly more likely than boys to exclude and reject newcomers.

Over the next 10 years several researchers examined the use of indirect aggression in girls and boys; however there was considerable confusion in the literature about the concept (see Froda, Macaulay, & Thorne, 1977 for a review). Some researchers used the terms direct and indirect aggression to distinguish between physical and verbal aggression. Others used the terms to describe aggression with and without a target, e.g., hitting someone vs. slamming a door. A third category of researchers used these terms to distinguish between harm delivered directly to a target and harm delivered circuitously. More recently, however, researchers have attempted to more clearly delineate indirect aggression in terms of an operational definition and a consistent, reliable measure of assessment (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Lagerspetz et al., 1988).

Lagerspetz et al. (1988) conceptualized indirect aggression as a type of social manipulation wherein the aggressor either uses others to attack the victim or manipulates the social structure in order to harm someone. The aggressor's intent is to cause harm while not being identified thereby avoiding possible retaliation (Bjorkqvist, Lagerspetz, et al., 1992). According to these researchers, indirect aggression focuses on avoiding direct confrontation with the victim so that the perpetrator attempts to cause harm without appearing to do so. Some examples of indirect aggressive behaviours include: "says bad things behind the other's back" and "says to others: let's not play with him/her". The distinguishing feature of indirect aggression is that it involves covert behaviours in which the victim is not directly confronted so that the victim may not know who instigated the aggression.

Social aggression. Social aggression was identified by Cairns, Cairns, Neckerman, Ferguson, and Garipey (1989) and has been defined by Galen and

Underwood (1997) as behaviours that inflict harm on another person by damaging their self-esteem and/or social status. It includes behaviours such as spreading rumors and social exclusion as well as nonverbal behaviours, such as negative facial expressions or body movements, (e.g., rolling one's eyes). Social aggression does not specifically focus on damaging relationships but is directed towards damaging another's self-esteem and social standing. Social aggression can be either direct or indirect in nature.

Relational aggression. The third form of covert aggression described in the literature is referred to as relational aggression. Crick and Grotpeter (1995) defined relational aggression as behaviors that harm others through hurtful manipulation of or damage (or threat of damage) to their peer relationships. Relational aggression is typically expressed within a friendship or a social group and may include behaviours that are intended to cause damage to another child's friendships or feelings of inclusion by the peer group. Examples of such include: angrily retaliating against a peer by purposefully excluding him/her from one's social group; spreading hurtful rumors about a peer; ignoring a peer; giving the "silent treatment"; or threatening to end a friendship unless the friend does as they are told (Crick & Grotpeter, 1995; Crick et al., 1999).

According to Crick and Grotpeter (1995) it is during early and middle childhood, when children are interacting primarily with same-gender peers, that they learn to harm others in ways that would most effectively damage the social goals of their same gender peers. The goal that is particularly important for girls is the maintenance of close, intimate relationships with others (Block, 1983). Thus, Crick theorizes that girls are more likely to use relational aggression, rather than overt aggression as these more covert yet still hostile acts damage (or attempt to damage) close relationships and feelings of

social inclusion and serve as effective means for gaining control over or retaliating against another girl.

Relational aggression is conceptually distinct from physical aggression or verbal aggression (e.g., name calling, verbal threats to another's physical well-being) in that the focus of relational aggression is to damage relationships within the close peer group.

Overt aggression in contrast, is typically directed towards others outside of the aggressor's peer group and involves attempts to harm others through physical aggression or the use of threats and name calling.

Indirect aggression is conceptually similar to relational aggression and in fact, some of the behaviours associated with these two forms of aggression do overlap (e.g., spreading of rumors, ignoring, telling others not to play with the victim). However, according to Crick and her colleagues (Crick et al., 1999), there is a distinction between these two forms of aggression. As stated, indirect aggression focuses on avoiding direct confrontation with the victim, instead causing harm in a secretive yet destructive way. In relational aggression, the relationship is manipulated in order to inflict harm or get one's own way, and includes all behaviours that are either direct ("You can't be my friend if you don't give me your chocolate bar") or indirect in nature ("When mad, gets even by keeping the person from being in their group of friends"). Moreover, the term indirect aggression has been used to describe behaviours that are not relationally aggressive such as practical jokes (Buss & Perry, 1992). In summary, indirect aggression focuses on hostile behaviours with peers that are nonconfrontational in nature, whereas relational aggression includes all hostile acts in which relationships are manipulated in order to cause harm either directly or indirectly (Crick et al., 1999).

Relational aggression also has overlapping features with social aggression as both include such behaviours as spreading rumors and social exclusion. However, social aggression does not specifically focus on damaging relationships, but rather, is directed toward damaging another's self-esteem and social standing (Galen & Underwood, 1997). Moreover, the construct of social aggression appears to be broader than that of relational aggression as it includes nonverbal behaviours, such as negative facial expressions or body movements, (e.g., rolling one's eyes). In fact, social aggression, as defined by Galen and Underwood, could include other behaviours that are likely to damage one's self-esteem (e.g., verbal insults) and impact social status (e.g., physical aggression) (Crick et al., 1999).

The primary focus of this review is relational aggression as described by Crick and Grotpeter (1995). However, due to the relatively few studies available in this area, applicable research on indirect aggression, which is conceptually more similar to relational aggression than social aggression, is presented as well since these appear to be overlapping constructs. The next section provides an overview of some of the research to date on the topic of relational aggression. First, research is presented that provides evidence that relational aggression is a distinct construct highlighting assessment techniques used to identify this form of aggression. Then gender differences in relational aggression are presented.

Relational Aggression in Middle Childhood

A Distinct Construct

To date, the majority of research in the area of relational aggression has focused on the middle childhood period (Crick, 1996; Crick, 1997; Crick, Bigbee & Howes, 1996; Crick & Grotpeter, 1995; Rys & Bear, 1997; Tomada & Schneider, 1997). During this period of child development, recent research has provided empirical evidence that relational aggression can be reliably distinguished from other types of behaviour (e.g., withdrawn behaviour and prosocial) and other types of aggression (e.g., overt). In fact, this construct is supported by two distinct areas of research: children's perceptions of relationally aggressive behaviours and factor analytic studies.

Children's perceptions. Evidence of the distinctiveness of relational aggression comes from two studies conducted by Crick et al. (1996) which examined children's perceptions (normative beliefs) of how aggressive behaviours actually occurred in their peer groups. Third- through sixth-grade children were asked "what do most girls/boys do when they are mad at someone" (Study One) and "describe things other girls/boys do when they want to be mean" (Study Two). A content analysis approach was then used to assign children's responses to one of a number of behavioural categories (e.g., physical aggression, verbal insults, verbal threats, nonverbal aggression, relational aggression, telling and avoidance). Results showed that girls perceived relational aggression as being the most common type of angry and hurtful behaviour prevalent in girls' social networks, while boys perceived girls as engaging in physically aggressive behaviours most often. Boys may not perceive girls as being relationally aggressive because they may not be

privity to these covert behaviours or they may simply not recognize relational aggression when it occurs.

On the other hand, both boys and girls perceived physical aggression as being the most common angry and hurtful behaviour prevalent in boys' social networks, a finding that is consistent with previous research on gender differences in overt aggression (Block, 1983; Coie & Dodge, 1998). These results do support the hypothesis of Crick and her colleagues that children view relationally manipulative behaviours as mean and hurtful, and therefore, aggressive in nature.

Statistical evidence. Results of recent research have provided evidence that while overt aggression and relational aggression are both perceived as harmful, they are two distinct forms of aggression. Several studies have examined the relationship between relational aggression, overt aggression, gender, and children's social-psychological adjustment (Crick & Grotpeter, 1995; Crick, 1996; Crick, 1997; Rys & Bear, 1997; Tomada & Schneider, 1997).

Crick & Grotpeter (1995) studied 491 children in grades three through six to determine the extent to which relational aggression is distinct from overt aggression. A peer nomination measure was used to assess peers' perceptions of subjects' behaviours. This instrument included a peer sociometric and four subscales designed to assess social behaviour: relational aggression, overt aggression, prosocial behaviour, and social isolation. Children were provided with a class roster and asked to identify three peers who fit a number of behavioural descriptors which fell into four general categories: those who engaged in relational aggression (e.g., when mad at a person, gets even by keeping the person from being in their group of friends), those who engaged in overt aggression

(e.g., hits, pushes others), those who engaged in prosocial behaviour (e.g., does nice things for others), and those who engaged in social isolation (e.g., plays alone a lot).

Factor analysis of the children's responses yielded the four predicted factors: relational aggression, overt aggression, prosocial behaviour, and isolation. The items that loaded on the relational aggression factor scale were: when mad, gets even by keeping the person from being in their group of friends; tells friends they will stop liking them unless friends do what they say; when mad at a person ignores them or stops talking to them; and tries to keep certain people from being in their group during activity or play time. A correlation ($r = .54$) was reported between relational aggression and overt aggression. Crick and Grotpeter (1995) concluded that "the moderate magnitude of this correlation is what one would expect for two constructs that are hypothesized to be *different* forms of the *same* general behavior, i.e., there should be a moderate association rather than a high or low association" (p. 715). Overall, these analyses provide initial evidence that relational behaviours are a form of aggression that represents a distinct construct, and that although related in terms of sharing similar intent to harm others, the behaviours are relatively independent of those which characterize overt aggression.

Further evidence providing support for the construct of relational aggression comes from studies where factor analyses have consistently yielded separate factors for relational aggression and overt aggression based on teacher ratings, as well as peer nominations, in school-aged samples (Crick, 1996; Tomada & Schneider, 1997).

Crick (1996) had teachers complete assessments of children's social behaviours in a sample of 245 third- through sixth-grade children. Using a teacher rating version of the peer nomination measure (Crick, 1996), factor analysis revealed the three predicted

factors: relational aggression, overt aggression, and prosocial behaviour. Rys and Bear (1997), who also used this teacher-based instrument in their research with 266 grades 3 and 6 students, conducted a principal-components factor analysis of the scale. The results of this factor analysis replicated Crick's (1996) findings.

Evidence of relational aggression as a distinct construct has also been reported in cross-cultural research. Using a sample of 314 Italian children aged 8 to 10 years of age, Tomada & Schneider (1997) presented translated versions of the peer and teacher nominations developed by Crick and Grotpeter (1995) and Crick (1996) to Italian children. Factor analysis provided evidence for a three-factor model (relational aggression, overt aggression, prosocial behaviour) for both peer and teacher nominations.

In sum, the findings of these studies provide strong evidence that, although overt and relational acts are both considered to be aggressive in nature, they can be reliably distinguished from each other by both peers and teachers as being specific subtypes of aggression.

Gender Differences

There is evidence that children themselves perceive a gender difference in the forms of aggression used by boys and girls. When children were asked directly about the types of aggressive behaviours they observed among their male and female peers (Crick et al., 1996), girls cited relational aggression as being the most common angry and hurtful behaviour prevalent in girls' social networks, while boys perceived girls as engaging in physically aggressive behaviours most often. In contrast, both boys and girls cited physical aggression as the most frequent aggressive behaviour that occurred among boys. Furthermore, the older the girls were, the more likely they were to cite relational

aggression as behaviour intended to harm. A similar pattern of results was reported by Cairns et al. (1989) who asked fourth through ninth grade students to describe recent conflicts with peers. Analyses of responses showed that girls' conflicts were significantly more likely than boys' conflicts to focus on themes of social isolation, ostracism, and manipulation of peer acceptance (themes that are consistent with relational aggression).

Although it was initially believed that relational aggression would characterize girls' conflicted social interactions more than boys, research findings have been unable to consistently identify girls as being more relationally aggressive than boys. Girls have been found to be significantly more relationally aggressive in two studies (Crick, 1997, peer and teacher reports; Crick & Grotpeter, 1995, peer reports). On the other hand, other researchers (Daniels et al., 2000; Rys & Bear, 1997; Tomada & Schneider, 1997) did not find a gender difference when using either peer or teacher reports when continuous relational aggression scores were examined.

Crick & Grotpeter (1995) argue that, in contrast to boys, girls more often engage in relational aggression as opposed to overt aggression. These researchers hypothesized that when attempting to inflict harm on peers, children would engage in behaviours that are more likely to damage the goals that they themselves value. For girls, social interactions and relationships are most valued and, consequently, they proposed that girls would more likely commonly employ relationally aggressive behaviours which harm others and their social connections. Boys, on the other hand, would be more likely to utilize overtly aggressive behaviours.

To examine this hypothesis, Crick & Grotpeter (1995) studied the aggressive and prosocial behaviours of 491 third- through sixth-grade children using the peer nomination

measure described earlier. Children with scores one standard deviation above the mean for relational aggression, overt aggression, or both were considered aggressive. They were classified into one of four groups: nonaggressive (relational and overt aggression scores both low); overtly aggressive (relational aggression low but overt aggression high); relationally aggressive (overt aggression low but relational aggression high); and, combined overtly and relationally aggressive (relational and overt aggression both high). Using this procedure, 371 children were identified as nonaggressive, 41 as overtly aggressive, 46 as relationally aggressive, and 33 as combined overtly plus relationally aggressive. Approximately equal numbers of boys and girls were classified as nonaggressive (73% and 78.3% respectively). However, the overtly aggressive group consisted mainly of boys (15.6% vs. 0.4% of the girls). The relationally aggressive group consisted mainly of girls (17.4% vs. 2.0% of the boys). The combined relational/overt aggressive group consisted of both boys and girls (9.4% and 3.8% respectively). Of particular interest was the finding that when both relational and overt forms of aggression are examined, both boys and girls were classified as aggressive with almost equal frequency (27% of the boys and 21.7% of the girls).

To further assess the relation between gender and aggression, two analyses of variance were conducted. Girls were found to be significantly more likely than boys to be identified by peers as being relationally aggressive, and were more likely to be identified in an extreme group of relationally aggressive children. On the other hand, boys were identified by their peers as being more overtly aggressive than girls and were more likely to be represented in the extreme group of overtly aggressive children.

Similar results were also obtained in the study conducted by Crick (1997) of 1,166 third- through sixth-grade children (578 boys and 588 girls). Children with overt aggression scores one standard deviation above the sample mean were classified as overtly aggressive ($n = 161$, 130 boys and 31 girls) while those with relational aggression scores one standard deviation above the sample mean were classified as relationally aggressive ($n = 179$, 71 boys and 108 girls). In addition, the relationships between both overt and relational aggression and internalizing and externalizing adjustment difficulties were examined. Relational aggression was related to both internalizing (self-reported) and externalizing (teacher-reported) difficulties, in contrast to overt aggression, which was found to only be related to externalizing difficulties (teacher and self-reported).

However, in this study Crick found that children who engaged in gender non-normative forms of aggression (i.e., overtly aggressive girls, relationally aggressive boys) experienced significantly more adjustment difficulties than those children who engaged in more gender normative forms of aggression and children who were nonaggressive. Crick argued that gender atypical behaviour (e.g., overt aggression exhibited by girls) is likely to incur more social sanctions and negative feelings from peers than is behaviour that is relatively extreme in frequency or intensity but gender normative (e.g., relational aggression exhibited by girls). It has been proposed that these children may become more socially rejected or excluded because peers view their behaviour as unusual for their gender and that this negative treatment may exacerbate these children's adjustment difficulties (Crick, 1997). However this hypothesis has not yet been tested, presumably due to the difficulty in obtaining a large enough sample of overtly aggressive girls to adequately evaluate the relevant factors. To further assess the relation between gender

and peer perceptions of aggression, two analyses of variance were conducted. Results revealed significant effects for gender in both forms of aggression. Girls were perceived by peers to be significantly more relationally aggressive than boys, whereas boys were perceived by peers to be significantly more overtly aggressive than were girls.

Not all researchers have reached the same conclusion regarding gender differences for preadolescent children. Rys and Bear (1997) used the same peer assessment technique and teacher-rating instrument as Crick and Grotpeter (1995) to assess the aggressive behaviours of 267 children (132 third-grade and 135 sixth-grade). In contrast to the findings of Crick and colleagues (Crick, 1997; Crick & Grotpeter, 1995), Rys and Bear did not find girls to be more relationally aggressive than boys. Boys and girls were found to exhibit equal amounts of relational aggression. However, when groups were defined on the basis of level of aggression rather than gender (using Crick's criterion of scores one standard deviation above the sample mean), girls were found to be more extreme relational aggressors than boys and boys were more extreme overt aggressors than girls.

Similarly, Daniels et al. (2000) and Sinclair (1999) reported that boys and girls did not differ on the level of relational aggression they engaged in, however, when extreme groups were formed, girls were found to be more likely to be extreme relational aggressors compared to boys. Daniels et al. (2000) examined the self-perceptions of aggressive children and their victims. Using the same procedure as described in Crick and Grotpeter (1995), in a sample of 357 children in fourth- through sixth-grade, approximately equal numbers of boys and girls were identified as aggressive (28.6% and 22.7% respectively). The overtly aggressive group consisted mainly of boys (14.4% vs.

3.1% of the girls), the relationally aggressive group mainly of girls (9.3% vs. 0.6% of the boys), and the combined relational/overt aggressive group mainly of boys (8.7% and 1.8% respectively).

One possible explanation for these discrepant results is the fact that in Daniels et al. (2000), Rys and Bear (1997), and Sinclair's (1999) studies, the extreme relational/overt group consisted mainly of boys. These male relational/overt aggressors would have been included in the analysis when boys and girls were compared on the mean level of relational aggression they engaged in. However, once extreme groups were identified, the subgroup of male relational/overt aggressors would have been differentiated from relational aggressors, and therefore, gender differences would emerge.

Not all researchers have found that girls are more extreme relational aggressors than boys. In a study of Italian children (Tomada & Schneider, 1997), boys were assessed by peers and teachers as not only being more overtly aggressive than girls, but also more relationally aggressive. However, the difference between boys and girls was much smaller for relational aggression than for overt aggression. When extreme groups were looked at using Crick's criterion of scores one standard deviation above the sample mean, 9.1% of girls compared to 12.5% of boys were nominated by peers as extremely relationally aggressive. In contrast, 23.9% of the boys were classified as extreme overt aggressors while only 1 out of 147 girls was classified as an extreme overt aggressor. The authors speculated that they might not have found a gender difference in relational aggression due to cross-cultural differences in relational aggression in boys. Specifically, because boys are brought up in very tight, closely-knit relational networks of families, it was suggested that boys might acquire relational aggression by means of observing the

interactions of their parents. Indeed, the family relationships of relationally aggressive children have been found to be overly close and enmeshed (Crick et al., 1999).

Another factor to consider is that this sample was comprised of third- and fourth-graders, whereas all of the other samples reviewed previously were comprised of third-through sixth-graders. Some researchers have suggested there are developmental trends in children's use of different forms of aggression, particularly for girls. Bjorkqvist, Lagerspetz, et al. (1992) suggested that young children use physical means of aggression because they lack the social skills or verbal skills to use other types of aggression. As children mature, verbal skills develop thereby allowing them to express anger through the use of verbal aggression without having to resort to physical force, which is perceived as being socially unacceptable. As they get older, verbal and social skills develop, and children learn to use indirect or relational aggression to cause harm to others.

To test this hypothesis, Bjorkqvist, Osterman and Kaukiainen (1992) examined gender differences in indirect aggression versus physical aggression for four different age groups: 8-year, 11-year, 15-year and 18-year olds. These results were based on 3 different studies conducted with different age samples (Lagerspetz et al., 1988; Bjorkqvist, Lagerspetz, et al., 1992; Bjorkqvist, Osterman, et al., 1992). They reported that boys were more physically aggressive than girls across all age groups. At age eight, girls exhibited slightly, though not significantly, more indirect aggression than boys. However, girls did not yet appear to use indirect aggression more often than physical aggression. By age 11, indirect aggression was used significantly more frequently by girls than by boys, with this trend continuing through to age 18. Note however, that the

indirect aggression measure used in the 1988 study was confounded with verbal aggression.

Owens (1996) also examined gender differences in forms of aggression used for four different age groups: 8-year, 11-year, 14-year, and 16-year olds in Australia. Three types of aggressive behaviour (physical, verbal, and indirect) were investigated using modified versions of The Direct and Indirect Aggression Scales (DIAS) (Bjorkqvist, Lagerspetz, et al., 1992) which have been revised several times since the original research conducted by Lagerspetz et al. (1988). They measure direct physical aggression (5 items), direct verbal aggression (7 items), and indirect aggression (12 items). This study confirmed that there are gender and developmental differences in aggression among students. Specifically, boys used more physical aggression strategies than girls across all age groups. Boys also generally tended to have higher levels of verbal aggression than girls. For indirect aggression, 8- and 11- year old boys and girls were very similar in their use of this strategy, however, by age 14 girls used more indirect forms of aggression.

Gender differences summary. The available research findings have been unable to consistently identify preadolescent girls as more relationally aggressive than boys in normative samples ages 8 to 12 years. The differences in the outcomes of the various studies may be due to differences in the age of samples, cultural differences, as well as differences in how the data is analyzed (i.e., identifying children as aggressive on the basis of gender, or examining groups on the basis of aggression status rather than gender). However, what researchers have found is that preadolescent girls are more frequently identified by peers as extreme relational aggressors, while boys are more often

identified as extreme overt/relational aggressors (Crick, 1996; Crick & Grotpeter, 1995; Daniels et al., 2000; Rys & Bear, 1997). Thus, although boys and girls in some of the normative samples appear to use relational aggression about equally, when extremely relationally aggressive children (children who use only relational aggression and use it excessively) are identified the group is almost exclusively girls. These findings suggest that for extremely aggressive girls relational aggression is the strategy of choice. More importantly, these studies highlight the fact that if aggressive children are identified only on the basis of overt aggression scores, then many girls who are relational aggressors would be excluded, leading to a conclusion that girls are not aggressive. On the other hand, if relational aggression is assessed in addition to overt aggression, the gender difference in aggression is minimized or disappears.

Summary of Relational Aggression

In sum, the validity and distinctiveness of relational aggression as a separate construct has been supported by research in a number of ways. First, factor analysis of the peer nomination measure used by Crick and colleagues has yielded separate factors for overt and relational aggression. Second, when aggressive children are classified into extreme groups, many children exhibit either relational or overt aggression. For example, Crick and Grotpeter (1995) report that of 121 identified aggressive children, 27.3% ($n = 33$) exhibited both relationally and overtly aggressive behaviours, while the majority (72.7%) exhibited only one form of aggression. Third, children view relationally manipulative behaviours as mean and hurtful, and therefore, aggressive in nature.

Finally, there is evidence in the recent literature that provides support for the hypothesis that both males and females are aggressive; however, they differ in the ways

they express their aggression. For example, children reported gender differences in aggressive behaviour among their peer groups. Specifically, girls cited relationally aggressive behaviours as the most common angry and hurtful behaviour prevalent in girls' social networks, while overt aggression was cited by both boys and girls as the most frequent aggressive behaviour that occurs among boys (Crick et al., 1996). Moreover, when one compares differences in aggressive behaviour between males and females, it is evident that males are more overtly aggressive than females. While the results from studies that have examined gender differences in the use of relational aggression are somewhat mixed, several studies do suggest that girls are more relationally and indirectly aggressive than boys. Finally, when extremely relationally aggressive children (children who use relational aggression excessively) are identified, the group is almost exclusively girls. This research on extreme groups of aggressive children has shown that boys and girls are identified as aggressive with almost equal frequency when relational aggression is assessed in addition to overt aggression. Therefore, when examining the social relationships of girls it is important to consider the use of relational aggression within these relationships.

Social Relationships of Aggressive Preadolescent Children

Children's peer relations have been viewed as consisting of several levels of interpersonal experiences (e.g., dyadic friendships, social groups or clusters, larger social network) that provide an important context for adaptive social and emotional development in childhood and adolescence (Cairns et al., 1988; Rubin et al., 1998). The social relationships of aggressive children within their larger social network have traditionally been investigated by examining these children's social status within the peer

group, i.e., the degree to which they are liked and disliked by the general peer group, usually a classroom (Coie, Dodge, & Kupersmidt, 1990; Newcomb, Bukowski, & Pattee, 1993). However, the sociometric status procedure does not provide other important information about a child's social relationships including the identities of a child's friends and whether these friendships are reciprocated, as well as the actual social clusters of which the child is a member, and the structure and function of the social network within which the child is embedded, including the number, size, and organization of the smaller clusters and how they relate to one another (Cairns et al., 1998). Such studies of children's social networks allow researchers to focus on the relationships that children form with specific peers and the influences that these individuals have upon each other (Cairns et al., 1988; Bagwell et al., 2000).

In the literature on aggressive children's peer experiences, the focus has been on social status (classroom likability) while very little attention has been paid to aggressive children's friendships, in particular the dyadic friendship (Bagwell et al., 2000; Coie & Dodge, 1983, Hartup, 1996; Parker & Asher, 1993). Moreover, the study of the structure and dynamics of the larger social network has largely been neglected. However, there is an increasing awareness among researchers that children's friendships are embedded within the broader social network of the peer group and the classroom (Asher, Parker, & Walker, 1996; Cairns, Xie, & Leung, 1998; Eder, 1985) and therefore, both friendships and the social network are of developmental significance.

These various facets of children's social relationships are reviewed below, emphasizing the literature that has looked specifically at the social relationships of relationally aggressive girls. First the distinction between popularity and friendship is

discussed in order to provide a framework for this review. Then, the peer status and social-psychological adjustment of relationally aggressive girls is discussed. Finally, the literature that has examined the friendships of relationally aggressive girls is reviewed and the structure and dynamics of aggressive girls' social networks are examined.

Popularity vs. Friendship

Popularity and friendship are two of the most central concepts in the extant literature on peer relations and social development (Hartup, 1996). They are also quite distinct constructs and represent different levels of description of children's social experiences and circumstances (Asher et al., 1996; Bukowski, Pizzamiglio, Newcomb, & Hoza, 1996; Hartup, 1996; Parker, Saxon, Asher, & Kovacs, 1999).

Popularity refers to the extent to which a child is liked or disliked by members of the larger peer group and is comprised of two basic underlying dimensions; acceptance and rejection (Bukowski et al., 1996). Children who are accepted within the peer group are regarded positively and liked by most of the members of the group. On the other hand, poorly accepted children are disliked and viewed negatively by their peers, frequently resulting in rejection. According to Asher et al. (1996), what is important is the degree to which a child is liked or disliked by the larger peer group. Furthermore, how the subject perceives others in the peer group is irrelevant to their level of acceptance as currently defined in the literature. Thus, acceptance/rejection has been described as a unilateral construct (Bukowski et al., 1996; Parker et al., 1999) in that it only tells us how a group of peers perceive a child, not how a focal child feels about particular class members.

Friendship, in contrast, operates on a dyadic level and is defined as a mutual relationship between two individuals based on reciprocity, affection, and intimacy (Bukowski et al., 1996; Coie & Dodge, 1983; Parker & Asher, 1993). Thus, unlike acceptance, the source of the judgment is of great importance for friendships as well as the nature of the peer's judgement. In this respect, friendship has been described as a bilateral construct (Bukowski et al., 1996). Due to the fact that reciprocity of affection is a critical component in the definition of friendship, the perceptions of the focal child are very important (Asher et al., 1996).

Popularity and friendship are linked together by the dimension of liking as it is one of the fundamental dimensions of popularity and is a fundamental feature of a reciprocated friendship. Although popularity and friendship are related, children rejected by the peer group may often have a close, reciprocated friendship. George and Hartmann (1996) found that even though unpopular children were less likely than popular children to have a reciprocated friendship, 77% of unpopular children reported a reciprocal friendship.

Previous research has documented that overtly aggressive behaviour does not necessarily predict the likelihood of having a reciprocated friendship (Cairns et al., 1988). Specifically, overtly aggressive boys and girls were as likely to have reciprocated friendships as their nonaggressive peers, yet were less popular within the larger peer group. Likewise, a child may be popular within the larger peer group but not have a close friendship (Bukowski & Hoza, 1989; Parker & Asher, 1993). Indeed, data from several recent samples indicate that approximately 6-10% of children who are well-liked by their classmates actually do not receive any reciprocated friendship nominations

(Parker et al., 1999). However, being popular provides a child with more opportunities for friendship than does peer rejection. It is also possible that through one's friendships one can gain popularity by being brought into the social network of his/her friend, thus providing the child with new opportunities to be liked by peers (Bukowski et al., 1996).

Assessing popularity. Since popularity and friendship are two distinct constructs, they require two different techniques to assess them. Sociometric nominations are the most frequently used technique in the literature for identifying the status of children relative to peers in the social network (popularity) (Coie & Dodge, 1983; Crick, 1996; Kupersmidt, Derosier, & Patterson, 1995).

Previously, researchers used unidimensional sociometric classification systems that simply identified children as popular or unpopular. More recently, two-dimensional sociometric classification systems (Coie, Dodge, & Coppotelli, 1982) have had a critical role in the investigation of children's peer relations. Typically children are asked to indicate the three peers of either sex that they like to spend the most time with, and the three that they least like to spend time with. Each child's total nominations for like most and like least are transformed into scores standardized across classroom within grade. This nomination technique provides measures of (a) acceptance (those children who receive many liked-most and few liked-least votes); and (b) rejection (those children who receive a high number of liked-least votes and a low number of liked-most votes). These standardized acceptance and rejection scores are used to create measures of sociometric preference and social impact (Coie et al., 1982). The sociometric preference score is calculated by subtracting the standardized rejection score from the standardized acceptance score and then standardizing the difference, providing a measure of the extent

to which children are liked or disliked by their peers. Social impact is calculated by adding the standardized acceptance and rejection score and standardizing the sum providing a measure of the degree to which children are noticed by their peers.

Using these two scores Coie et al. (1982) classified children as (a) popular - high preference and high impact scores; (b) rejected – low preference and high impact scores; (c) neglected – average preference and low impact scores; (d) controversial – average preference and high impact scores; and (e) average – average preference and impact scores.

Acceptable short-term stability has been found for this sociometric technique with elementary school children (Asher & Dodge, 1986; Coie & Dodge, 1988; Cillessen, Bukowski, & Haselager, 2000). Furthermore, peer acceptance and rejection scores have been reported to be relatively stable over 3 years ($r = .53$) (Kupersmidt, Derosier et al., 1995).

Thus, sociometric nominations provide a statement about the nature of the relationship between an individual child and his or her school peers. This technique does not provide information about the relations that are formed between specific children or groups of children, or provide insight in the social network as a unit.

Assessing friendship

Because friendship is a bilateral construct with reciprocity being a key feature, then assessments of friendship need to reflect this mutuality of friendship with nominations being confirmed by both children (Bukowski et al., 1996). One of the most widely used techniques in the literature is to ask children to name up to three of their best friends. A child is identified as having a mutual friendship when the child is nominated

not only by another child as a best friend but also reciprocates that choice (Parker & Asher, 1993).

While most researchers favour the use of reciprocated nominations to assess friendships (Bukowski et al., 1996; Parker et al., 1996), there is some debate in the literature as to how many friends children should be asked to nominate (Furman, 1996). When children are restricted to a limited number of friendship nominations, it may arbitrarily restrict the number of friendships a child may have. Conversely, an unlimited choice procedure may prompt some children to include children who are not really their friends (Rubin et al., 1998). To avoid these potential problems, it is generally accepted that three friendship selections are sufficient and typical of most studies in the friendship and friendship quality literature (Grotmeter & Crick, 1996; Parker & Asher, 1993; Rys & Bear, 1997).

Moreover, there are variations in the literature with respect to the criterion used by researchers for identifying reciprocated friendships (Bukowski et al., 1996). Some researchers use a strict reciprocity criterion whereby each child in the friendship must choose the other as a “very” best friend. Other researchers use a more liberal criterion with children only required to receive a reciprocated choice, i.e., it is irrelevant if it was a first, second, or third choice. Since a restrictive method can severely limit the number of identified reciprocated friendships, a more liberal criterion is often accepted (e.g., Grotmeter & Crick, 1996). In a study by Parker and Asher (1993), the strict reciprocity method of friendship (i.e., each child had designated the other as a “very” best friend) held for 55% of the sample.

Another problem that can affect the validity of friendship nominations is the possibility that by restricting nominations to only classmates (a common practice), friendships with children in other classrooms may be overlooked. In a recent study (Kupersmidt, Derosier et al., 1995) 77% of best friendship nominations were given to same class peers while a smaller percentage (23%) were given to peers in another class or outside the school. Since we were examining the social relationships of children, which may extend beyond the classroom, the decision was made to allow children in this study to nominate friends in their grade outside of their classroom.

Social Status and Social-Psychological Adjustment of Relationally Aggressive Children

An extensive body of research has demonstrated that childhood aggression has the potential to be psychologically and socially harmful to both the perpetrators and their victims (Boulton & Underwood, 1992; see Coie et al., 1990; Parker & Asher, 1987, for reviews). However, this body of research has focused primarily on overtly aggressive boys. In recent years, researchers have begun to examine the social-psychological difficulties that are associated with aggression in girls, particularly relationally aggressive girls (Crick, 1996; Crick & Grotpeter, 1995; Rys & Bear, 1997; Tomada & Schneider, 1997). Recent research suggests that elementary school-aged children who frequently engage in relationally aggressive behaviours may be at risk for social-psychological adjustment problems such as isolation from peers, loneliness, and depression (Crick, 1996; Crick, 1997; Crick & Grotpeter, 1995; Crick & Grotpeter, 1996; Rys & Bear, 1997; Tomada & Schneider, 1997). Moreover, school-age girls who engage in relational aggression are more likely to be rejected and isolated by their peers (Crick, 1996; Crick & Grotpeter, 1996; Rys & Bear 1997) compared to nonrelationally aggressive children.

Crick and Grotpeter (1995) (reported previously) examined the social-psychological adjustment of relationally aggressive children by asking them to complete a loneliness scale, a social anxiety scale, a depression inventory, and the Children's Peer Relations Scale (Crick, 1991). This instrument assesses six aspects of children's perceptions of their peer interactions: perceived peer acceptance, isolation from peers, negative affect, engagement in caring acts, engagement in overt aggression, and engagement in relational aggression. Using the procedure described by Coie and Dodge (1983), sociometric nominations were used to identify five sociometric status groups, popular ($n = 63$), controversial ($n = 26$), average ($n = 153$), neglected ($n = 69$), and rejected ($n = 56$).

Relationally aggressive children were found to be significantly more disliked by their peers than nonrelationally aggressive children. In addition, the association between relational aggression and social status was examined. Controversial status children (those who received both positive and negative sociometric ratings from their peers) were significantly more relationally aggressive than rejected children, who in turn, were more relationally aggressive than popular and neglected children. Thus, some relationally aggressive children (controversial status) were well liked by some peers. Furthermore, a gender difference was found in the self-reported social adjustment (peer status, loneliness, social anxiety) of relationally aggressive children. Specifically, relationally aggressive girls reported more loneliness, as well as poorer acceptance and greater isolation from their peers than did nonrelationally aggressive boys and girls. No such differences were found between relationally aggressive boys and their nonaggressive peers. The authors concluded that relational aggression is significantly related to

maladjustment (e.g., self-report loneliness, depression and social isolation, as well as peer rejection) particularly for girls. These findings highlight the reasons why we need to look further at relationally aggressive girls and their social relationships.

While these findings are interesting, caution must be used when interpreting these results as the research reviewed to this point has been correlational in design and therefore cause-effect statements can not be made. Although it seems likely that relationally aggressive behaviours may lead to social-psychological adjustment difficulties such as peer rejection and loneliness, it is also possible that peer rejection and feelings of loneliness and depression may cause children to engage in relationally aggressive behaviours in order to get back at the peers who are rejecting them. In order to examine whether relational aggression is a significant predictor of children's risk status, Crick (1996) and Tomada and Schneider (1997) conducted longitudinal research to determine whether relational aggression was predictive of future, as well as concurrent, social-psychological problems.

Crick (1996) used a teacher rating measure, in addition to peer-nominations of social behaviour to assess social behaviour and social adjustment at three intervals over a six-month period. Crick reported that both relational and overt aggression, as assessed by peers at the first time period, significantly predicted future peer rejection for both boys and girls. Furthermore, relational and overt aggression were found to be negatively related to future peer acceptance for girls. In addition, when overt aggression was controlled for statistically, boys' peer rejection was most clearly linked to overt aggression, and relational aggression failed to explain additional variance. Relational aggression provided unique information in the prediction of peer rejection for girls,

beyond that accounted for by overt aggression. Furthermore, Crick (1996) found that relationally aggressive girls were increasingly rejected by their peers over the course of the six months. A pattern of high levels of aggressiveness (relational or overt) combined with low levels of prosocial behaviour was particularly problematic for girls and boys. This is consistent with Parkhurst and Asher's (1993) contention that aggressive behaviour along with deficits in prosocial behaviours is critical for becoming rejected.

Similarly, Rys and Bear (1997) explored the association between relational aggression and popularity (peer acceptance and rejection) and friendships in children in grade 3 and 6 using the peer nomination measure of relational aggression developed by Crick and Grotpeter (1995), a measure of reciprocated friendships and sociometric nominations of peer acceptance. They also examined whether prosocial behaviours account for variance in popularity and rejection beyond that explained by overt and relational aggression.

Results revealed that aggressive behaviour better predicted rejection while prosocial behaviour better predicted acceptance. Specifically, for boys, rejection was most clearly linked to peer nominations of overt aggression, while for girls, rejection correlated more strongly with peer nominations of relational aggression, and explained variance in rejection beyond that accounted for by overt aggression. Furthermore, the use of relational aggression led to rejection by peers, particularly when prosocial behaviours were not part of the child's behavioural repertoire. Thus, the authors concluded that, similar to overt aggression, the use of relational aggression leads to rejection by peers, particularly by those peers toward whom the rejected child does not direct prosocial behaviours.

Using a younger Italian sample, Tomada and Schneider replicated Crick and Grotpeter's (1995) finding that both relational and overt aggression are predictive of concurrent peer rejection. Specifically, results revealed rejected children were significantly higher in both overt aggression and relational aggression than all other groups (popular, neglected, average) except the controversial group. Controversial groups' scores for both forms of aggression were significantly higher than were popular or neglected groups. Furthermore, relational aggression was associated with a decline in peer acceptance over the five months for both boys and girls, providing support for Crick & Grotpeter's (1995) contention that relational aggression is a risk factor in future social maladjustment.

In summary, to date only three studies have specifically examined the sociometric status of relationally aggressive children. One found that the use of relational aggression led to rejection by peers (Rys & Bear, 1997). Another found that controversial status children were significantly more relationally aggressive than rejected children (Crick & Grotpeter, 1995). The final study found that rejected children were more relationally aggressive than controversial children (Tomada & Schneider, 1997). More research is needed before any firm conclusions can be drawn. However, based on these three studies, it appears that controversial and rejected children are the most relationally aggressive. On the other hand, not all relationally aggressive children are controversial or rejected. While it has been documented in the literature that controversial and rejected children's level of aggression is higher than that of the other sociometric groups, the form of aggression examined in these studies has been overt (Coie et al., 1982; Coie & Dodge, 1988; Newcomb et al., 1990). Crick and Grotpeter (1996), Rys and Bear (1997) and

Tomada and Schneider (1997) have expanded our knowledge of controversial and rejected children by providing evidence that they can be relationally aggressive as well as overtly aggressive.

Crick (1997) speculated that relationally aggressive controversial status children are selective towards whom they direct their relationally aggressive behaviours. Some peers are never targets of these behaviours while other peers are frequent victims of these acts. Therefore, Crick suggested that controversial children may receive disliked nominations from peers who have been the targets of their relationally aggressive acts while they may receive liked nominations from peers who have not been targets of this behaviour. When one considers the fact that children use relationally aggressive behaviours to manipulate relationships it is possible that controversial, relationally aggressive children play a critical role in peer groups by controlling the structure and nature of the group, (e.g., controlling who is included in activities or who is excluded). In fact, research conducted by Coie and Dodge (1988) found that peers rated both popular and controversial boys as being more cooperative, helpful, and better leaders (prosocial behaviour) than average, neglected or rejected boys. However, controversial children were also highly active and aggressive and aroused peer group anger (Coie et al., 1990).

In sum, it has been documented that relational aggression is harmful to those girls that use it, independent of overt aggression, often leading to peer rejection (Crick & Grotpeter, 1995; Crick, 1996; Rys & Bear, 1997; Tomada & Schneider, 1997). This finding is disturbing given the fact that rejected children have been found to be at serious risk for both concurrent and later social maladjustment (Coie & Cillessen, 1993; Parker & Asher, 1987). Indeed, relationally aggressive children may be at risk for serious

adjustment difficulties as they report significantly higher levels of loneliness, depression and isolation relative to their nonrelationally aggressive peers (Crick & Grotpeter, 1995). These links have been found to be particularly true for relationally aggressive girls and provide evidence for the importance of assessing relational aggression, in addition to overt aggression, in order to understand the peer status and social-psychological adjustment difficulties for girls.

In light of these facts, it is important when one studies the social relationships of girls that the function of relational aggression in peer relations (e.g., friendships, social clusters) be examined. To date there has been limited research that has examined the friendships of relationally aggressive preadolescent girls. The next section of this paper will review this existing research.

Friendships and Relational Aggression

In recent years, researchers have begun to examine the significance of dyadic friendships in children's social development. For example, friends provide children with emotional support, affection, self-validation, companionship, help, and opportunities to practice conflict resolution within a supportive environment. All of these experiences have been found to be important for the acquisition of competencies and interpersonal skills, for success in future relationships, and for emotional well-being (Newcomb & Bagwell, 1996; Rose-Krasnor, 1997). Furthermore, it has been suggested that having one best friend, even when rejected by the larger peer group, can serve as a buffer against the negative impact of peer rejection (Kupersmidt, Burchinal, & Patterson, 1995). For example, it has been suggested that rejected children with a best friend are provided with

opportunities to practice and refine social skills, which may result in less externalizing problems (Parker & Asher, 1993).

Recent theoretical and empirical extensions of this work, however, suggest that the quality (e.g., degree of intimacy) and behavioural characteristics of the friends (e.g., aggressiveness) play an important role in children's social development (Hartup, 1996). For example, it has been documented that overtly aggressive children are just as likely to have friends as nonaggressive children (Cairns et al., 1988). However, overtly aggressive children tend to form reciprocated friendships with similarly aggressive children (Kupersmidt, Derosier, et al., 1995). Thus, theorists suggest that while friendship relations are supportive contexts for development and are associated with enhanced opportunities to engage in behaviors related to social emotional, and cognitive growth (Newcomb & Bagwell, 1996) they may also serve as a context in which aggression is supported and/or maintained (Crick et al., 1999).

Despite emerging evidence that the use of relationally aggressive behaviours may be a critical feature of girls' peer relations, there have been few studies that have investigated the effect of aggression on children's friendships and even fewer that have looked specifically at relational aggression. There are only two published studies (Grotmeter & Crick, 1996; Rys & Bear, 1997) that have examined the friendships of relationally aggressive children. Relationally aggressive children manipulate their social connections and therefore, it is likely that engaging in these behaviours has implications for their friendships. Before reviewing these two studies, the information on gender differences in children's friendships that is of relevance to the present study is summarized.

Gender differences. A large body of research exists regarding sex segregation in children's peer groups (see Daniels-Beirness, 1989; Eder & Hallinan, 1989; Erwin, 1993 for reviews). In general, this research suggests that school-aged children prefer same- to opposite-sex playmates. Sex segregation in children's friendships is virtually complete from grade three. From about grade six it shows a relatively consistent and gradual decline (Erwin, 1993).

Moreover, boys' friendships are commonly experienced within the context of a larger group of three or more while girls tend to have one or two close friends (Bjorkqvist, Lagerspetz, et al., 1992; see Daniels-Beirness, 1989; Erwin, 1993 for reviews). Consequently, Bjorkqvist, Lagerspetz, et al. (1992) suggest that this "tighter" friendship structure that is more characteristic of girls' peer groups may facilitate the use of the manipulation of friendships as an aggressive strategy. Most probably this same type of manipulation would not work as well in boys' peer groups because it would be more difficult to use behaviours such as social exclusion as a means of control if boys groups are larger and not as "close". Thus, it is important to examine the social relations of aggressive girls within gender, because during the middle childhood period, children are associating with same sex peers (Daniels-Beirness, 1989).

Research suggests that girls appear to have distinctive friendship patterns that revolve around shifting, dyadic alliances that are jealously guarded and reflect the notions of exclusivity, intensity, intimacy and self-disclosure (Buhrmester & Prager, 1995; Eder & Hallinan, 1978; Erwin, 1993). For example, Parker and Asher (1993) found that while boys' and girls' friendships did not differ in conflict and betrayal, and companionship and recreation, girls' friendships were characterized by more validation and support, intimacy,

less difficulty resolving conflict, and more help and guidance than boys' mutual friendships. These findings are consistent with a growing body of research that has examined differences in boys' and girls' friendships (Erwin, 1993; Furman & Buhrmester, 1985; Grotzinger & Crick, 1996) and found that in general, girls' friendships are more exclusive and intimate than those of boys.

Since there are considerable variations in individual characteristics that children bring with them to their friendships, it seems probable that not all friendships will be alike. Furthermore, these differences in friendships are likely related to subsequent adjustment, and thus in recent years, researchers have tried to develop procedures for reliably and validly assessing them (Rubin et al., 1988). It has been suggested in the literature that when assessing friendship success or adjustment, two different elements of friendship adjustment should be examined (Hartup, 1996; Parker & Asher, 1993). The first element is whether or not a child has a reciprocated, mutual friendship with another child. The second is the quality of the child's best friendship, specifically, how much companionship and support it provides, and the level of conflict these friends experience.

Reciprocated friendships. Rys and Bear (1997) examined the relation between reciprocal friendships, peer relations and relational aggression in girls. Children were asked to name their three "best" friends in the class. The percentage of relationally aggressive girls with at least one reciprocated friendship (85%, 17 of 20 girls) did not differ from the percentage of nonaggressive girls with at least one reciprocated friendship (80.4%, 86 of 107 girls). Yet, relational aggression, in girls, correlated significantly with rejection ($r = .61$). Thus, Rys and Bear concluded that relationally aggressive children do have reciprocated friendships even when they are rejected by the larger peer group.

Similarly, Grotmeter & Crick (1996) found that relationally aggressive girls were as likely as nonaggressive girls to have a mutual friend. However, neither of these studies examined the behavioural or social status of these reciprocated friends. Previous research on children's peer relationships has shown that having at least one reciprocal, dyadic friendship buffers a child from some of the negative effects of peer rejection (Parker & Asher, 1993).

Friendship quality. It has been suggested in the literature that the quality of the friendship may be of greater importance to determining adjustment than simply having or not having a reciprocated best friend (Hartup, 1996; Kupersmidt, Burchinal, et al., 1995). Although many children have a best friend, there are great variations in the quality of these friendships in terms of their level of support and conflict. Parker and Asher (1993) examined both supportive friendship qualities (e.g., companionship, validation, caring, help and guidance) and conflict in combination with group acceptance in the prediction of loneliness. Each friendship quality made a separate contribution to the prediction of loneliness, even after controlling for peer acceptance.

Because relational aggression involves manipulating friendships, Crick and Grotmeter (1995) were interested in examining the friendships of relationally aggressive children. In a pilot study, Grotmeter (1993) (cited in Grotmeter & Crick, 1996) investigated the quality of relationally aggressive girls' friendships compared to their nonaggressive peers and the relative importance that relationally aggressive girls placed on friendship qualities. Using the peer nomination measure developed by Crick and Grotmeter (1995), 835 fourth- and fifth- grade children were screened for aggression status (relational or overt). Reciprocal friendships were identified using the criteria

specified by Parker and Asher (1993). Children nominated up to three best friends and children who reciprocally nominated each other as a "best friend", "second best friend" or "next best friend" were defined as friends. The qualitative features of the children's friendships (e.g., levels of conflict, caring, exclusivity and validation) were assessed using the Friendship Qualities Measure (FQM) (Grotmeter & Crick, 1996) which is a revised version of the Friendship Qualities Questionnaire (FQQ) (Parker & Asher, 1993). A second measure, The Importance of Friendship Qualities Measure (IFQM) was developed for this pilot study to assess the importance that relationally and overtly aggressive children place on the qualities identified in the FQM.

Only relationally aggressive girls (designated by a half standard deviation cut off) were included in the analyses in this pilot study. Results revealed that while relationally aggressive girls were as likely as nonaggressive peers to have mutual friendships, they did not buffer their friends from relational aggression. They reported using more relationally aggressive behaviours in their friendships, but also engaged in more intimacy (i.e., closeness and self-disclosure) than did nonaggressive girls. Further, friends of relationally aggressive girls reported more conflict and betrayal, greater levels of relational aggression, and more demands for exclusivity in their relationship than did girls who were friends with nonaggressive girls.

Grotmeter and Crick (1996) expanded upon this pilot study by including a sample of children who were overtly aggressive as well as relationally aggressive children. A more extreme sample of aggressive children was identified, using a cut-off score of one standard deviation above the mean for relational and overt aggression on the peer nomination measure developed by Crick and Grotmeter (1995). In addition, the FQM

underwent a number of revisions. Findings confirm results of the pilot study.

Relationally aggressive children reported engaging in more intimate and exclusive friendships than did their nonaggressive peers. Friends of relationally aggressive children perceived their friendships to be more exclusive with higher levels of conflict, betrayal, and relational aggression than nonaggressive children did. In contrast, overtly aggressive children reported lower levels of intimacy in their friendships, and a tendency to use aggression along with their friends to harm others outside of their friendship.

Furthermore, they reported that this activity was important to them and that they would be upset if their friends did not engage in this activity with them. Thus, the researchers speculated that this indicates that children who befriend overtly aggressive children may be pulled into aggressive acts, even if they are not themselves overtly aggressive in contrast to relationally aggressive children who report using relational aggression within the friendship.

It is of interest to note that relationally aggressive children reported receiving high levels of self-disclosure from their friends, yet they did not reciprocate this self-disclosure. Grotper and Crick (1996) hypothesized that relationally aggressive girls may encourage high levels of intimacy in their friendships in order to have power over their friends (i.e., threatening to divulge secrets if the friend does not comply). However, they pointed out that further research is needed to test this hypothesis as it is feasible that relationally aggressive children select friends who are more revealing of their secrets.

Finally, the friendships of aggressive children did not differ from those of nonaggressive children on the dimensions of companionship, validation and caring,

which the researchers interpret provides support for the hypothesis that their friendships provide some supportive functions.

Summary. Relationally aggressive girls were as likely as nonaggressive girls to have a mutual friend, even when they are rejected by the larger peer group. Friendships of relationally aggressive boys and girls did not differ from those of nonaggressive children on measures of caring, companionship, and validation. However, relationally aggressive children's friendships did differ from nonrelationally aggressive children in several ways. First, relationally aggressive children and their best friends reported higher levels of intimacy in their friendships than did other children. This high level of intimacy probably puts the nonaggressive friend at risk because the relationally aggressive child has ready access to important, private information about the other child. A relationally aggressive child could easily use threats to disclose the information to manipulate his/her friend. Second, a high level of exclusivity exists in the friendship of the relationally aggressive child. Again, this may put the friend at risk of being manipulated because he/she may have limited friends to turn to as alternatives. A final feature of these friendships is their high degree of internal relational aggression. Relationally aggressive children direct many of their aggressive behaviours towards their friends. This is in direct contrast to overtly aggressive children who behave aggressively toward those external to the friendship rather than toward each other.

Finally, it has been established in the literature that overtly aggressive children tend to form friendships with one another. A recent study was conducted by Kupersmidt, Derosier, et al. (1995) that examined similarity as the basis for children's friendships with a large sample ($N = 554$) of third- and fourth-grade children. Results showed a similarity

in behaviour of friendship dyads, i.e., the more similar two children were to one another in terms of their level of overt aggression, the more likely they were to be friends. However, it is still not known whether this is the case for relationally aggressive children as this has not been reported in the literature.

It is interesting to note that relational aggression in girls was more likely to be associated with peer rejection than was overt aggression, yet these rejected relationally aggressive girls do have reciprocated friendships. This leads to the question of whether relationally aggressive children are members of larger social clusters and if so, what position they hold within these clusters in the social network, do they belong to salient clusters, and who the members of these social clusters are.

Social Networks of Aggressive Children

In recent years, researchers have been studying the social clusters and larger social networks of aggressive children (Bagwell et al., 2000; Cairns et. al., 1988; Xie, Cairns, & Cairns, 1999). Social clusters are cohesive groups of individuals who affiliate with one another, which evolve by the choice of the individuals involved (Crockett, Losoff, & Peterson, 1984). They typically range in size from three to nine children and are usually comprised of same-sex members (Coie & Dodge, 1998; Epstein, 1986). These social clusters are viewed as being important contexts that shape and support the attitudes, behaviours, and values of its members (Adler & Adler, 1985; Cairns & Cairns, 1991; Harris, 1995; Kindermann, 1996). They serve not only the prosocial functions of providing for intimacy and helping to define the personal identity of the members, they also serve to express individual aggression and control. Researchers who study the larger social networks of children argue that in order to clarify the dynamics of social influence,

reciprocity, and change, techniques are required that examine the actual relationships that children form within their social network (Cairns, Leung, Buchanan, & Cairns, 1995).

In this section, the extant research investigating the social clusters and social networks of both overtly and indirectly aggressive children during the middle childhood period will be examined. Unfortunately, a considerable void exists in this literature when examining the social networks of relationally aggressive children as there are no published studies in this area to date. Three recent studies of social networks of aggressive children are addressed in considerable detail (Bagwell et al., 2000; Cairns et al., 1988; Xie et al., 1999). Prior to reviewing these studies, an overview of the methods of social network analysis is provided.

Methods of social network analysis. When examining children's peer relationships using social network analysis, the clusters of relationships within the larger peer group to which the child belongs are examined. Clusters of relationships are identified and compared on various characteristics such as aggressiveness of members. Moreno (1934) was one of the first researchers to use this type of analysis. For example, he asked delinquent girls who lived in a detention centre who the five girls they would most like to live with were. These choices were then connected, creating a sociogram that illustrated the relationships between the children and revealed dynamics such as degree of reciprocity, how dense the interconnections were within a cluster, and the level of integration between the clusters.

Generally, social networks have been studied in the literature for three reasons. First, of interest to researchers is whether a child is a member of a cluster and how the child is embedded into the structure of the social network. Typically researchers (Cairns

et al., 1988; Kindermann, 1998) ask children to identify who associates with whom, thereby providing information on how many children each child is linked to and whether there are specific patterns of links between groups of children. Once it has been determined if a particular child belongs to a cluster, then the strength of the child's links to the cluster can be determined. For example, is the child linked to many other children in the cluster, or perhaps to just one. This type of assessment provides an index of the child's position within the social network (Rubin et al., 1998).

Once it has been determined who belongs to which cluster, the structural properties of the cluster can be assessed including: (a) the size of the cluster (number of members), (b) the position of the cluster within the larger social network (how salient the cluster is), and (c) the patterns of association within the group (how many links there are among group members) (Rubin et al., 1998). This pattern of associations is typically referred to as either *dense* (most members are linked to one another) or *loosely organized* (some members have no links to others at all).

Social network analysis also allows for the assessment of psychological characteristics of children's group, providing a profile of the group that represents the interests and characteristics of the members of the group.

Social networks of overtly aggressive children. Cairns and his colleagues (Cairns et al., 1988) conducted a large-scale study that examined the social networks and aggressive behaviours (form not identified) of boys and girls in grades four and seven ($N = 695$). They were particularly interested in the relationship between aggressive behaviours and social networks of peers. Not all members of a social cluster associate with equal frequency. Some members hold more central (nuclear) positions and some

hold more peripheral positions. In a review of studies that examined cluster formation, Hallinan (1981) identified several processes that affect formation and position of members. Some clusters evolve around a close friendship of two individuals. These two friends are at the center of the cluster with their friends joining in for specific activities. Other clusters form around a central individual who becomes the leader and establishes the rules and expectations for the group. Cairns and colleagues were specifically interested in the social positions of highly aggressive children in social networks and the role of peers in promoting and supporting aggressive behaviour patterns.

Cairns and his associates hypothesized that highly aggressive children would be just as likely as nonaggressive children to report that they belonged to social clusters. Furthermore, they proposed that aggressive behaviours would tend to be reciprocal and contagious within social clusters and, therefore, there would be a high degree of similarity in behaviour patterns within social clusters, i.e., highly aggressive children (both boys and girls) would affiliate with peers that were similarly aggressive. However, they expected that overtly aggressive girls would be subjected to more rejection and ostracism by peers than boys since it is generally considered less socially acceptable for girls to engage in overtly aggressive behaviour.

From a larger sample, 40 subjects (20 boys and 20 girls) who were considered to be highly aggressive were identified by school personnel. They were then matched with a control group of nonaggressive students in terms of physical size, socioeconomic status, and age. Using a free recall technique, each child was asked to nominate the peers he or she hung around with in their grade as well as the members of other peer groups he or she knew about in their grade. Thus, each respondent generated one or more separate groups

or clusters of persons. Each child was also asked to identify any children who didn't hang around with any particular group, i.e., isolates. They were also asked to identify their best friends. Friendship nominations were checked across all subjects to confirm reciprocity. In essence, these researchers were trying to distinguish between particularly salient clusters (and children) and not especially salient clusters (and children). Saliency refers to groups and children who are most frequently noticed.

The researchers created a "social map" detailing the social clusters and networks across each grade by aggregating individual perceptions of the social network. Thus, a composite social map was created for each grade in which certain groups of children, or clusters, were identified as more or less central than others. The determinant of centrality for the clusters as a whole was simply the average of the two children in the cluster who received the highest number of nominations. Each child's centrality within each cluster was also determined. The determinant of centrality for each child was the number of times a child was identified by others as belonging to that specific cluster. It is important to note that centrality does not mean level of popularity, power or influence, but how high profile each person or group is for either positive or negative reasons.

The breakdown of centrality both for the clusters as a whole within the larger social network and for the individuals within the cluster contained three possible categories: nuclear, secondary, and peripheral. *Nuclear* status was assigned to those clusters (or individuals) who were in the upper 30% rank of nominations, *peripheral* were those in the lowest 30% rank of nominations, and *secondary* status was assigned to those in the midrange 40% rank of nominations. Cluster status within the class and individual status within the cluster were used to determine a student's overall social network

centrality. *High centrality* meant the individual was a nuclear member of a high-prominent cluster. *Median centrality* identified individuals who either had secondary status in a high-prominent cluster or nuclear or secondary status in a cluster of median prominence. *Low centrality* individuals were: (a) peripheral members of any cluster, (b) members of low-prominent clusters, or (c) isolates, i.e., they were not identified within any cluster. Thus, in the social cognitive map procedure, respondents describe the network as a whole and the resultant individual "maps" are combined to provide a composite picture of the social network (Cairns, Perrin, & Cairns, 1985).

Peer nominations of conflict instigation were obtained from each subject and summed for each individual yielding a peer nomination conflict score. Teachers completed a measure that assessed interpersonal competency (3 factors of aggressiveness, popularity, and academic competence) for each subject. The factor of aggressiveness consisted of three items: "gets into trouble at school", "fights a lot", and "always argues" (overt aggression). Each subject completed a self-report version of the same measure.

Results indicated that aggressive children were less popular and more frequently disliked than nonaggressive children. This outcome is consistent with other findings that aggressive children are viewed as generally unlikable and unpopular (Coie & Dodge, 1983; Rys & Bear, 1997). However, there was no difference between highly aggressive subjects and control subjects in the number of children with reciprocated friendships. This finding is also consistent with other research results suggesting that aggressive children are just as likely as nonaggressive children to maintain a reciprocal friendship (Grotperter & Crick, 1996; Rys & Bear, 1997). Furthermore, there was no difference between highly aggressive subjects and control subjects on cluster membership. Ninety-

five percent of the highly aggressive boys and girls were members of social clusters. The hypothesis that highly aggressive children (both boys and girls) would affiliate with peers that were similarly aggressive was partially supported. For the children in grade four, central members of male clusters were highly similar for aggression, but members of female clusters were not. For the children in grade seven, nuclear members of both the male and female clusters were highly similar with respect to overt aggression. Furthermore, analyses of reciprocal best friend nominations revealed that boys in grade four, and both boys and girls in grade seven tended to form affiliations with other aggressive peers.

These findings are consistent with other studies indicating that overtly aggressive children tend to affiliate with others who share similar behaviour patterns with respect to aggression (Boivin & Vitaro, 1995; Boivin & Cote, 1991; Kupersmidt, Derosier, et al., 1995). It has been suggested that this kind of affiliation would perhaps be likely to reinforce positive attitudes toward aggression and, eventually to generate occasions for delinquent and antisocial acts (Cairns & Cairns, 1991).

In summary, even though overtly aggressive boys and girls were considered to be less popular and more disliked by their peers, they were just as likely to be members of social clusters. Some limitations of this study should be noted. First, it is not clear what criteria were used by school personnel in selecting the highly aggressive subjects nor what forms of aggression they were identifying. However, for a couple of reasons it would seem probable that the children in the highly aggressive sample displayed overt forms of aggression. First, the composition of school personnel used to identify these students consisted of principals, guidance counselors and teachers. It seems likely that

principals would be identifying children who usually used overt aggression as these are the children who are most frequently referred to them for disciplinary purposes.

Secondly, the three items making up the aggression factor of the teacher measure were measuring overt aggression (physical and verbal). In light of these facts, it seems likely that aggressive behaviour consistent with relational aggression was not examined in this study.

In a more recent study, Xie et al. (1999) studied fourth- through seventh-grade children in an attempt to examine the formation of their social clusters in order to determine whether highly overtly aggressive children tended to affiliate with each other. The researchers were also interested in determining whether aggressive children held a central position in the social network or if they were rejected by their peers. A child's position in a social network determines, in part, how many peers the child has direct and indirect contact with. This, in turn, influences how many opportunities the child has to form friendships. If the network is small, or if the child has few positive links with others in the network, then there are fewer opportunities to form friendships than would be the case if the network is large with many positive links (Bukowski et al., 1996).

The sample consisted of 506 African American children (291 girls and 215 boys). Measures of the student's social and cognitive adaptations were assessed using the Interpersonal Competence Scale (Teacher Version and Self-Report Version) (Cairns, et al., 1985). This instrument consists of 15 items and factor analysis has five factors: overt aggression, academic competence, popularity, Olympian (athletic competence and physical appearance) and affiliation. Social clusters were identified through the use of the social cognitive map procedure previously described.

Results revealed that most of the clusters were comprised of students of the same gender (89%) who were in the same class (78%) which replicates the findings from Cairns et al., (1988). The size of the social clusters was similar for boys ($M = 5.05$) and girls ($M = 5.28$). When teacher ratings were used, girls in the same social clusters were found to be similar to each other in almost all behavioural and cognitive domains. It should be noted that for overt aggressive behaviour, only girls in grades six and seven displayed significant similarities to other girls within the same social cluster. Consistent with findings from Cairns et al. (1988), there were not significant similarities in aggression for girls in grades four or five within peer groups. Intragroup similarities were also found for grade six and seven boys on all five factors when teacher ratings were used. For boys in grade four and five, significant similarities were only found for aggression and affiliation.

An examination of the association between the level of aggression and overall social network status revealed that highly aggressive children were not excluded from membership in social clusters. Boys that were most central to the social networks had the highest levels of aggression. On the other hand, for girls high social network centrality was associated with high levels of popularity, not aggression. Since the preferred form of aggression used by girls is relational aggression, it is quite possible that those girls with the highest level of relational aggression would be the most central members of social groups, but this form of aggression was not examined in this study.

Three types of social network configurations were identified by statistical examination of the scores of each cluster's members on teacher ratings of aggression, popularity, academic competence, athletic competence, physical appearance, and

affiliation. Highly competent girls were found to affiliate with highly competent peers. On the other hand, at-risk girls (high overt aggression, low popularity, academic competence, affiliation, athletic competence and physical appearance scores) tended to affiliate with at-risk social clusters. Similar results were found for boys at both age groups.

In summary, this study demonstrated that members of a social cluster tend to come from the same classroom. Also, both highly overtly aggressive girls and boys were perceived by peers to associate with others and were members of social clusters. Furthermore, highly aggressive girls in grades six and seven and boys in grades four to seven tended to associate with other aggressive girls and boys, while nonaggressive girls and boys tended to associate with nonaggressive peers. These findings are consistent with findings from other studies (Bagwell et al., 2000; Cairns et al., 1988). Highly aggressive boys were often the most central members of a cluster but the same was not true for overtly aggressive girls.

Similar to the Cairns et al., (1988) study, it is not clear what forms of aggression the subjects in the Xie et al. (1999) study exhibited. However, the three items making up the aggression factor of the teacher measure were measuring overt aggression. In light of this fact, it appears that aggressive behaviours consistent with relational aggression were not measured. As a result, while both studies provided evidence that overtly aggressive children operate in social clusters with individuals with similar behaviour patterns, they do not provide evidence as to whether the same is true for relationally aggressive individuals.

To extend our knowledge on relationally aggressive girls and further our understanding of the role of peer social networks in supporting aggressive girls' behaviour patterns, research is needed that assesses where relationally aggressive girls are located within the social networks.

Social status and social network position. Very little research has been conducted that has specifically examined social network membership as a function of peer social status. Social clusters of children have been thought to have a critical role in influencing the social behaviour, attitudes and social-psychological adjustment of children (Adler & Adler, 1995; Kindermann, 1996). Cluster members provide normative and comparative reference and influence individual members' attitudes and behaviours (Harris, 1995). In order to gain entry into or maintain status within a specific group, children engage in group sanctioned behaviour (Adler & Adler, 1995). For those children who are rejected by the larger peer group, their range of social opportunities are effectively reduced, leaving them to associate with similarly rejected children and deviant peers who may be less supportive, and not as able to effectively model prosocial behaviour and positive social skills (Coie, 1990). Indeed, the association between rejection and delinquency has been well documented (Kupersmidt et al., 1990; Parker & Asher, 1987). This leads to the question of whether rejected children are excluded from social clusters or whether rejected children are members but with other similarly less socially competent peers.

In a large study carried out by Bagwell et al. (2000), the social clusters and overtly aggressive behaviours of boys and girls in grade four were examined. Of interest was the interplay between social status and cluster membership. The definition of clusters used by the researcher was "cohesive groups of youth who spend time together"

(p. 281). The relation between rejected peer status and affiliation with children who often get into trouble (deviant peer clusters) was explored. Specifically, the researchers studied the deviant peer associations of aggressive-rejected preadolescents in comparison to aggressive-nonrejected preadolescents.

Bagwell and her associates expected that children who were rejected by their peers would be more peripheral members of their cluster than would be other members. Furthermore, they hypothesized that the clusters to which rejected children belonged would be smaller in structure relative to other clusters and would consist of lower status peers. The authors expected that rejected children would be less central members of clusters. They proposed that both overtly aggressive-rejected and aggressive-nonrejected children would be more closely affiliated with deviant peer clusters than their nonaggressive peers. However, within the aggressive subsample, aggressive-rejected children would be more peripheral members of the deviant peer clusters than aggressive-nonrejected youth.

Grade four students in eight schools ($N = 824$) participated in the study and were included on the sociometric rosters. Bagwell and her associates adapted Cairns et al. (1988) method for identifying peer clusters in schools with a large population. All students who received parental consent to take part in the study ($N = 623$) participated as sociometric voters and were asked to indicate the peers with whom they hung around. Peer perceptions of subject's behaviours were obtained through the use of a peer nomination measure. This measure consisted of a peer sociometric, a question about who they "hang around with", and five prosocial and antisocial behavioural characteristics for which they nominated themselves and peers. Children were provided with a roster with

the names of all children in the fourth grade at their school to use when answering the questions. There was no limit to the number of nominations they could make. The behavioural items for which analyses were reported in this study were "starts fights, picks on other kids, and teases them" and "hangs around with kids who often get into trouble" (deviant peer associations). Using peer nominations of most liked and least liked, children were classified into the sociometric groups of popular, rejected, neglected, controversial or average using the method described by Coie et al. (1982).

Number of nominations received for the item "starts fights, picks on other kids, and teases them" were used to classify children as aggressive or nonaggressive (overt form). Relational aggression was not assessed. Children with standardized aggression scores greater than 1 were classified as aggressive. All other children were considered to be nonaggressive.

Cluster membership was determined through a factor analytic method, which was based on the social cognitive map procedure developed by Cairns et al. (1985). There were 109 clusters identified across the eight schools with membership size ranging from 3 to 17 and a median size of 7.

Consistent with findings from other research (Cairns et al., 1988, Xie et al., 1999), aggressive children were no less centrally involved in social clusters than nonaggressive children and were as likely to be nominated by cluster members as someone they like the most and hang around with. However, rejected children were less central members of their cluster than were average and neglected status peers and were only peripherally involved in the cluster. Moreover, consistent with prior research (Ladd, 1983), rejected

children belonged to smaller clusters comprised of peers with lower social status in comparison to average, popular, and controversial children.

Nearly 80% of the clusters were homogeneous with respect to gender. This finding is consistent with the large body of research that has investigated sex segregation in children's peer groups (see Daniels-Beirness, 1989, Erwin, 1993 for reviews). School-aged children prefer same-sex to opposite-sex playmates. In fact, the degree of sex segregation appears to be quite large, peaking in middle and late childhood.

A measure of each child's degree of association with clusters consisting of troublemaking peers, i.e., their centrality of involvement in deviant clusters was obtained. There was a main effect for gender with boys being more central members of deviant groups than girls for all five sociometric status groups. This finding is consistent with other research findings (Cairns et al., 1988) that preadolescent girls do not form friendships and social networks based on similarities in overt aggression and antisocial behaviour. Whether girls form such relationships based on similarities of relational aggression is a question for the present study. An examination of social status group differences in deviant peer cluster involvement revealed that controversial boys were more centrally involved than were rejected, popular and average boys, who were more involved than neglected boys.

Involvement in deviant peer clusters was examined as a function of aggressive versus nonaggressive behaviour. Both aggressive girls and boys were more involved with deviant peers than nonaggressive girls and boys. Moreover, rejected-aggressive children, particularly boys, were more involved with deviant peer clusters than almost all other children. However, they were not centrally involved in these clusters. In fact, it is

the nonrejected-aggressive children who were the most central members of the deviant clusters. Bagwell and associates suggested that nonrejected-aggressive children have social skills that are desirable for leadership within deviant peer clusters. Furthermore, they speculated that rejected-aggressive children may be particularly at-risk since they are more involved in deviant peer clusters than other children and, therefore, are in more contact with other children who are at risk and involved in delinquent activities.

Similar to the work of Cairns et al. (1988) and Xie et al. (1999) it is important to note that the measure of aggression used by Bagwell et al. (2000) reflects overt forms of aggression, rather than relational aggression which is more characteristic of girls. As a result, while these studies provide evidence that overtly aggressive preadolescent boys and overtly aggressive adolescent boys and girls operate in social clusters with individuals with similar behaviour patterns, they do not provide evidence as to whether the same is true for relationally aggressive individuals.

To extend our knowledge of relationally aggressive girls and further our understanding of the role of peer social networks in supporting aggressive girls behaviour patterns, the present research assesses the level of relational aggression demonstrated by members of the social network.

Social networks of indirectly aggressive children. Lagerspetz and his associates (Bjorkqvist, Lagerspetz, et al., 1992; Lagerspetz et al., 1988) examined the structure of children's social networks at ages 8, 11, and 15 using a modified version of the sociometry measure developed by Cairns et al. (1985). It was found that the usage of indirect means of aggression, a construct that overlaps with relational aggression, was partially dependent on the existence of a social network that facilitated the usage of such

behaviours for the purpose of harming others (Bjorkqvist, Lagerspetz et al., 1992; Lagerspetz et al., 1988). Specifically, at age 8, there was not a significant difference in the structure of boys' and girls' social networks. However, by age 11 there was a gender difference with girls forming tighter clusters and developing more dyadic friendships, whereas boys clustered in larger groups of at least three or more. This difference between boys and girls continued through to age 15 with girls spending more time socializing in pairs than boys. Consequently, Bjorkqvist, Lagerspetz et al., (1992) suggests that this "tighter" friendship structure characteristic of girls' social clusters enables girls to effectively use the manipulation of friendship patterns as an aggressive strategy. On the other hand, manipulation of friendships would not be as effective in boys' larger and less connected social clusters because there would be fewer opportunities to use relationally aggressive behaviours such as social exclusion as a means of control.

There have been no studies to date that have examined the social networks of relationally aggressive children but since relational aggression and indirect aggression are overlapping constructs, it would be expected that similar findings would emerge.

Developmental significance of social clusters. Social networks of children have been thought to play a critical role in influencing the social behaviour, attitudes and social-psychological adjustment of children (Adler & Adler, 1995; Kindermann, 1996). Social cluster members provide normative and comparative reference and influence individual members. For those children who are rejected by the larger peer group, their range of social opportunities are effectively reduced, leaving them to associate with similarly rejected children and deviant peers who may be less supportive, and not as able to effectively model prosocial behaviour and positive social skills (Coie, 1990). As

stated previously, the association between rejection and future social maladjustment has been well documented (Kupersmidt et al., 1990; Parker & Asher, 1987). Occupying a central position in the social network may provide a platform for either prosocial or antisocial leadership (Cairns & Cairns, 1991; Farmer & Rodkin, 1996; Salmivalli, Huttenen, & Lagerspetz, 1997). It could be hypothesized that if controversial, relationally aggressive girls are also high in prosocial behaviours, then they should occupy more central, leadership type positions in the social network. However, no research to date has been conducted on the social network positions of relationally aggressive children. The current study addresses this concern by looking at the overlap between social status, behavioural style, and network position of highly relationally aggressive children (predominantly girls).

Gender differences. Cairns et al. (1998) reviewed the existing literature on children's social networks and completed an analysis of their structure and function on a number of variables. When comparing the size of boys to girls' social clusters, they found that approximately half of the research conducted in the United States had not found a gender difference when the same methods and criteria were used. However, in none of the studies reviewed were girls' social clusters identified as being larger than boys'. Therefore, they concluded that there is a modest but consistent difference in cluster size with a tendency for boys to form larger clusters than girls. However, a large body of research has documented that there is gender segregation with respect to composition of groups in middle childhood. Most boys' relationships are with other boys and most girls' relationships are with other girls (Cairns et al., 1988; Eder & Hallinan, 1978; Hartup, 1996).

Social networks of aggressive children summary. The limited research on preadolescents' social networks has demonstrated that: (a) from early childhood to adolescence, there is a tendency for girls and boys to form same-sex clusters; (b) there are gender differences in the identification of social clusters based on similarities in behaviours. For boys they can be distinguished based on their similarities in overtly aggressive behaviours and prosocial behaviours, i.e., overtly aggressive boys tend to affiliate with other overtly aggressive boys, and nonaggressive boys and girls tend to associate with other nonaggressive children; (c) overtly aggressive children are as likely as nonaggressive children to be members of social clusters; (d) highly overtly aggressive boys are often the most central members of their social cluster but the same is not true for girls; (e) at-risk girls (high overt aggression, low popularity, academic competence, affiliation and athleticism) tend to affiliate with at-risk social clusters; (f) overtly aggressive girls and boys are more involved with deviant peers than nonaggressive girls and boys; (g) rejected children are less central members of their cluster than are average and neglected status peers, i.e., they are only peripherally involved in clusters; (h) rejected children belong to clusters that are smaller in size than do peers of average status; and, (i) the clusters that rejected children belong to are comprised of similarly low-status peers.

Summary of Social Relationships of Aggressive Children

To date, research on relational aggression has documented both social (peer rejection, social avoidance) and psychological (loneliness, depression and social anxiety) adjustment difficulties for both the perpetrators and the victims (Crick & Grotpeter, 1995; Crick, 1996; Crick & Grotpeter, 1996; Rys & Bear, 1997).

There are only two published studies that have examined the dynamics of relationally aggressive girls' friendships (Grotzinger & Crick, 1996; Rys & Bear, 1997). While several studies have examined the social networks of aggressive preadolescent girls and boys (Bagwell et al., 2000; Cairns et al., 1988; Xie et al., 1999) the form of aggression measured in these studies was overt in nature. While it has been suggested that girls do not form friendships and social networks based on similarities in aggression and antisocial behavior in preadolescence (Bagwell et al., 2000) this study assessed overt forms of aggression rather than the relational forms of aggression more typically used by extremely aggressive girls.

A second concern regarding the social networks of extremely relationally aggressive children is based on evidence that suggests that children often form mutual friendships with peers of similar social status (Dishion, 1990; Parker & Asher, 1993). Thus extremely relationally aggressive children who are rejected by the peer group may be particularly disadvantaged because they may end up associating with other socially unskilled children and gravitating toward social clusters comprised of deviant peers. Associations in deviant social clusters have been found to be concurrently and predictively related to delinquency and antisocial behavior (Bagwell et al., 2000). Thus, these similarities need to be examined in more detail, particularly during the period of middle childhood. There have been very few studies conducted in this area, and none that have examined the role of relational aggression. Further research is needed that examines risk factors such as social networks to determine if they are predictors of social maladjustment. Friends from the broader social network may be behaviorally different

from the best friend and many have a substantial influence on the target child (Kupersmidt, Derosier, et al., 1995).

The empirical literature on relational aggression is still in its early stages, particularly with regards to the relevance that these behaviors have for friendships and relationships within the larger social network. The role that relational aggression serves in children's friendships and social clusters warrants further attention and research.

Purpose of the Present Study

For the last 20 years most of the research on aggression has focused on overtly aggressive boys. It was the intention of this study to contribute to the knowledge base about the use of relational aggression within friendships and social clusters in social networks by focusing on extremely relationally aggressive children, who in most samples are 99% girls. The primary purpose of the present research was to examine the nature of relational aggression in girls' friendships and their affiliations with peers. As previously stated, preliminary analyses clearly indicated that the type of aggression children engaged in was confounded by gender, resulting in an incomplete design. Thus, extremely relationally aggressive girls were the focus of this study.

Specifically we wished to examine the dynamics of aggressive and nonaggressive preadolescent girls' friendships and social clusters in the social networks of fourth-through sixth-grade classrooms. Dyadic friendships were examined to determine whether girls who were highly relationally aggressive tended to associate with each other. The social status of their highest reciprocated friend was also of interest. Differences between relationally aggressive and nonaggressive girls in the quality of their friendships were examined.

Social cluster formation among preadolescent girls was examined to determine whether girls who are highly relationally aggressive tended to associate with each other in clusters. We were most interested in the status of the clusters they belonged to within the larger social network, and the social positions (nuclear, secondary, or peripheral) these girls held within the clusters. In this investigation, social clusters refer to the peer groups girls belong to within the larger social network. Social network refers to groups of girls that affiliate within a grade. A child's position within the social network partially determines how many children the child has both direct and indirect contact with. This in turn influences the number of opportunities a child has to form friendships (Bukowski et al., 1996).

The decision to focus on middle childhood (ages 9-12) was based on three factors. First, middle childhood is a period when children's friendships and affiliations with peers become increasingly important to them and are typically met through relationships with same-gender peers (Cairns & Cairns, 1991; Phillipsen, 1999; Rubin et al., 1998). Second, gender differences in friendship intimacy are believed to appear in preadolescence with girls developing more intimate friendships than boys (Buhrmester & Furman, 1987; Zarbatany, McDougall & Hymel, 2000). Finally, the relationally aggressive behaviours used during middle childhood often involve manipulation of a same-gender peer group against another child, i.e., make the victim feel excluded or to withdraw actual peer acceptance (Crick et al., 1999).

It was anticipated that this research would extend Crick and her colleagues' research on girls' friendships and provide greater insight into the internal workings of girls' social networks. It is important to know the nature of girls' social affiliations and

whether the aggressive behaviour of these girls is supported by their peer affiliations so interventions can be developed that target the peer group, not just individuals.

Hypotheses

We were interested in the social relationships of relationally aggressive girls and how they differ from nonaggressive girls. Girls do not typically engage in overt aggression, nor are they typically overt/relational aggressors. For example, out of a sample of 180 girls (Sinclair, 1999), only 1 girl was classified as overtly aggressive, 7 as overt/relational aggressors, and 44 as relational aggressors. It was anticipated that although relationally aggressive girls do have affiliations within the social network, the quality of their friendships, as well as their social status and position within the network would differ from those of their nonaggressive peers. These hypotheses will now be discussed in terms of specific predictions.

Relational Aggression and Individual Characteristics

Social Status. Consistent with past research that found relationally aggressive children were significantly more disliked by their peers than nonrelationally aggressive peers (Grotmeter & Crick, 1995) and that the use of relational aggression led to rejection by peers (Rys & Bear, 1997; Tomada & Schneider, 1997), it was expected that relationally aggressive girls would have lower social status than nonaggressive girls.

Reciprocated friendships. In an effort to replicate the findings of others (Grotmeter & Crick, 1996; Rys & Bear, 1997), it was expected that relationally aggressive girls would be as likely as their nonaggressive peers to have reciprocated friendships.

Relational Aggression and Characteristics of Reciprocated Friendships

Behavioural status of friends of relationally aggressive girls. There have been no studies in the literature that have examined the behavioural status of friends of

relationally aggressive girls. However, overtly aggressive children have been found to have reciprocated friendships with other children who are similarly aggressive (Kupersmidt, Derosier, et al., 1995). While it is possible that a similar phenomenon exists for relationally aggressive girls, the behaviour status of friends of relationally aggressive girls has not been specifically examined in the literature. Because of the nature of relational aggression it may be more productive for relationally aggressive girls to cultivate a few close friends that are not relationally aggressive so that they can control the friend through manipulation of their peer relationships. Therefore, the behavioural status of relationally aggressive girls' highest reciprocated best friendship was examined to determine if there was behavioural similarity within friendships and to determine if the behaviour status of friends of relationally aggressive girls differed from friends of nonaggressive girls.

Social status of reciprocated friends of relationally aggressive girls. Whether differences in social status differentiated relationally aggressive girls' friends from those of nonaggressive girls was also of interest in the present study. Greater similarities have been found between friends than between nonfriends in social status in a normative sample of children in middle childhood (Haselager, Hartup, van Lieshout, & Riksen-Walraven, 1998). While it is possible that a similar phenomenon exists for relationally aggressive girls, the social status of friends of relationally aggressive girls has not been specifically examined in the literature. However, relationally aggressive girls' friendships have been found to be characterized by high levels of conflict and betrayal, relational aggression, and demands for exclusivity. Furthermore, relationally aggressive girls report receiving high levels of self-disclosure from their friends, yet they do not

reciprocate this self-disclosure which suggests that the friends are in a vulnerable position within the friendship (Grotmeter & Crick, 1996). Therefore, it was hypothesized that the friends of relationally aggressive children would have lower social status.

Friendship quality in relationally aggressive dyads. In an effort to replicate the findings of Grotmeter and Crick (1996), it was expected that relationally aggressive girls and their nonaggressive friends would report more intimacy, exclusivity, conflict, and use of relational aggression within their friendship compared to nonaggressive dyads.

Relational Aggression and Characteristics of the Larger Social Network

Cluster Membership. Given the lack of research concerning the network affiliations of relationally aggressive girls, the hypothesis for the present research regarding social affiliations was exploratory. However, previous research has revealed that overtly aggressive girls are just as likely as nonaggressive girls to have affiliations within the social network (Cairns et al., 1988; Xie et al., 1999). Therefore, it was anticipated that high levels of relationally aggressive behaviour would not preclude the formation of friendships within the larger peer network and that relationally aggressive girls would be just as likely as nonaggressive girls to belong to social clusters.

Size of cluster. Previous research has revealed that relationally aggressive children's reciprocated friendships are characterized by relatively high levels of intimacy, jealousy, and desires to keep their friendships exclusive (Grotmeter & Crick, 1996). Therefore, it was anticipated that the clusters to which relationally aggressive girls belonged would be smaller than the clusters to which nonaggressive girls belonged as relationally aggressive girls would not want their friends to have other important peer relationships.

Network position. Not all members of the peer group are equally involved in social clusters; thus social network participation can be evaluated by examining the centrality or degree of association of individual members in social clusters. To date, no research has focused on the positions relationally aggressive girls hold in social clusters. Given the lack of research concerning the positions of relationally aggressive girls, the hypotheses for the present research regarding positions in clusters was exploratory. Previous research has found that the boys most central to the social clusters had the highest level of overt aggression but the aggression centrality effect was not significant for girls. For girls high social network centrality was associated with high levels of popularity (Cairns et al., 1988; Xie et al., 1999). However, since the preferred form of aggression used by girls is relational aggression, it is quite possible that those girls with the highest level of relational aggression would be the most central members of social groups.

Previous research has revealed that high levels of aggressiveness (relational or overt) combined with low levels of prosocial behaviour is particularly problematic for girls (Crick, 1996). It was expected that relationally aggressive girls who exhibited high levels of prosocial behaviours would hold more central positions than relationally aggressive girls who were not identified by their teachers to be as prosocial.

Behavioural characteristics of cluster membership of relationally aggressive girls.

It was also of interest to determine whether relationally aggressive behaviours tend to be reciprocal and contagious within social clusters. Previous research has found that at risk girls (high overt aggression, low popularity, academic competence, athletic competence and physical appearance scores) tended to affiliate in at-risk social clusters (Xie et al.,

1999), and that overtly aggressive children tended to affiliate with similarly overtly aggressive children (Cairns et al., 1988). Since social clusters exert pressure on individuals to conform to the group's attitudes and values, it was expected that within social clusters there would be a high degree of similarity in behaviour patterns, i.e., that relationally aggressive girls would affiliate with girls that were similarly relationally aggressive, and that nonaggressive girls would affiliate with girls who are similarly nonaggressive.

Relational aggression, social status and cluster membership. At-risk girls (high overt aggression, low popularity) tend to affiliate with at-risk peer groups (Xie et. al, 1999) and the clusters to which rejected children belong to are comprised of similarly low-status peers (Bagwell et al., 2000). Therefore, it was anticipated that the clusters to which rejected relationally aggressive girls belonged would be comprised of lower social status peers than the clusters to which nonaggressive girls belonged. This was to be examined only if the sample of rejected aggressive girls was large enough.

Method

Participants

Student participants were in grades 4, 5, and 6 from three elementary schools in the Ottawa region. A total of 646 boys and girls from 26 classrooms were asked to participate in the study. Parental permission was granted for 499 children (77%). Their teachers were also solicited for their participation in this study and all 26 agreed to participate. The average consent rate by class was 75%, with a range between 28% and 91% among classes (see Appendix A for distributions). The initial sample included 252 girls and 247 boys ranging in age from 9.03 years to 12.10 years with a mean age of

10.47 years ($SD = .93$) years. Since participation in 7 of the classrooms was considered too low (i.e., less than 70% participation rate) (Crick & Ladd, 1989) to allow for a reliable examination of the sociometric nomination data, only 19 classrooms (199 girls) were included in any analyses involving sociometric nominations of girls' social status. With the exclusion of these seven classes, the consent rate ranged from 70% % to 91% among classes ($M = 83\%$).

Measures

In the present study, five measures assessing behavioural styles, social status, reciprocal friendships, friendship quality, and social networks were used to assess the friendships and affiliations within social networks of relationally aggressive children.

Teachers were asked to complete the Ratings of Children's Social Behaviour – Teacher Form (Crick, 1996) for each participating subject in their classroom. All children who were participating in the study were asked to complete the following four measures:

Sociometric Nominations (Coie & Dodge, 1983), Friendship Nominations (Parker & Asher, 1993), the Friendship Qualities Measure (Grottpeter & Crick, 1996), and the Social Cognitive Map (Cairns et al., 1985).

Ratings of Children's Social Behaviour – Teacher Form (Crick, 1996).

There are two types of measures that are used to assess children's social behaviours that include relational aggression items; peer nominations and teacher ratings. I initially intended to collect peer ratings of children's social behaviour, however, due to restrictions in the school board, only teacher nominations were approved by the Research Advisory Committee. The Ratings of Children's Social Behaviour – Teacher Form, which consists of 15 items (Appendix B), was used to determine children's overall

behavioural styles. This measure is a teacher rating version of the peer behaviour nomination measure (Crick & Grotpeter, 1995). The three subscales on this rating instrument were designed to parallel those included in the peer report instrument: overt aggression (e.g., “This child hits, shoves, or pushes peers”), relational aggression (e.g., “This child spread rumors or gossips about peers”), and prosocial behavior (e.g., “This child tries to cheer up peers when they are sad or upset about something”). Teachers were asked to indicate on a five-point Likert scale how true each item was in regard to the subjects (i.e., 1 = “never true” to 5 = “always true”).

Previous research (Crick, 1996) has demonstrated that teacher assessments of relational aggression are a valid substitute for peer assessments when peer informants are unavailable. Similar to the peer nomination instrument, factor analysis of teachers' reports of relational and overt aggression have yielded separate factors for the two forms of aggression. Past research has demonstrated that these scales are internally consistent, with Cronbach's alphas ranging from .94 to .95 for relational aggression, .94 for overt aggression, and .93 for the prosocial behaviour scales (Crick, 1996; Rys & Bear, 1997). Crick (1996) assessed the relation between peer and teacher assessments of social behaviour. Scores on the three factors correlated .57 for boys and .63 for girls for relational aggression, .69 for boys and .74 for girls for overt aggression, and .40 for boys and .48 for girls for prosocial behaviour, with scores on the same-named factors of the peer nomination instrument (Crick & Grotpeter, 1995). Both Crick (1996) and Tomada and Schneider (1997) have reported very high test-retest stability in the teacher ratings of both overt and relational aggression. The fact that teachers' assessments of relational aggression were significantly correlated ($r = .63$) with those of peers provides support for

Crick's position that the two measures assess the same constructs.

Analyses were conducted with the data from the current study to determine the psychometric properties of the Ratings of Children's Social Behaviour -- Teacher Form. While Crick (1996) has previously reported the results of a factor analysis for this measure, it was felt that it was important to explore the various subscales with this sample as it was the sole measure being used to identify groups of aggressive children. The results for this factor analysis are reported in the results section.

Classification of children into behavioural groups. Children's overt aggression, relational aggression, and prosocial scores on the teacher rating measure were used to classify children into four different groups: overtly aggressive, relationally aggressive, relationally/overtly aggressive, and nonaggressive.

In order to classify the children into different behaviour groups criterion cut-off scores were used. Using the procedure recommended by Crick (personal communication, August 2001) children with scores more than one standard deviation above the sample mean on the overt aggression scale but less than 1 SD above the sample mean on the relational aggression scale were classified as overtly aggressive. Children with scores more than one standard deviation above the sample mean on the relational aggression scale but less than 1 SD above the sample mean on the overt aggression scale were classified as relationally aggressive. Children with scores more than one standard deviation above the mean on the overt aggression scale and the relational aggression scale were classified as relationally/overtly aggressive. The remaining children were classified as nonaggressive. Standard deviations were calculated on the basis of the scores for all participants of both sexes. Using separate distributions for each sex would

have resulted in inflation of the number of girls identified as overtly aggressive despite significantly lower overt aggression scores compared to boys.

Sociometric Nominations

Sociometric nominations were used to assess the subjects' social status in the larger peer group. Participants were asked to nominate three peers of either sex in their class with whom they liked to spend the most time (LM) and the three peers with whom they liked to spend the least time (LL). Sociometric status was determined based upon the classification scheme outlined by Coie et al. (1982), which is the most common method reported in the literature (Coie & Dodge, 1988; Coie et al., 1990; Newcomb et al., 1993). For each participant, the LM and LL nominations were totaled and transformed into standard scores within each class. Social preference scores (SP) were calculated by subtracting the standardized LL scores from the standardized LM scores. SP scores represent how well liked students are by their peer group. Social impact scores (SI) were calculated by adding the standardized LM and LL scores. SI scores indicate how high profile or salient children are to their peer group. These scores were used to identify popular, rejected, neglected, controversial, average, and unclassified children.

Using the criterion specified by Coie et al., 1982, children with standardized SP scores more than one standard deviation above the mean, standardized LM scores greater than 0, and standardized LL scores less than 0, were classified as popular. Children with standardized SP scores less than one standard deviation below the mean, standardized LL scores greater than 0, and standardized LM scores less than 0, were classified as rejected. Children with standardized SI scores less than one standard deviation below the mean, and standardized LM and LL scores less than 0 were classified as neglected. Children

with standardized SI scores more than 1 standard deviation above the mean and LM and LL scores greater than 0 were classified as controversial. Children with standardized SP scores greater than one half standard deviation below the mean and less than one standard deviation above the mean were classified as average. Anyone within .5 standard deviation was categorized as unclassified. This was done to ensure discrete groups and to avoid concerns regarding the ambiguity of deciding where children who score on or near the criterion cut-off score belong.

Acceptable short-term stability has been found for this sociometric technique with elementary school children (Asher & Dodge, 1986; Coie & Dodge, 1983; Cillessen et al., 2000). In 1983, Coie and Dodge conducted a longitudinal study of third- and fifth-grade students, over a five year period, to examine the stability of elementary school children's behaviour characteristics and social adjustment with peers. The rejected group was the most stable of the five social status groups (correlations ranged from $r = .45$ after one year to $r = .30$ after four years). Popularity in children was found to be moderately stable over one year ($r = .36$) and less stable over four years ($r = .21$). The stability of controversial children ($r = .31$ over one year; $r = .14$ over four years) and neglected children ($r = .25$ over one year; $r = .24$ over four years) was notably lower than it was for rejected children. Overall, Coie and Dodge concluded that status in one year was significantly related to the status of that child during the previous year, and that there were no significant gender differences in stability of social status.

Friendship Nomination Measure

To establish reciprocal friendship nominations, participants were asked to identify up to three of their best friends: a "best friend", a "second best friend", and "next best

friend" (see Appendix C) in their grade and at their school (Parker & Asher, 1993). To reduce the previously described difficulties associated with restricted and unlimited friendship choice procedures, a three-friend selection procedure was used. Age group, rather than the smaller classroom, was used for the friendship nominations because students have opportunities to interact and form friendships with children outside of their classroom.

Using the procedures described by Parker and Asher (1993), children were identified as having a reciprocated friendship if the individual they identified as being a friend, included him or her in their list of friendship choices. Consistent with Grottpeter and Crick (1996) subjects were identified as having a reciprocated friendship if one of the other subjects nominated as a "best friend" also reciprocally nominated him or her as a "best friend", a "second best friend," or a "next best friend." However, attempts were made to include each child's highest rated friendship.

A small number of children nominated classmates of the opposite sex in their list of choices ($n = 10$), however only three of these nominations were reciprocated. These three subjects were dropped from the analyses. Thus only reciprocated friendships of same-sex friends were studied.

Friendship Qualities Measure (FQM)

The FQM was used to assess the quality of the friendship with the child the subjects spent the most time with. Grottpeter and Crick (1996) developed this measure by adapting¹ Parker and Asher's (1993) Friendship Qualities Questionnaire (FQQ) and

¹ Nine items in total were dropped from the six subscales drawn from the original Parker and Asher (1993) FQQ in order to shorten the measure. An item was deleted if (a) it did not make conceptual sense with the rest of the subscale, (b) it loaded lower than .65 on the analyses conducted by Parker and Asher (1993), or (c) if the item appeared to be redundant with another item that loaded higher on the same subscale.

adding six additional subscales they designed to assess the friendship quality of overtly aggressive and relationally aggressive children during middle childhood.

Because of a lack of psychometric information for the FQM, the psychometric properties of Parker and Asher's (1993) FQQ are reported. To identify subscales on the FQQ, Parker and Asher performed a principal-components analyses resulting in six factors with eigenvalues greater than 1. The six subscales were Validation and Caring, Help and Guidance, Intimate Exchange, Conflict and Betrayal, Conflict Resolution, and Companionship and Recreation. Internal reliabilities were satisfactory with alphas ranging from .73 to .90.

Grottpeter and Crick (1996) created the subscales, Overt Aggression within the Friendship and Relational Aggression within the Friendship to assess the degree of aggression within the friendship. Also of interest was the extent to which friends used overt aggression and relational aggression together toward their peers. Thus, they also developed the following subscales: Overt Aggression toward Others and Relational Aggression toward Others. Finally, because of the relatively high importance that relationally aggressive children seem to give to friendship ties (Crick, 1995), the following two subscales were included to assess the individual's demand for exclusive access to the friend: Subject Desire for Exclusivity and Friend Demands for Exclusivity.

The questions are organized into 13 subscales and consist of 45 items in total (see Appendix D). Children are asked to rate how true each quality is of their mutual friendship on a scale from 1 (not at all true) to 5 (almost always true). Responses are summed and averaged for each subscale after appropriate reverse scoring.

Internal reliabilities were reported to be acceptable, with Cronbach's alphas ranging from .61 to .87 (Grottpeter & Crick, 1996). Interscale correlations ranged from .05 to .76.

Since the FQM has been reported in the literature to be a good, and the only, measure of friendship quality that includes measures of relational aggression within friendships, it was adopted for the present study despite an absence of psychometric properties, in particular a factor analysis. The items for the six subscales added by Grottpeter and Crick were developed based only on a conceptual model (personal communication, August 2001). A factor analysis was conducted by this researcher and the results are included in the results section.

Social Cognitive Map Procedure

The social network of each grade in each school was assessed with the social cognitive map procedure developed by Cairns et al. (1985) on which each child reports on the social relationships of all children in the grade. Participants were instructed to think about all the groups of children in their grade that hang around together and to write down the names of all children in each group, and to list their own group(s). They were also asked to write down the names of any children who didn't belong to any groups or pairs in their grade (see Appendix E).

Social clusters and students' centrality within their grade's social networks were identified using the social cognitive map procedure developed by Cairns et al. (1985) and the computer program developed by Cairns, Gariepy, Kindermann, & Leung (1998). Once the raw data of each respondent's free recall of social clusters was entered into the computer program, a recall matrix was developed for each grade that summarized the

information gathered from the respondents on the cluster membership of the children in the social network. Each respondent's social map was summarized independently with the clusters being identified by the order in which they were written down on the paper, e.g., A, B, C, etc. Then a Person (row) by Respondent (column) matrix was constructed. Cells were filled with the letters and subscripts representing group assignments and recall orders of children for each respondent. Rearranging the rows and columns so children were clustered who have common associations provided an outline of the social network configuration. This information was then transformed into a second "co-occurrence" matrix whereby each child was compared to every other child in his/her network, and instances of joint cluster membership were calculated (See Figure 1 for an example; Cairns et al., 1998).

Shown in the diagonal of the matrix is the number of times that each person is nominated to any cluster. In addition, each off-diagonal cell in the co-occurrence matrix represents the number of times a specific person (column) is nominated in the same cluster as every other person (row) in the matrix. The similarity of child profiles between all pairs of children in the cluster was then summarized in the form of correlations between children's profiles of co-occurrence. Cluster membership was identified by clustering the children with similar social affiliation profiles, using a cut-off score of $r \geq .40$. Cairns et al. (1998) report that a cut-off for similarity of $r \geq .40$ has proved adequate and that this procedure has proved to be as robust as more elaborate mathematical solutions.

Centrality of each cluster in the network as a whole, and the centrality of each person within the cluster(s) of which she/he was a member was identified using

Figure 1

Co-Occurrence Matrix

	Amy	Bea	Cam	Di	Edi	Fay	Gay	Hen	Ida	Joy	Kim	Lyn	Mia	Nia	Ola
Amy	12 ^b	11 ^c	12	7	12	10	5	4	-	-	-	-	2	-	-
Bea	11	12	11	6	11	8	5	4	-	-	-	-	3	1	1
Cam	12	11	13	7	13	10	5	4	-	-	-	-	3	1	1
Di	7	6	7	8	8	5	3	2	-	-	-	-	-	-	-
Edi	12	11	13	8	14	10	5	4	-	-	-	-	3	1	1
Fay	10	8	10	5	10	12	6	5	-	-	-	-	2	-	-
Gay	5	5	5	3	5	6	6	3	-	-	-	-	-	-	-
Hen	4	4	4	2	4	5	3	2	-	-	-	-	4	4	4
Ida	-	-	-	-	-	-	-	-	14	14	14	14	-	-	-
Joy	-	-	-	-	-	-	-	-	14	14	14	14	-	-	-
Kim	-	-	-	-	-	-	-	-	14	14	14	14	-	-	-
Lyn	-	-	-	-	-	-	-	-	14	14	14	14	-	-	-
Mia	2	3	3	-	3	2	-	4	-	-	-	-	2	7	7
Nia	-	1	1	-	1	-	-	4	-	-	-	-	7	8	8
Ola	-	1	1	-	1	-	-	4	-	-	-	-	7	8	8

^a The table frequencies represent the nominations made by all (17) respondents; note that the person "Pam" was omitted from the co-occurrence matrix because she had zero nominations.

^b Diagonals indicate the number of times the individual was named to any group.

^c Off-diagonal numbers indicate the number of times respondents named the two persons (designated by the row and column) to the same group.

frequency-of-nomination data. In essence, centrality is a measure of salience or how high a profile an individual has within a cluster or a cluster has within the social network. Using the method developed by Cairns et al., (1985), social clusters were classified as *high-*, *median-*, and *low-*status within the network. Individual status within a cluster was determined by analyzing the nomination frequency data. *Nuclear* status was used for those clusters (or individuals) who were in the upper 30% rank of nominations, *peripheral* were those in the lowest 30% rank of nominations, and *secondary* status was assigned to those in the midrange 40% rank of nominations. Cluster status within the class and individual status within the cluster was used to determine a student's overall social network centrality. *High centrality* means the individual is a nuclear member of a high-prominent cluster. *Median centrality* identifies individuals who either have secondary status in a high-prominent cluster or nuclear or secondary status in a cluster of median prominence. *Low centrality* individuals are (a) peripheral members of any cluster, (b) members of low-prominent clusters, or (c) isolates, i.e., they are not identified within any cluster.

Information on construct validity is provided by Cairns et al. (1995) who reported that best friend nominations and self-reports of cluster membership overlapped significantly with the composite social-cognitive map clusters. However, the social-cognitive clusters identified using information from many class members were more inclusive than those produced by single respondent reports of friendship and cluster membership.

Agreement among independent respondents with respect to their descriptions of the social network has been reported to be high among children in middle childhood

through adolescence. Cairns et al. (1985) reported 96% agreement on the inclusion of members in social clusters. In addition, reliability of persons within clusters and clusters within the social-network was found to be relatively stable over a 3-week to 12-week period ($r = .70$ to $.90$) as well as over a whole year ($r = .70$). The authors report that there was "moderate fluidity" in cluster composition over the same time period. Moreover, individual differences in centrality tend to be relatively stable, e.g., a child who is identified as nuclear in one year has a very low probability of being named peripheral or isolated the next year. Further, this method of assessment has shown itself to be highly appropriate in the school context and requires only a limited number of respondents (10 to 20) to obtain a reliable picture.

Procedure

Parental permission letters were sent home with the children (see Appendix F) from the participating schools in April 2001. Those boys and girls who received parental consent were then presented with the sociometric nomination measure, friendship nomination measure, the Friendship Qualities Measure, and the social cognitive map measure. Under the direction of this principal investigator, research assistants with expertise in this area administered these questionnaires in the classrooms during a group session, lasting approximately 40 minutes.

Prior to administering the measures, the responsibility for keeping all responses confidential both on the part of the children and the investigators was discussed. To minimize reading demands, each item was read out loud by a researcher. Children followed along on their own questionnaires and recorded their responses on the answer sheet provided. In most instances two researchers were in the classroom during data

collection. One researcher read the questions out loud while the other researcher circulated around the classroom to ensure children did not fall behind or become confused. Children completed the questionnaires in May and June to ensure that students were very familiar with their peers. At the end of the study, children were debriefed regarding the purpose of the study (see Appendix G) and a debriefing letter was sent home to their parents (see Appendix H). Finally, since a high consent rate was necessary to ensure reliability of the sociometric nominations, a pizza party was offered to the classrooms that had the highest rate of return for their consent forms, whether they received consent to participate or not. Teachers were also offered a gift certificate (\$20 value) to a local bookstore to compensate them for their time in completing the teacher rating measures.

Results

Part I: Preliminary Analyses

Preliminary analyses were conducted to: 1) examine the psychometric properties of the teacher rating measure (factor analysis) and friendship quality measure (factor analysis and reliability analysis); 2) explore gender differences in aggression scores; 3) classify children into behaviour groups (Crick, 1996) and social status (Coie et al., 1982 classification scheme); 4) determine whether the groups differed with respect to the demographic variables; and 5) determine the number and gender composition of social clusters, as well as their level of centrality within the larger social network. These preliminary analyses were conducted with data from the sample of 499 subjects with the exception of social status. Since participation in 7 of the classrooms was considered too low (i.e., less than 70% participation rate) (Crick & Ladd, 1989) to allow for a reliable

examination of the sociometric nomination data, only 19 classrooms (191 girls) were included in any analyses involving sociometric nominations of girls' social status.

Psychometric Evaluation of Measures

Ratings of Children's Social Behaviour – Teacher Form

To assess whether overt and relational aggression items loaded on two separate factors, a principal-components factor analysis with a varimax rotation was used on the data set ($N = 499$). The analysis yielded three factors, overt aggression, relational aggression, and prosocial behaviour. The three factors accounted for 80.9% of the variance in the data set, with relational aggression accounting for 56.7% of the variance (eigenvalue = 8.5), prosocial behaviour accounting for 14.5% of the variance (eigenvalue = 2.18), and overt aggression accounting for 9.7% of the variance (eigenvalue = 1.46). For the most part, the factor loadings confirmed the theoretical assumptions underlying the various items (see Table 1).

Based on the results of the factor analysis, one item was dropped from the scales. The item "This child tries to dominate or bully peers" cross-loaded onto the relational aggression (.579) and overt aggression (.567) scales. Therefore, this item was deleted from all subsequent analyses.

Thus, the relational aggression scale included seven items, the overt aggression scale included three items, and the prosocial scale included four items. Factor loadings were moderately high for each scale ranging from .799 to .859 for the relational aggression scale, .849 to .899 for the overt aggression scale, and .791 to .898 for the prosocial scale (see Table 1).

Table 1

Factor Loadings (Varimax Rotation) for Behaviour Status (N = 499)

Item	Factor loading		
	Relational aggression	Overt aggression	Prosocial Behaviour
1. When mad at a peer gets even by excluding the peer from his or her clique or play group.....	.858		
2. Spreads rumors or gossips about some peers.....	.801		
3. When angry at a peer, tries to get other children to stop playing with the peer or to stop liking the peer.....	.856		
4. Tries to get others to dislike certain peers by telling lies about the peers to others....	.799		
5. When mad at a peer, ignores the peer or stops talking to the peer.....	.822		
6. Threatens to stop being a peer's friend in order to hurt the peer or to get what s/he wants from the peer.....	.823		
7. Tries to exclude certain peers from peer group activities.....	.834		
8. Hits, shoves or pushes peers.....		.849	
9. Initiates or gets into physical fights with peers.....		.899	
10. Threatens to hit or to beat up other children.....		.866	
11. Cheers up peers when they are sad or upset about something.....			.898
12. Is helpful to peers.....			.876
13. Is kind to peers.....			.791
14. Says supportive things to peers.....			.879
Items not included in further analyses			
1. Tries to dominate or bully peers.....	.573	.570	

The factor loadings obtained in the present study for relational aggression, overt aggression, and prosocial behaviour were similar to factor loadings reported in previous research studies. For example, Crick (1996) reported factor loadings ranging from .69 to .83 for relational aggression, .76 to .84 for overt aggression, and .73 to .89 for prosocial behaviour.

The internal consistency of each of the subscales was examined using Cronbach's alpha. Relatively high internal consistency coefficients were obtained for the relational aggression, overt aggression, and prosocial scales (i.e., alphas = .95, .93, and .93, respectively), which is consistent with both Crick (1996; alphas = .94, .94, and .93 respectively) and Rys & Bear (1997; alphas = .95, .94, and .93 respectively). Alpha statistics were similar for boys and girls. Further, the correlations among these scales were .53 for overt and relational aggression, -.50 for overt aggression and prosocial behaviour, and -.47 for relational aggression and prosocial behaviour. It was of interest to also examine the relation between overt and relational aggression separately for females and males, which were .49 and .73 respectively.

Friendship Qualities Measure (FQM)

Since there was no psychometric data reported in the literature for the FQM, a principal-components factor analysis with a varimax rotation was used on the data set. This analysis resulted in 10 factors with eigenvalues greater than 1. The 10 factors accounted for 58.2% of the variance in the data set, with the first factor accounting for 22.8% of the variance (eigenvalue = 10.3), the second factor accounting for 9.1% of the

variance (eigenvalue = 4.1), and the third factor accounting for 5.4% of the variance (eigenvalue = 2.4).

The 13 factors theoretically hypothesized by Grotmeter and Crick (1996) were not supported by this factor analysis. Many of the items did not load on the scales as had been proposed. Only three of the subscales (Relational Aggression Towards Others, Overt Aggression Towards Others, and Conflict Resolution) had their respective items loading highly together as separate factors with no other items from other scales. The items from the factors that assessed intimacy loaded together on one scale as did five of six items from the factors that assessed conflict. However in both cases, items from other scales as proposed by Grotmeter and Crick also loaded on both of these scales. The column furthest to the right in Table 2 shows the structure coefficient from the principal-component analysis for each item in relation to the factor(s) on which it loaded. Most disconcerting was the failure of the items believed to assess relational aggression within friendship to load on one factor. Two items on the Relational Aggression Toward Friends Scale actually loaded along with several items from the Conflict Scale, however the item "My friend tells my secret to other kids when mad at me" loaded on the exclusivity factor, and the item "My friend tells me she won't like me anymore unless I do what she says" loaded highest on the factor that assess Overt Aggression Towards Friends. Clearly, the factor analysis did not confirm the factors as described by Grotmeter and Crick (1996). However, Crick stated that they did not conduct a factor analysis on this measure and that in fact the subscales were based solely on conceptual interest (personal communication, August 2001).

Table 2

Items and Subscales of the Friendship Quality Measure Identified by Factor Analysis

Subscale/Item ^a	Structure Coefficient
Factor 1 – Intimate Exchange	
33. I can talk with my friend about the things that make me sad.	.804
37. My friend can tell me about his/her problems.	.808
21. My friend can talk with me about the things that make him/her sad.	.788
7. My friend can tell me his/her secrets.	.760
4. I can tell my friend about my problems.	.750
18. I can tell my friend my secrets.	.716
8. My friend makes me feel important and special.	.644 ^b
22. My friend tells me I am good at things.	.586 ^c
1. My friend gives me advice with figuring things out.	.538
30. My friend does special favors for me.	.519
35. It's easy to talk with my friend about how to get over being mad.	.465
15. My friend shares things with me.	.422 ^d
13. My friend does fun things with me.	.409 ^e
39. My friend says, "I'm sorry" if he/she hurts my feelings.	.407
44. How is this friendship going?	.342 ^f
Factor 2 – Conflict	
23. I disagree with my friend a lot.	.698
9. I get mad at my friend a lot.	.649
14. My friend gets mad at me a lot.	.627 ^g
28. My friend gets annoyed with me a lot.	.608 ^h
42. My friend disagrees with me a lot.	.570
2. My friend ignores me when mad at me.	.642
40. My friend won't let me play with him/her when mad at me.	.476
38. My friend annoys me a lot.	.424 ⁱ
Factor 3 – Overt Aggression Towards Friends	
29. My friend tells me she won't like me anymore unless I do what she says.	.706
20. My friend says he/she will beat me up unless I do what she says.	.649
6. My friend hits and kicks me when mad at me.	.568
31. My friend pushes and shoves me when he/she is mad at me.	.543
28. My friend gets annoyed with me a lot.	.410
14. My friend gets mad at me a lot.	.344 ^g
38. My friend annoys me a lot.	.472 ⁱ

^a Numbers are item numbers from the Friendship Quality Measure

^{b-i} Items that crossloaded on two different scales

Note: Items in bold are items that load on the factors as defined by Crick

Factor 4 - Friendship Satisfaction

45. How happy are you with this friendship?	.665
44. How is this friendship going?	.582
13. My friend does fun things with me.	.436 ^c
15. My friend shares things with me.	.329 ^d
8. My friend makes me feel important and special.	.306 ^b

Factor 5 – Overt Aggression Toward Others

25. My friend and I threaten to beat others up if they don't do what we tell them to do.	.789
36. My friend and I push and shove others when we are mad at them.	.711
11. My friend and I hit and kick others we are mad at.	.639

Factor 6 – Exclusivity

26. My friend feels jealous if he/she sees me playing with another kid.	.706
5. I feel jealous if I see my friend playing with another kid.	.661
19. It's OK if my friend plays with other kids when I am busy.	.551
34. It's okay with my friend if I play with other kids when he/she is busy.	.486
16. My friend tells my secrets to other kids when mad at me.	.359

Factor 7 – Conflict Resolution

3. It is easy to make up quickly with my friend if we have a fight.	.674
17. It is easy to get over arguments with my friend.	.650
35. It is easy to talk with my friend about how to get over being mad at each other.	.401

Factor 8 – Relational Aggression Towards Others

10. When my friend and I don't like someone, we won't let them play with us.	.705
32. When one of us hears a rumor about someone we don't like, we tell each other and pass it on.	.646
24. When my friend and I are mad at someone, we ignore them or don't talk to them.	.579

Factor 9 – Companionship and Recreation

27. My friend plays with me at recess.	.750
43. My friend picks me as partners for things.	.614
30. My friend does special favors for me.	.368
13. My friend does fun things with me.	.314
39. My friend says, "I'm sorry" if he/she hurts my feelings.	.313

Factor 10 – Exclusivity

12. My friend would rather play alone with me, and not with other kids.	.836
41. I'd rather play alone with my friend, and not other kids too.	.774

The internal consistency of each of the subscales as identified by Grotmeter and Crick (1996) was examined using Cronbach's alphas. Several of the subscales evidenced low reliability. To address this issue, a decision was made with respect to the various subscales based on previous research (Grotmeter & Crick, 1996). The two exclusivity subscales, i.e., subject desire for exclusivity ($\alpha = .27$), friend desire for exclusivity ($\alpha = .41$), and two conflict subscales, i.e., conflict I ($\alpha = .65$) conflict II ($\alpha = .66$) were combined. After collapsing the 15 subscales into 13 subscales, alphas were found to range from .57 to .83 (see Table 3). These alphas were slightly lower than those reported by Grotmeter & Crick (1996) reported (.61 to .87).). Interscale correlations ranged from .01 to .79.

Clearly, the psychometric properties of the Friendship Quality Measure are not as desirable as one would like. While the current study was particularly interested in the friendship dyads, due to the poor psychometric properties of several of the subscales only the two subscales, Relational Aggression Towards Others and Exclusivity, were included in further analyses.

Gender Differences and Social Behaviour Status

Gender Differences on the Scores for Social Behaviour

To determine if boys and girls differed in the mean level of aggression they engaged in, as measured by the teacher rating measure, a multivariate analysis of variance (MANOVA) on the teacher rating measures of relational aggression, overt aggression, and prosocial behaviour was conducted. The result of the MANOVA was significant, $F(3, 495) = 47.34, p < .001$. Univariate tests indicated that boys were more overtly aggressive than girls, $F(1, 498) = 65.42, p < .001$, and girls more prosocial than

Table 3

Internal Reliability Alphas for the Friendship Qualities Measure

Subscale	Cronbach's alpha
Intimate exchange (subject intimacy)	.79
Intimate exchange (friend intimacy)	.83
Help and guidance	.62
Conflict resolution	.69
Validation and caring	.73
Companionship and recreation	.58
Overt aggression toward others	.71
Overt aggression toward friends	.63
Relational aggression toward friends	.63
Relational aggression towards others	.57*
Exclusivity	.60*
Conflict	.80
Friendship satisfaction	.79

* Scales included in analyses

boys, $F(1, 498) = 24.03, p < .001$. There were no gender differences in teacher ratings of relational aggression, $F(1, 498) = 2.25, p > .05$. Means and standard deviations are displayed in Table 4.

Gender Differences for Extreme Groups.

It was next of interest to assess gender differences in social behaviour when extreme groups were identified using the previously described procedure. First a descriptive analysis was conducted of the numbers and percentage of boys versus girls who could be classified as relationally aggressive, overtly aggressive, both relationally and overtly aggressive, or nonaggressive. Results showed that 45 children were identified as relationally aggressive (39 female, 6 male), 33 as overtly aggressive (31 male, 2 female), 38 as relationally and overtly aggressive (31 male, 7 female), and 383 as nonaggressive (204 female, 179 male) children. Thus, approximately equal numbers of each gender were classified as nonaggressive (80.9% of girls and 72.5% of the boys). However, as expected boys and girls were not evenly distributed among the remaining three aggressive groups. The relationally aggressive group consisted primarily of girls (15.5% vs. 2.4% of the boys); the overtly aggressive group consisted primarily of boys (12.6% vs. 0.8% of girls); and the relationally/overtly group consisted of more boys than girls (12.6% vs. 2.8% respectively). All 499 subjects could be classified into a behaviour group with this procedure. See Table 5 for a breakdown of social behaviour group by gender.

To determine if these were significant differences, a 2 x 4 chi-square test was performed. A significant finding was obtained, $\chi^2(3, N = 499) = 66.43, p < .001$, indicating that gender and group were not independent. Examination of the observed

Table 4

Means and Standard Deviations for Teacher-Reported Social Behaviour

Social Behaviour	Male		Female	
	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)
Relational Aggression	14.56	(6.72)	15.54	(7.83)
Overt Aggression	5.52**	(3.32)	3.62**	(1.70)
Prosocial Behaviour	13.84**	(4.12)	15.53**	(3.59)

** $p < .001$

Table 5

Frequency Distributions for Social Behaviour Status for Males and Females

Social Behaviour	Female	Male	Overall
	<i>n</i> = 252	<i>n</i> = 247	<i>n</i> = 499
Relationally Aggressive	39	6	45
Overtly Aggressive	2	31	33
Relationally/Overtly Aggressive	7	31	38
Nonaggressive	204	179	383

frequencies of gender for each group revealed that the relational aggression group was comprised of significantly more females and less males (39 females, 6 males) than expected by chance ($z = 5.1, p < .001$), the overt aggressive group had more males and less males (31 males, 2 females) than expected by chance ($z = 5.3, p < .001$), the relational/overt group had more males and fewer females (31 males, 7 females) than expected by chance ($z = 4.1, p < .001$), and nonaggressive group had more females and fewer males (204 females and 179 males) than expected by chance ($z = 2.2, p < .05$).

While the purpose of the present study was to examine the nature of relational aggression in girls' friendships and social networks, if a large enough sample of relationally aggressive boys had been identified then they would have been included in the analyses. However, it is clear that the type of aggression children engaged in was confounded by gender, resulting in an incomplete design. Thus, based on the observed frequencies of the chi-square test, only girls were included in subsequent analyses because of the small number of boys ($n = 6$) classified as extremely relationally aggressive. Furthermore, since there were only two girls classified as overtly aggressive, and seven as relationally/overtly aggressive, these groups were not included in subsequent analyses as sample sizes weren't large enough to allow for adequate analyses. Since no specific hypotheses were made concerning the prosocial group, they were excluded from further analyses at this point.

Analyses of Demographic Variables

A one-way ANOVA was conducted to determine whether the relationally aggressive and nonaggressive girls differed with respect to age. Results of this analysis

revealed that the groups did not differ, $t(241) = -.487, p > .05$. Thus, age was not controlled for in subsequent analyses.

A 2 x 3 chi-square test was conducted to determine whether the number of relationally aggressive and nonaggressive girls differed with respect to grade. Results of this analysis revealed that the groups did not differ with respect to grade, $\chi^2(6, N = 243) = 2.23, p > .05$. Thus, grade was not controlled for in subsequent analyses.

Classification of Children into Social Status Group

A descriptive analysis was conducted of the numbers and percentage of relationally aggressive and nonaggressive girls who could be classified as popular, rejected, neglected, controversial, average, or unclassified. Using the subsample of 191 girls², results showed that 24 were identified as popular (12.6%), 28 as rejected (14.7%), 23 as neglected (12%), 14 as controversial (7.3%), 29 as average (15.2%), and 73 as unclassified (38.2%). The number of relationally aggressive and nonaggressive girls in each sociometric group is shown in Table 6. These percentages are similar to those obtained in other samples (Coie et al., 1982; Crick & Grotpeter, 1995; Crick & Ladd, 1989).

Descriptives of Social Networks

Across the three schools, 100 social clusters were identified using the social cognitive map procedure. The number of members in a social cluster ranged from 3 to 26, and the median number in each social cluster was 7. The majority (78%) of the identified social clusters were comprised of same-sex members, 46 girls only social

² Since participation in 7 of the classrooms was considered too small (i.e., less than 70% participation rate) (Crick & Ladd, 1989) to allow for a reliable examination of the sociometric nomination data, only 19 classrooms (191 girls) were included in any analyses involving sociometric nominations of relationally aggressive and nonaggressive girls' social status.

Table 6

Frequency Distributions for Behaviour Status and Social Status for Females

Social Status	Relationally Aggressive <i>n</i> = 37		Nonaggressive <i>n</i> = 154	
	%	n	%	n
Popular	5	2	14	22
Rejected	22	8	13	20
Neglected	3	1	14	22
Controversial	8	3	7	11
Average	22	8	14	21
Unclassified	41	15	38	58

clusters (46%) and 34 boys only social clusters (34%). Girls' cluster size ($M = 9.24$, $SD = 4.78$) was significantly smaller than boys' cluster size ($M = 11.11$, $SD = 4.55$), $F(1, 470) = 18.76$, $p < .001$. There were 22 mixed gender clusters (22%). These mixed gender clusters were distributed fairly evenly across the three different grades.

Thirty-one subjects in the total sample of 499 were not named as group members (14 girls, 17 boys). Fourteen of these individuals (2.8%) were identified as being children who "didn't hang around with a particular group" (1 relationally aggressive girl and 5 nonaggressive girls) and 17 (3.4%) were simply not nominated at all (1 relationally aggressive girl and 6 nonaggressive girls).

Analyses

Relational Aggression and Individual Characteristics

Social status. Descriptive statistics for each of the sociometric status categories for relationally aggressive and nonaggressive girls are listed in Table 6. Two approaches were used to determine if there were group differences between relationally aggressive and nonaggressive girls in social status. First, due to the small cell size of several of the categories, a decision was made to collapse the popular and average status groups into a group we called higher status, and the rejected, neglected and controversial groups into a group we called lower status. A 2 x 2 chi-square test was conducted to test the hypothesis that relationally aggressive girls were of lower social status than nonaggressive girls. The result was not significant, $\chi^2(6, N = 118) = .003$, $p > .05$ indicating that aggression status and social status were independent.

In order to examine this issue further in an attempt to replicate results from Crick & Grotpeter (1995), a MANOVA was conducted to determine whether relationally

aggressive girls differed from nonaggressive girls on the number of nominations received for “liked” and “disliked”. The result of the MANOVA was not significant, $F(2, 188) = 2.32, p > .05$. However, due to apriori hypotheses, each of the two univariate analyses were examined, which revealed significance for the variable “disliked”, $F(1, 190) = 4.55, p < .05$, but not for the variable “liked”, $F(1, 190) = .180, p > .05$. Relationally aggressive girls were more disliked than nonaggressive girls.

Sociometric status group has been considered an important social adjustment indicator in numerous prior studies (see Parker & Asher, 1987). Therefore, a second set of analyses were conducted to assess the relation between social status group membership and relational aggression (continuous scores). An ANOVA was performed to compare the relational aggression scores of members of the various social status categories. Social status group (popular, average, neglected, rejected, and controversial) served as the independent variable and girls’ relational aggression scores served as the dependent variable. The analysis yielded a significant effect for social status, $F(1, 113) = 4.87, p < .001$. Post hoc Tukey tests ($p < .05$) indicated that the controversial and rejected girls’ relational aggression scores were significantly higher than those of neglected children (refer to Table 7 for cell means and standard deviations).

Relational Aggression and Characteristics of Reciprocated Friendships

Assessing reciprocal friendships: aggressive and nonaggressive groups. A chi-square analysis was conducted to test the hypothesis that relationally aggressive girls were as likely as nonaggressive girls to have reciprocated friendships. Reciprocation could be determined only for those pairs where both persons participated as respondents. There were 3 relationally aggressive girls (7.9% of relationally aggressive girls) and 16

Table 7

Means and Standard Deviations of Relational Aggression Scores By Social Status

Social Status	<i>M</i>	<i>(SD)</i>
Controversial*	21.07	7.22
Rejected*	19.66	8.21
Average	16.50	8.06
Unclassified	15.09	7.99
Popular	14.80	7.26
Neglected	11.91	6.84

* Rejected and controversial status groups were significantly higher than neglected status group.

nonaggressive girls (8.2% of nonaggressive girls) who did not have a reciprocated friendship but had identified a nonparticipant as one of their three best friends. These subjects were counted as not having a reciprocated friend. The majority of relationally aggressive girls, 76.3% (29 of 38)³ had at least one reciprocal friendship, compared to 81.1% (159 of 196) of the nonaggressive girls; chi-square analyses indicated that this difference was nonsignificant, $\chi^2(1, N = 234) = .47, p > .05$. Relationally aggressive girls were as likely as nonaggressive girls to have a reciprocated friendship.

Behavioural status of friends of highest reciprocated friend of relationally aggressive girls. It was next of interest to assess the behavioural status of the highest rated reciprocated friend of relationally aggressive girls compared to nonaggressive girls. First a descriptive analysis was conducted of the number and percentage of friends who were classified as relationally aggressive, overtly aggressive, both relationally and overtly aggressive, or nonaggressive. Results showed that 29 of 38 relationally aggressive girls were identified as having a reciprocal friendship. Eight of the 29 relationally aggressive girls' highest reciprocated friendship was with a girl who was similarly aggressive (27.6%). Twenty-one of the relationally aggressive girls' highest reciprocated friendship was with a girl who was nonaggressive (72.4%). None of the relationally aggressive girls' highest reciprocated friendship was with a relationally/overtly aggressive or overtly aggressive girl.

A descriptive analysis of the reciprocated friendships of nonaggressive girls showed that 159 of 196 nonaggressive girls (81.1%) were identified as having a reciprocal friendship. Nineteen of the 159 nonaggressive girls' highest reciprocated friendship was with a girl who was relationally aggressive (11.9%). One hundred and

³ One relationally aggressive girl and 8 nonaggressive girls were absent when friendship data was collected.

forty nonaggressive girls' highest reciprocated friendship was with a similarly nonaggressive girl (88.1%). None of the nonaggressive girls' highest reciprocated friendship was with an overtly aggressive or relationally/overtly aggressive girl.

Two approaches were used to examine the behaviour status of the friends of relationally aggressive and nonaggressive girls. First, a 2 x 2 chi-square analysis was conducted to determine whether there was a difference between relationally aggressive and nonaggressive girls in friends' behaviour status. There was a significant association between aggression status of subject and aggression status of friend, $\chi^2(1, N = 188) = 4.88, p < .05$. Analysis of standardized residuals for each cell suggests the following divergences from chance expectancy: relationally aggressive girls had more relationally aggressive reciprocated friends and fewer nonaggressive reciprocated friends than expected ($z = 2.2, p < .05$); nonaggressive girls had more nonaggressive reciprocated friends and fewer relationally aggressive reciprocated friends than expected by chance ($z = 2.2, p < .05$).

Secondly, to determine if the highest reciprocated friend of relationally aggressive and nonaggressive girls differed in the mean level of aggression they engaged in, an ANOVA was conducted in which friend group (friends of relationally aggressive girls versus nonaggressive girls) served as the independent variable and friend's relational aggression score (continuous scores) served as the dependent variable. This analysis yielded a significant effect, $F(1, 187) = 5.58, p < .05$. The mean relational aggression score of the highest reciprocated friend of relationally aggressive girls ($M = 19.03, SD = 8.61$) was significantly higher than those of friends of nonaggressive girls ($M = 15.28, SD = 7.74$). Furthermore, the mean relational aggression score of nonaggressive friends of

relationally aggressive girls ($M = 17.91$, $SD = 7.22$) was significantly higher than those of friends of nonaggressive girls ($M = 12.32$, $SD = 5.28$), $F(1, 44) = 7.74$, $p < .01$. An ANOVA was also conducted on the overt aggression scores of the highest reciprocated friends and there was not a significant difference, $F(1, 187) = .278$, $p > .05$.

Social status of reciprocated friends of relationally aggressive girls. It was next of interest to assess the social status of the highest rated reciprocated friend of relationally aggressive girls compared to nonaggressive girls. First a descriptive analysis was conducted of the numbers and percentage of friends who were classified as popular, rejected, neglected, controversial, average, and unclassified. This was conducted on a subsample of 133 girls⁴ (26 relationally aggressive and 107 nonaggressive). See Table 8 for a breakdown of social status of highest rated reciprocated friend by behaviour status.

Due to the small number in some of the cells a decision was made to collapse across categories into two categories – higher status (popular and average) and lower status (rejected, neglected, and controversial). A 2 x 2 chi-square analysis was conducted to test the hypothesis that friends of relationally aggressive girls would have lower social status than friends of nonaggressive girls. The result was not significant $\chi^2(1, N = 72) = .543$, $p > .05$ indicating that aggression status of subject and social status of friends was independent..

In order to examine this issue further, a MANOVA was conducted to determine whether the highest reciprocated friends of relationally aggressive girls differed from the highest reciprocated friend of nonaggressive girls on the number of nominations received for “liked” and “disliked”. The result of the MANOVA was not significant, $F(2, 136) =$

⁴ Participation in 7 of the classrooms was considered too small (i.e., less than 70% participation rate) (Crick & Ladd, 1989) to allow for a reliable examination of the sociometric nomination data.

Table 8

Social Status of Highest Rated Reciprocated Friend By Behaviour Status Groups

Social Status	Relationally Aggressive <i>n</i> = 26		Nonaggressive <i>n</i> = 113	
	%	n	%	n
Popular	26.9	7	22.1	25
Rejected	3.8	1	4.4	5
Neglected	7.7	2	6.2	1
Controversial	3.8	1	8.8	10
Average	26.9	7	11.5	13
Unclassified	30.8	8	46.9	53

.10, $p > .05$. Univariate analyses were also not significant for the variable “disliked”, $F(1, 138) = .18, p = .85$, or for the variable “liked”, $F(1, 138) = .04, p = .85$. Thus, the highest reciprocated friend of relationally aggressive girls did not differ in likeability from the highest reciprocated friend of nonaggressive girls.

Assessing friendship quality of relationally aggressive and nonaggressive girls.

Only those subjects for whom both members of the friendship dyad completed the friendship questionnaire about the friend they spend the most time with were included in the analyses that investigated the relation between friendship quality and aggression status. As mentioned previously, because specific hypotheses had been proposed only for the relational and nonaggressive groups, only these groups were included in the analyses of friendship quality, resulting in the inclusion of 90 girls. Eleven relationally aggressive subjects had a nonaggressive friend. Thirty-four nonaggressive girls had a nonaggressive friend. For these 34 dyads, one subject was randomly designated as the subject, and the other as the friend. In addition, 3 other relationally aggressive girls completed the questionnaire about another relationally aggressive girl. However, due to the small number (3 dyads) these 6 girls were excluded from further analyses.

The focus of these analyses was twofold. First, did relationally aggressive girls report more exclusivity and use of relational aggression towards peers within their friendship with a nonaggressive girl compared to nonaggressive girls who were friends with a nonaggressive girl. Second, did nonaggressive “friends” report differences in the quality of their friendship depending on whether their mutual friendship was with a relationally aggressive or nonaggressive girl. These issues were examined in two MANOVAs. The dependent variables were the two subscale scores from the FQM

(Exclusivity and Relational Aggression Towards Others). The independent variables were relational aggression status of the targets and aggression status of the friends.

The first MANOVA (relational aggression status of the target) produced a significant main effect of target aggression status, $F(2, 42) = 3.43, p < .05$. Follow-up univariate analyses revealed that relationally aggressive girls reported significantly higher levels of exclusivity within their friendship ($M = 2.13, SD = .67$) than did nonaggressive girls ($M = 1.64, SD = .56$) who were friends with nonaggressive girls, $F(1, 44) = 5.47, p < .05$. The relationally aggressive girls also reported significantly higher levels of use of relational aggression towards others with their friends ($M = 2.70, SD = .67$) than did nonaggressive girls ($M = 2.14, SD = .80$), $F(1, 44) = 4.40, p < .05$.

The second MANOVA examined the friendship quality reported by the nonaggressive friends of relationally aggressive girls ($n = 11$) compared to nonaggressive friends of nonaggressive girls ($n = 34$). There was a significant main effect of friend status, $F(2, 42) = 9.29, p < .001$. Follow-up univariate tests revealed that the friends of the relationally aggressive girls reported significantly higher levels of exclusivity within their friendship ($M = 2.27, SD = .54$) than did nonaggressive girls who were friends with nonaggressive girls ($M = 1.55, SD = .45$), $F(1, 44) = 18.98, p < .001$. There was not a significant difference between friends of relationally aggressive girls in their reporting of the use of relational aggression towards others ($M = 2.33, SD = .56$) compared to the friends of nonaggressive girls ($M = 2.24, SD = .86$), $F(1, 44) = 1.31, p > .05$.

Thus, relationally aggressive girls reported greater levels of exclusivity within their friendship with a nonaggressive girl, and use of relational aggression along with their friend towards others compared to nonaggressive target subjects. Nonaggressive

friends of relationally aggressive girls reported significantly higher levels of exclusivity within their friendship compared to nonaggressive friends of nonaggressive girls, but there were no differences between the two groups in use of relational aggression along with their friend towards others.

Relational Aggression and Characteristics of Larger Social Network

Five primary aspects of preadolescent relationally aggressive girls' involvement in social clusters were considered in the analyses to address our hypotheses about their participation in social clusters: (a) cluster membership, (b) size of cluster, (c) the centrality of their membership in a cluster, (d) the centrality of their cluster in the larger social network, and (e) the aggression status of the members of their cluster.

Cluster membership. Only 2 relationally aggressive girls (5.1%) and 11 nonaggressive girls (5.4%) were not identified as belonging to any cluster. An additional 2 relationally aggressive girls (5.1%) and 23 nonaggressive girls (11.3%) belonged to only mixed cliques. To examine the relation between aggression status (relationally aggressive, not aggressive) and cluster membership status (member, not a member) in either a girls or mixed cluster, a 2 x 2 chi-square was performed. The result was not significant, $\chi^2(1, N = 243) = .005, p > .05$ indicating that aggression status and cluster membership were independent. A second chi-square analysis was conducted to examine whether there was a difference between the two groups in likelihood of belonging to a girls only cluster. The result was also not significant, $\chi^2(3, N = 243) = .466, p > .05$. Regardless of gender composition of clusters, aggression status and cluster membership were independent.

Size of clusters. The size of girls' clusters was evaluated as an additional indicator of potential restricted social opportunities. It was anticipated that the clusters to which relationally aggressive girls belonged would be smaller than the clusters to which nonaggressive girls belonged as relationally aggressive girls would not want their friends to have other important peer relationships.

It was noted that several of the girls were members of two or three clusters. While in some cases there was an overlap of some members in these clusters, in several instances these clusters consisted of entirely different members. Across all 26 classrooms (46 girls clusters and 22 mixed gender clusters identified) 8 relationally aggressive girls and 25 nonaggressive girls were found to be members of two clusters and one relationally aggressive and 7 nonaggressive girls were members of three clusters. However, in all but four of these cases, the second or third clusters the relationally aggressive girls belonged to were of mixed gender. For the four relationally aggressive girls that belonged to two girl clusters, in all cases the two clusters were in the same size category. Since the purpose of this study was to gain information about the social networks of relationally aggressive girls and their interactions with each other, only those clusters that consisted entirely of girls were examined in statistical analyses. Thus, all following analyses consisted of 35 relationally aggressive girls and 170 nonaggressive girls who belonged to all girls' clusters⁵. Only the first identified cluster was included in all analyses that examined the social network characteristics of girls to address the issue of independence of errors.

⁵ Two relationally aggressive girls and 11 nonaggressive girls were not identified as belonging to any cluster and 2 relationally aggressive girls and 23 nonaggressive girls only belonged to a mixed cluster and were excluded from further analyses that examined the characteristics of girls' clusters.

To examine the relation between aggression status and cluster size an ANOVA was performed with cluster size serving as the dependent variable and aggression status (relationally aggressive, nonaggressive) as the independent variable. While the mean cluster size of relationally aggressive girls was smaller than those of nonaggressive girls ($M = 7.63$, $SD = 3.14$, relationally aggressive; $M = 8.39$, $SD = 3.64$, nonaggressive girls), this difference was not significant, $F(1, 204) = 1.32$, $p > .05$.

Centrality of Clusters. Although no specific hypotheses were made regarding centrality of clusters, it was of interest to examine whether relationally aggressive girls belonged to more prominent clusters within the larger girls' social networks than nonaggressive girls. A descriptive analysis was conducted of the level of centrality of the clusters that relationally aggressive girls belonged to compared to nonaggressive girls. For relationally aggressive girls, 21 belonged to nuclear clusters (60%), 11 belonged to secondary clusters (31.4%), and 3 belonged to peripheral clusters (8.6%). For nonaggressive girls, 78 belonged to nuclear clusters (45.9%), 60 belonged to secondary clusters (35.3%), and 32 belonged to peripheral clusters (18.8%). A 2 x 3 chi-square analysis was conducted to determine whether there was a difference between relationally aggressive and nonaggressive girls in centrality level of the cluster to which they belonged. There was not a significant difference, $\chi^2(2, N = 205) = 3.11$, $p > .05$ indicating that aggression status and cluster centrality were independent.

It was also of interest to examine the relation between level of relational aggression (continuous scores) and cluster centrality. An ANOVA was performed with cluster centrality (nuclear, secondary, peripheral) serving as the independent variable and girls' relational aggression scores serving as the dependent variable. The analysis yielded

a significant effect for cluster status, $F(2, 202) = 6.04, p < .01$. Post hoc tukey tests ($p < .05$) indicated that the relational aggression scores of members of nuclear clusters ($M = 17.14, SD = 7.40$) were significantly higher than those of secondary clusters ($M = 14.31, SD = 8.07$) and peripheral clusters ($M = 12.31, SD = 7.77$). Thus, girls who were members of nuclear clusters were those who were highest in relational aggression.

Relationally aggressive and nonaggressive girls' positions in social clusters.

While it was of particular interest to examine whether relationally aggressive nonrejected girls held more central positions within the clusters they belonged to compared to relationally aggressive rejected girls, the sample size of rejected aggressive girls ($n = 7$) was not large enough to examine this question (4 were nuclear members, 2 were secondary members and 1 was a peripheral member). However, it was also of interest to examine the position relationally aggressive girls held in girls' clusters compared to nonaggressive girls.

A descriptive analysis was conducted of the position relationally aggressive girls held compared to nonaggressive girls. For relationally aggressive girls, 24 were nuclear members of clusters (68.6%), 8 were secondary members of clusters (22.9%), and 3 were peripheral members of clusters (8.6%). For nonaggressive girls, 111 were nuclear members of clusters (65.3%), 43 were secondary members of clusters (25.3%), and 16 were peripheral members of clusters (9.4%). A chi-square analysis was conducted to determine whether there was a difference between relationally aggressive and nonaggressive girls in positions held in the clusters. The chi-square was not significant, $\chi^2(2, N = 205) = .139, p > .05$, indicating that aggression status and position held in cluster were independent.

An ANOVA was performed to examine the relation between level of relational aggression (continuous scores) and the position of the subjects in clusters. Subject's position (nuclear, secondary, peripheral) served as the independent variable and girls' relational aggression scores served as the dependent variable. The analysis did not yield a significant effect for subject's position, $F(2, 202) = .497, p > .05$, (nuclear position: $M = 15.46$, secondary position: $M = 15$, peripheral position: $M = 13.63$).

It was expected that relationally aggressive girls who exhibited high levels of prosocial behaviours would hold more central positions than relationally aggressive girls who were not identified by their teachers to be as prosocial. An ANOVA was performed to examine the relation between level of prosocial behaviour and the position relationally aggressive girls held in clusters. Subject's position (nuclear, secondary, peripheral) served as the independent variable and relationally aggressive girls' prosocial scores served as the dependent variable. The analysis yielded a significant effect for subject's position, $F(2, 32) = 5.21, p < .01$. Post hoc tukey tests ($p < .05$) indicated that the prosocial scores of nuclear relationally aggressive girls ($M = 13.67, SD = 3.36$) were significantly higher than those of secondary relationally aggressive girls ($M = 10.13, SD = 2.64$) and peripheral relationally aggressive girls ($M = 9.67, SD = 3.49$). Thus, relationally aggressive girls who were of nuclear status were those who had the highest levels of prosocial behaviour.

Overall social network centrality. The overall social network centrality of relationally aggressive girls compared to nonaggressive girls was also examined. *High centrality* refers to girls who were a nuclear member of a high-prominent cluster. *Median centrality* refers to girls who either were of secondary status in a high-prominent cluster

or nuclear or secondary status in a cluster of median prominence. *Low centrality* girls were (a) peripheral members of any cluster, or (b) members of low-prominent clusters.

For relationally aggressive girls, 12 were of high centrality (34.3%), 17 were of median centrality (48.6%), and 6 were of low centrality (17.1%). For nonaggressive girls, 47 were of high centrality (27.6%), 80 were of median centrality (47.1%), and 43 were of low centrality (25.3%). A chi-square analysis was conducted to determine whether there was a difference between relationally aggressive and nonaggressive girls in overall social network centrality. The chi-square was not significant, $\chi^2(2, N = 205) = 1.27, p > .05$ indicating that aggression status and social network centrality were independent.

An ANOVA was performed to examine the relation between level of relational aggression and overall social network centrality. Overall social network centrality (high, median, and low) served as the independent variable and girls' relational aggression scores served as the dependent variable. The analysis yielded a significant effect for social network centrality, $F(2, 202) = 4.13, p < .05$. Post hoc tukey tests ($p < .05$) indicated that the relational aggression scores of high centrality members ($M = 17.32, SD = 6.57$) were significantly higher than those of low centrality members ($M = 13.00, SD = 8.28$), but not significantly higher than those of median centrality members ($M = 15.35, SD = 8.19$). Thus, girls who are of overall high centrality were those who were highest in relational aggression.

Relational aggression, social status, and network position. A descriptive analysis was conducted of the centrality level of relationally aggressive girls according to social status and results are presented in Table 9. The small numbers in the different cells

Table 9

Cluster Centrality Level of Relationally Aggressive Girls as a Function of Social Status

Social Status	Nuclear <i>n</i> = 23	Secondary <i>n</i> = 9	Peripheral <i>n</i> = 3	Not Nominated <i>n</i> = 2
Popular (2)	2	0	0	0
Rejected (8)	4	1	1	2
Neglected (1)	0	1	0	0
Controversial (3)	3	0	0	0
Average (8)	6	1	1	0
Unclassified (15)	8	6	2	0

did not allow statistical comparison. However, it can be seen that controversial and popular relationally aggressive girls were only central members of clusters in contrast to the other social status groups whose members were represented more evenly across centrality levels. The two relationally aggressive girls who were not nominated as belonging to a cluster were both of rejected status. In future, a larger sample size would allow for statistical examination of these differences.

Behavioural characteristics of group membership of relationally aggressive and nonaggressive girls. The next question addressed was “Are relationally aggressive girls likely to hang around together in social clusters?” This question, as it relates to relationally aggressive girls, has never been examined in the literature. Sociograms were constructed of the 46 girls’ only clusters to provide an overview of what the behavioural nature of the clusters were that relationally aggressive girls belonged to compared to clusters comprised of only nonaggressive girls. These clusters were then examined to determine how many had relationally aggressive girl members. There were 22 clusters in total to which 35 different relationally aggressive girls belonged (see Appendix I for the sociograms of relationally aggressive girls). Ten of these clusters had only one relationally aggressive girl in them. Nine clusters had two relationally aggressive girl members. One of these clusters had two relationally aggressive girl members and two relationally/overtly aggressive girl members. Two clusters had three relationally aggressive girl members and one had six relationally aggressive girl members. Twenty-four of the clusters were comprised of only nonaggressive girls.

A goodness-of-fit chi-square analysis was conducted to determine if there were more relationally aggressive girls in a cluster than would be expected by chance. The

chi-square was significant, $\chi^2(1, N = 46) = 20.19, p < .001$. Clearly there were more clusters with two or more relationally aggressive girls than would be expected by chance.

It was also of interest to determine whether the nonaggressive members of clusters that had relationally aggressive girl members had a higher mean score for relational aggression compared to the nonaggressive girls of clusters that only had nonaggressive girl members. The literature that has examined the behavioural similarity of social clusters of overtly aggressive girls was used as a guide for making a decision as to how to statistically examine this question. An aggregate index of social cluster behaviour is the preferred method in the literature as it allows unique yet comparable scores to be formed despite differences in cluster size (Kindermann, 1993). Mean relational aggression scores of nonaggressive girls were computed separately for each cluster. A t-test was conducted to compare the mean relational aggression score of nonaggressive girls of the 24 clusters with only nonaggressive girls ($M = 11.95, SD = 3.71$) to that of nonaggressive girls of the 22 clusters with relationally aggressive girl members ($M = 13.81, SD = 3.93$). While the mean relational aggression score of nonaggressive girls of clusters with relationally aggressive members was higher than those of nonaggressive girls of clusters containing only nonaggressive members, the difference was not significant, $t(44) = 1.65, p > .05$.

Relational aggression, social status and cluster membership. While it was of interest to examine whether the clusters to which rejected relationally aggressive girls belonged were comprised of lower status peers than were clusters to which nonaggressive girls belonged, as anticipated the number of rejected aggressive girls (7) was not large enough to examine this question. However, it was also of interest to determine whether

there were differences in the social status of nonaggressive girls of clusters with relationally aggressive girl members compared to the nonaggressive girls of clusters with only nonaggressive girl members. Mean social preference and social impact scores of nonaggressive girls were computed separately for each cluster. A MANOVA was conducted with mean social preference and social impact cluster scores serving as dependent variables and relational aggression status of the cluster as the independent variable (relationally aggressive cluster members vs. no relationally aggressive cluster members). The result was not significant, $F(2, 43) = 1.24, p > .05$. There was not a significant difference between nonaggressive girls of clusters with relationally aggressive girl members and nonaggressive girls of clusters with only nonaggressive girl members in their social preference scores or social impact scores. Thus, the social status of nonaggressive girls does not appear to be different for girls' clusters that have relationally aggressive girl members compared to those clusters that have only nonaggressive girl members.

Discussion

The primary goal of this study was to determine whether the characteristics of reciprocated friendships and social network affiliations of relationally aggressive girls differed from those of nonaggressive girls. This represents an attempt to replicate some of the results of previous research that has examined the social status of relationally aggressive children and the quality of their friendships (Crick & Grotpeter, 1995; Grotpeter & Crick, 1996; Rys & Bear, 1997). In addition, the behavioural and social status of the reciprocated friends of relationally aggressive girls was examined as well as a description of relationally aggressive girls' broader social network. While much is

known about the behavioural status of friends and social networks of overtly aggressive children, this research is the first such examination of relationally aggressive girls' reciprocated friendships and their broader social networks.

Gender Differences in Level of Aggression and Extreme Groups

The results of the present study suggested that the mean level of relational aggression in a normative sample using teacher ratings was not different for boys versus girls. This finding is consistent with that of Rys and Bear (1997) who also found no differences between boys and girls in the mean level of relational aggression when a teacher rating measure was used. In comparison, boys in the present study were found to be more overtly aggressive than girls which is consistent with past research (Block, 1983; Crick & Grotpeter, 1995; Rys & Bear, 1997).

When extremely aggressive children were identified, the results revealed that 45 children were identified as relationally aggressive (39 female, 6 male), 33 as overtly aggressive (31 male, 2 female), 38 as relationally and overtly aggressive (31 male, 7 female), and 383 as nonaggressive (204 female, 179 male) children. Extremely relationally aggressive children were predominantly girls (15.5% of girls versus 2.4% of boys). However, boys were identified as relationally/overtly aggressive (12.6% of boys vs. 2.8% of girls), and overtly aggressive (12.6% of boys vs. 0.8% of girls) more often than girls. These findings support that of previous research indicating that relational aggression is distinct from overt aggression and is the mode of aggression most frequently used by aggressive girls (Crick & Grotpeter, 1995; Daniels et al., 2000; Rys & Bear, 1997).

The most likely explanation for the finding, which is consistently emerging in the literature, that boys and girls are similar in mean level of relational aggression, yet girls are more often identified as extreme relational aggressors (Daniels et al., 2000; Rys & Bear, 1997; Sinclair, 1999) involves the gender distribution of the relational/overt group (31 boys, 2 girls in the present study). When boys and girls were compared on the mean level of relational aggression they engaged in, male relational/overt aggressors were included in the analysis and inflated the mean for boys' relational aggression scores. However, once extreme groups were created, the subgroup of male relational/overt aggressors were identified and differentiated from relational aggressors. Thus, once male relational/overt aggressors were removed from the relationally aggressive group, it follows that gender differences would emerge. What is most important, is the fact that the reported gender gap in the aggression literature narrows considerably during the middle childhood period when relational aggression is examined, in addition to overt aggression.

Together with recent research, our findings suggest that relational aggression is a meaningful construct, and distinct from overt aggression. Both boys and girls use relational aggression, however preadolescent girls tend to use it excessively. On the other hand, boys tend to use either only overt aggression or if they use high levels of relational aggression they tend to also use high levels of overt aggression at this age. There are a couple of explanations for these gender differences in aggression. Strong societal norms most probably discourage the use of overt aggression by girls. Moreover, gender differences in aggression have been attributed to gender differences in the nature of friendship groups. Boys play in larger, hierarchically organized groups while girls'

groups are smaller and thus, more intimate. In boys' groups, the hierarchy of instrumentality and physical dominance are stressed while girls value close intimate friendships (Crick & Grotpeter, 1995; Maccoby, 1990). Crick and Grotpeter (1995) argue that when children attempt to inflict harm on others (i.e., aggressing), they do so in ways that best thwart or damage the goals that they value. Hence, boys use overt aggression consistent with goals of instrumentality and dominance. In contrast, girls attempt to cause damage to their victim's peer relationships by thwarting their desire for close, intimate relationships.

Social Status of Relationally Aggressive Girls

It was of interest to examine the social status of relationally aggressive girls in an effort to replicate previous findings that relationally aggressive children are disliked and often rejected by their peer group (Crick & Grotpeter, 1995; Rys & Bear, 1997). These findings are disturbing given the fact that rejected children have been found to be at serious risk for both concurrent and later social maladjustment (Coie & Cillessen, 1993; Parker & Asher, 1987).

This study provides further support to a growing body of research that suggests that school-age girls who engage in relational aggression experience social problems (Crick & Grotpeter, 1995; Rys & Bear, 1997; Tomada & Schneider, 1997). As expected, relationally aggressive girls were significantly more disliked by the general peer group than nonaggressive girls. In addition, it was the rejected and controversial girls who exhibited the highest levels of relational aggression.

Only two prior studies have specifically examined the relation between sociometric status classification and relational aggression. Crick and Grotpeter (1995)

found that controversial status children were significantly more relationally aggressive than rejected children, who in turn, were more relationally aggressive than popular and neglected children. On the other hand, Tomada and Schneider (1997) found in an Italian sample that rejected children were more relationally aggressive than controversial children. In the present study there was not a significant difference between controversial and rejected girls in their relational aggression scores. However, the girls who exhibited the highest levels of relational aggression were the rejected and controversial girls and these girls were significantly more relationally aggressive than neglected girls. More research is needed before any firm conclusions can be drawn, however, based on these three studies it appears that controversial and rejected children are the most relationally aggressive. This is of great concern since relational aggression, as has rejection, has been found to contribute to the prediction of children's concurrent and later social/psychological maladjustment (e.g., depression, loneliness, isolation, and social anxiety) (Crick & Grotpeter, 1996; Parker & Asher, 1997).

While it is not surprising that rejected children engaged in high levels of relational aggression, the finding that controversial children engaged in high levels of relational aggression is interesting. By definition controversial children are highly liked by some peers and highly disliked by other peers. It is quite possible that controversial girls direct their relationally aggressive behaviours towards some peers and not at all towards other peers. If this is the case, it seems likely that controversial children may receive disliked nominations from those peers who they attempt to ostracize from peer interactions whereas they may receive liked nominations from those peers who have not been subjected to this type of behaviour.

It has been suggested in the literature that controversial, relationally aggressive children may play a critical role in peer groups by controlling the structure and nature of these groups, (e.g., controlling who is included in activities or who is excluded) (Crick, 1996). This study was not able to directly examine this hypothesis as there were only three controversial, relationally aggressive girls identified, however, the present pattern of findings for relational aggression suggests that this may be the case as all three of these girls were nuclear members of their social cluster. Both popular and controversial boys were rated by their peers as being more cooperative, helpful, and better leaders (prosocial behaviour) than average, neglected or rejected boys. However, controversial children were also highly active and aggressive and aroused peer group anger (Coie et al., 1990). Furthermore, in every study in which a controversial group of children has been identified, these children have been the most visible (Coie et al., 1990). Further research with a large enough sample size is required to examine whether controversial relationally aggressive children play a critical role in controlling the structure and nature of social clusters, particularly since research on controversial children is lacking.

This leads to the question of what is the pathway by which relational aggression and peer rejection is connected. One possibility is that being disliked or rejected by peers precedes relational aggression. For example, a girl who is rejected by her peers may try to harm peers' relationships with others in an effort to retaliate for being rejected. However, another possibility is that it is the use of relationally aggressive behaviours, which are aversive in nature, that leads to being disliked or rejected by some peers. Support for this temporal relation comes from past research that has established this relation for rejection and overt aggression for boys (Coie & Kupersmidt, 1983; Dodge,

1983) and for relational aggression and rejection for girls (Crick, 1996; Rys & Bear, 1997; Tomada & Schneider, 1997). Using three different samples that were followed over a period of six months, these studies found that it was the use of relational aggression that led to rejection by peers, particularly by those peers toward whom the rejected child did not direct prosocial behaviours. Either way, the association between relational aggression and rejection that was found in the present research provides further support that relationally aggressive girls may have social problems.

Characteristics of Friendships of Relationally Aggressive Girls

Friends provide children with emotional support, affection, self-validation, companionship, help, and opportunities to practice resolving conflicts within a supportive environment. All of these experiences have been found to be important for the acquisition of interpersonal skills and competencies, for success in future relationships, and for emotional well-being (Newcomb & Bagwell, 1996; Rose-Krasnor, 1997). However, by definition relationally aggressive children manipulate their social connections and therefore, it is likely that engaging in these behaviours has implications for their friendships. Children who are relationally victimized by their friends are deprived of the opportunity for closeness and acceptance. Consequences of relational victimization bode poorly for children's adjustment and the ability to satisfy their need to belong (Crick et al., 2001).

Although relationally aggressive girls were more disliked by the larger peer group than their nonaggressive peers, as predicted, relationally aggressive girls were just as likely as nonaggressive girls to have a reciprocated friendship. The percentages of children with reciprocated friends reported in this study (76% of relationally aggressive girls and 81%

of nonaggressive girls) are consistent with previous findings (Grottpeter & Crick, (1996; Rys & Bear, 1997).

At first glance many people may be surprised that relationally aggressive girls have reciprocated friendships as many of their behaviours are quite aversive in nature. However, when one considers the dynamics involved in relational aggression, this finding is really not that surprising. Relational aggression is characterized by the manipulation of friendship ties, thus there must be at least one other person in the friendship circle to manipulate the friendship with, implying that these girls maintain friendships (Rys & Bear, 1997). This finding lends support to the points of view voiced by others (e.g., Bukowski & Hoza, 1989; Parker & Asher, 1993) that the same behaviours do not necessarily predict both acceptance within the larger peer group and within reciprocal friendships. Yet it is somewhat surprising that relationally aggressive girls maintain mutual friendships and that despite being possibly victimized by their friend, nonaggressive girls identify relationally aggressive girls as being one of their best friends. This leads to the question of what is the nature of these friendships.

One of the goals of the present study was to examine the behavioural status of friends of relationally aggressive girls as this hasn't been examined previously in the literature. It has been suggested in the aggression literature that overtly aggressive individuals maintain reciprocal friendships because they tend to associate with other overtly aggressive individuals who may not find their behaviours aversive, particularly if they are not the target of these behaviours (Cairns et al., 1988). Evidence for this hypothesis is provided by the finding in the present study that relationally aggressive girls were more than twice as likely as nonaggressive girls to have a highest reciprocated

friendship with a similarly aggressive girl (i.e., 28% of relationally aggressive girls had relationally aggressive best friends compared to 12% of nonaggressive girls).

Furthermore, the relational aggression scores of the highest reciprocated friends of relationally aggressive girls were significantly higher than those of nonaggressive girls.

These results provide support for the behavioural similarity hypothesis within friendships of relationally aggressive girls.

Previous research indicates that overtly aggressive preadolescent boys tend to affiliate with other boys who are similarly aggressive (Bagwell et al., 2000; Cairns et al., 1999). Overt aggression is the most common form of aggression used by boys while relational aggression is the most common form used by girls. While no other study has examined the propensity for relationally aggressive girls to associate with other similarly aggressive girls, it certainly has been established in the literature that overtly aggressive girls do not tend to affiliate with other overtly aggressive girls until adolescence (Bagwell et al., 2000; Cairns, 1988). This study provides important evidence that when the form of aggression used most frequently by girls is examined, behavioural similarity is indeed a feature of preadolescent relationally aggressive girls' friendships. However, not all friends of relationally aggressive girls were similar in behaviour status. This finding suggests that other important attributes or factors might be examined in future research to determine if they better predict similarity within friendships of relationally aggressive girls (e.g., academic achievement, socioeconomic status, interests, values). Alternatively, there may be individual differences in the tendency to choose a friend that is similar to oneself. In fact, it has been suggested that the lack of friendship homophily for a child

with behaviour difficulties, such as aggression, may be a protective factor against continuing development on a deviant pathway (Robins & Rutter, 1990).

What is not clear is if the girls in dyadic friendships in the present study displayed relationally aggressive behaviours prior to the establishment of their friendship, or if alternatively, through association with relationally aggressive girls, nonaggressive girls became increasingly relationally aggressive. Sullivan (1953) suggests that during preadolescence, the establishment of a "best friend" is crucial in children's socioemotional development. Sullivan argued that children adjust their behaviours in this friendship to become increasingly similar to one another over time. Before firm conclusions can be drawn regarding the pathway by which behavioural similarity occurs, further research with a larger, longitudinal sample needs to be conducted to determine the effects of influence versus selection on similarity between friends.

Another goal of this study was to compare the social status of relationally aggressive and nonaggressive girls' highest reciprocated best friend. Findings indicated that the friends of relationally aggressive girls did not differ in social status from the friends of nonaggressive girls'. While it was hypothesized that relationally aggressive girls' friends would be of lower social status, it was also hypothesized that the relationally aggressive girls themselves would be of lower social status than the nonaggressive girls which was not the case. Relationally aggressive girls were significantly more disliked by the general peer group and thus according to the similarity hypothesis one would have expected that their friends would be similarly disliked. In a study of similarity of social status, aggressive, withdrawn behaviour, and academic achievement, Kupersmidt, DeRosier et al. (1995) also found that the similarity-attraction

hypothesis only received partial support in the prediction of friendships from social status. While children who were high in social preference were more likely to be friends, most of the children who were poorly accepted, (neglected and rejected) did not play with one another even though they were of similarly low status. In fact, the reciprocated friends of low status children tended to be of higher status or average children.

One possible explanation for the finding that friends were not similarly disliked is that they are not as extremely relationally aggressive, and consequently may not be perceived as the initiators of this type of behaviour and thus, are not disliked by the general peer group. Future research is needed that examines the pattern of interactions between relationally aggressive girls and their friends to shed light on the finding that while relationally aggressive girls are more disliked by the general peer group, this does not lead them to associated predominantly with other girls who are similarly disliked.

An examination of the dyadic interactions between relationally aggressive and nonaggressive girls found that consistent with Grotper and Crick (1996), relationally aggressive girls engaged in highly exclusive friendships. This is not a surprising finding given one of the goals of relational aggression is to maintain an exclusive relationship within friendships by ostracizing them from other peers. Thus, relationally aggressive girls probably encourage high levels of exclusivity in their friendships in order to have power over their friends. This may put the friend at risk of being manipulated because she may have limited friends to turn to as alternatives.

In contrast to Grotper and Crick, relationally aggressive girls in this study reported that they and their friend used relational aggression to harm other peers. Interestingly, the friends of relationally aggressive girls did not report using relational

aggression along with their friend to harm those outside of the friendship. Such differences in perception may be due to real differences between the girls' experiences in the friendship. But just as important, they may signal that the friendship has not progressed far toward a shared understanding of the meaning of each other's behaviour. It is possible that friends did not report harming others simply because they do not see their behaviour as problematic. Alternatively, they might not feel they are actively involved when their friend uses relational aggression to harm others, and that they are simply associating with the aggressive friend. In fact, it has been found that in general, friendships' perceptions of their relationship are only moderately related to their partner's perceptions (Parker & Asher, 1993).

Another possibility is that the nonaggressive friends don't report the use of relational aggression because they are trying to protect their friend. Studies show that children describe their closest friendship in more positive and less negative terms than they describe their second or third closest friendship (Berndt & Keefe, 1992). Alternatively, it is possible that these friends, while not directly reporting they use relational aggression to harm others, may be pressured to get involved in the interaction for fear that they too may be victimized.

In any case, these findings are particularly worrisome in light of recent research which indicates that children who use relational aggression report higher levels of depression and loneliness than their nonaggressive peers (Crick & Grotpeter, 1996) and that bullying types of aggressive behaviour has consequences for the peers who witness the interaction (Tattum, 1989). Future research should examine the pattern of interactions between relationally aggressive and nonaggressive friends to determine if the

nonaggressive girls actively participate in the use of relational aggression towards others, if they reprimand the aggressive girl for using these behaviours, or if they sit and watch in silence which in itself serves to reinforce and maintain this type of behaviour.

The fact that relationally aggressive girls reported the use of relational aggression to harm those outside of the friendship is really not surprising. It appears that not only do relationally aggressive girls focus on maintaining relationships by manipulating their friend, but by also manipulating the peer group. By manipulating both their own and their friend's relationships with the peer group, relationally aggressive girls may gain more power and control over their friend. Even though the friends of relationally aggressive girls don't acknowledge that they are being drawn into using relational aggression, relationally aggressive girls may further destroy their friend's relationships with other peers by recruiting their friend to perpetrate this behaviour against the peer group.

These results indicate that girls who befriend relationally aggressive children may be pulled into aggressive encounters, even if they themselves are not relationally aggressive. On the other hand, the friends of relationally aggressive girls may be higher in relational aggression themselves and may be attracted to girls who use this form of aggression. In fact, the mean relational aggression scores of nonaggressive friends of relationally aggressive girls were significantly higher than those of friends of nonaggressive girls. What is not clear, is whether relationally aggressive girls chose friends who are relatively higher in relational aggression or whether the nonaggressive girls become increasingly more relationally aggressive through association with relationally aggressive girls. Regardless of the antecedents, friends may be risk factors

when both members are similarly aggressive as they are likely to socialize one another in maladaptive directions (Dishion, Patterson, & Griesler, 1994).

At first glance these findings provide support for the theoretical assumption that relational aggression involves the manipulation of friendship relations by the relationally aggressive individual in order to gain exclusive access to their friend and exclude the friend from the larger peer group (Crick & Grotpeter, 1995). However, it was interesting to note that of the 11 relationally aggressive/nonaggressive friendship dyads that completed the friendship questionnaire, in 10 instances both members of the friendship were also members in the same social cluster. Thus, despite reporting that both friends demanded exclusivity within their friendship, both members of the friendship did associate with other peers in a social cluster frequently enough to be identified as hanging out together as a group. Such within-cluster friendship reciprocity is a general feature of girls' social clusters (Cairns et al., 1985; Cairns et al., 1995) and appears to also characterize relationally aggressive girls' social clusters.

In contrast to our study, Grotpeter and Crick (1996) did not find that relationally aggressive children and their friends reported the use of relational aggression towards others more than nonaggressive children. Two explanations seem plausible. In the present study the girls were answering questions about the child they spend the most time with which was frequently their highest rated best friend (correlation of .89 between best friend and friend they spend the most time with). In contrast, Grotpeter and Crick had children answer questions about a specific relationship, their highest rated reciprocated friendship. In some cases this would have been their third best friend, and thus not all children were actually rating their most valued peer relationship. It has been

demonstrated that ratings of friendship quality can be used to differentiate peer relationships of varying intensity (Bukowski & Hoza, 1989). The friends in the present study were typically best friends. It is quite possible that relationally aggressive girls reported the use of more relational aggression towards others in an effort to increase exclusivity within the friendship by ostracizing their very best friend from the larger peer group to gain power and control over them.

A second explanation is that Grotmeter and Crick (1996) included both boys and girls in their analyses but did not report results separately for boys and girls. In their study they found a significant difference between boys and girls in mean relational aggression scores. Any possible differences between boys and girls in their use of relational aggression toward others could have been obscured as they did not examine gender differences in friendship qualities. These factors likely account for the inconsistencies between previous research (Grotmeter & Crick, 1996) and the present study.

Summary of Characteristics of Friendships

The findings of this study provide evidence that even though relationally aggressive girls in general are more disliked by the larger peer group, they are just as likely as nonaggressive girls to have reciprocated best friendships. Furthermore, relationally aggressive girls have more relationally aggressive reciprocated friends than do nonaggressive girls. In addition, the relational aggression scores of the highest reciprocated friends of relationally aggressive girls are significantly higher than those of nonaggressive girls. Surprisingly, the friends of relationally aggressive girls did not differ in social status from the highest reciprocated friends of nonaggressive girls.

Finally, relationally aggressive girls' friendships were marked by high levels of exclusivity and the use of relational aggression towards other peers.

It has been suggested that relationally aggressive girls frequently victimize their friends and that these friends tend to be rejected by the peer group (Crick & Grotpeter, 1996; Crick et al., 2001). Unexpectedly, relationally aggressive girls' best friends did not differ from the friends of nonaggressive girls in likeability. Even though relationally aggressive girls were disliked by the larger peer group, this did not prevent them from forming mutual friendships with girls who were accepted within the larger peer group. This suggests that if one of the goals of relational aggression is to gain exclusive access to the friend, as has been hypothesized in the literature, it was not a totally effective strategy for many of the relationally aggressive girls in this study as many of their friends were not alienated from the rest of the peer group. However, relationally aggressive girls and their friend did report more exclusivity within their friendships, but what is not clear is the nature of the dynamics between these girls within the larger social cluster.

Future longitudinal research is needed that directly examines relationally aggressive girls' dyadic friendships as it may be an important one for future intervention efforts with relationally aggressive girls. It would be of interest to determine the friends' motivation for maintaining friendships with relationally aggressive girls. While we don't know if the friends of relationally aggressive girls were directly victimized, if indeed they are being coerced into participating in relationally aggressive acts against the peer group this can be construed as indirect victimization. If the findings revealed here are accurate, and the friends of relationally aggressive girls do collaborate to perpetrate relational

aggression against the peer group, then their affiliation with the relationally aggressive girl is likely detrimental to their own social status and peer relations over time.

It is important to note that these findings are correlational in nature. Future research is needed to investigate the psychosocial adjustment of the girls who continue to maintain relationships with relationally aggressive girls over time as well as their own use of relational aggression to determine if they become even more relationally aggressive through their association over an extended period of time resulting in being disliked or rejected by the larger peer group.

Characteristics of Relationally Aggressive Girls' Social Networks

The lack of research on children's social clusters compared with other dimensions of their peer relations is due in part to the methodological complexities inherent in assessing the social structure of a larger network. In this study, we have demonstrated that the social cognitive map procedure could be used to identify social clusters that are based on a consensus of the members of the larger peer group. In addition, this procedure provided a measure of both the subjects' centrality within the clusters as well as the centrality of the clusters within the larger social network.

Cluster Size, Membership, and Centrality

In general, results suggested that while relationally aggressive girls were as likely as nonaggressive girls to belong to clusters, there were no differences between relationally aggressive girls and nonaggressive girls in cluster size, cluster status, or the subjects' position within the cluster. However, members of nuclear clusters had significantly higher relational aggression scores than members of secondary clusters and peripheral clusters. Furthermore, relationally aggressive girls who held nuclear positions

had significantly higher prosocial scores than relationally aggressive girls who held either secondary or peripheral positions in clusters.

In the present study girls' clusters were found to be significantly smaller than those of boys'. While it was not the purpose of this study to compare girls' social clusters to those of boys', this study provided more support for the growing body of literature that has found that girls' clusters are at the very least not larger and in many studies significantly smaller than that of boys (Cairns et al., 1998). It has been suggested that these smaller clusters, which are characteristic of girls, enables them to manipulate friendship patterns more effectively than the larger, more loosely organized clusters of boys do.

The majority of clusters for both boys and girls were comprised of same-sex members. This is in keeping with a large body of research that has demonstrated that from early childhood through adolescence there is a tendency for girls and boys to form same-sex social clusters (Beneson, 1990; Cairns et al., 1985; Hallinan, 1980; Lagerspetz, Bjorkqvist et al., 1988).

It was anticipated that the clusters to which relationally aggressive girls belonged would be smaller than the clusters to which nonaggressive girls belonged as relationally aggressive girls would not want their friends to have other important peer relationships. Quite unexpectedly, relationally aggressive girls were found to belong to clusters of similar size as their nonaggressive peers. Thus, while it has been established in the literature that there are no differences in the size of overtly aggressive and nonaggressive children's social clusters (Cairns et al., 1988), this is the first evidence that the same holds true for relationally aggressive girls. Many of these girls were members along with

their reciprocated friends in social clusters. Thus, although relationally aggressive girls and their friends reported more exclusivity within their friendship, this did not prevent them from associating with other girls at the same time within clusters of similar size to those of nonaggressive girls.

The finding that relationally aggressive girls were as likely to be members of social clusters as nonaggressive girls extends previous findings that overtly aggressive children are as involved as nonaggressive children in social clusters (Cairns et al., 1988; Xie et al., 1999). In this study relationally aggressive girls were usually members of social clusters and they typically had a network of friends. Relationally aggressive girls may be disliked by some classmates for legitimate reasons (ridiculing, spreading rumors, ostracizing), however, dislike by certain peers is not equivalent to being rejected or isolated from the entire social network. This finding points to the competencies that allow these girls to survive in particular social contexts.

Not only were relationally aggressive girls members of clusters but they were also as likely as nonaggressive girls to be members of nuclear clusters, that is highly-salient clusters. In addition, relationally aggressive girls were as likely to be of nuclear status within their social cluster as nonaggressive girls. However, nuclear status should not be confused with "popularity". Nuclear status simply means that these girls have a high profile in the social network. They are individuals who are reported by many of their peers as belonging to a group. This high profile could be acquired for good or bad reasons or both. In fact, relationally aggressive girls were significantly more disliked than nonaggressive girls, yet the majority of them were nuclear members in clusters.

As expected, relationally aggressive girls who also exhibited prosocial behaviours held more central positions compared to relationally aggressive girls who were not assessed by their teachers to be prosocial. Being relationally aggressive doesn't preclude one from also being prosocial. In fact, in order for their strategies to be effective, one could argue that relationally aggressive girls have to be very socially skilled.

Furthermore, nuclear status may be necessary in order for relationally aggressive behaviours to be most effective. Such behaviours include directing peers to ignore other peers, ostracism, and gossiping. These strategies will likely be maintained in these girls' behavioural repertoires as long as the benefits associated with them outweigh the costs. It is quite probable that the use of these behaviours result in relationally aggressive girls gaining notoriety, power, control, and prominence within clusters despite being more disliked by the general peer group. When relationally aggressive behaviours were used in combination with prosocial behaviours, relationally aggressive girls achieved a higher level of centrality within their clusters, that is, they were noticed by many other members of their peer group and were frequently reported as being solid and prominent members.

Behavioural Similarity in Clusters

One of the most interesting aspects of this study was the finding that many relationally aggressive girls hung out together in social clusters that had two or more relationally aggressive girl members. It has been established in the literature that overtly aggressive preadolescent boys tend to affiliate with others who share similar behaviour patterns. When teacher ratings were used, girls in the same social clusters were found to be similar to each other in almost all behavioural and cognitive domains. However, it should be noted that for overtly aggressive behaviour, research indicates that only girls in

grades six and seven displayed significant similarities to other girls within the same social clusters. Girls in grades four and five did not form friendships and social clusters based on similarities in overt aggression (Bagwell et al., 2000; Cairns et. al., 1988; Xie et al., 1999). The present study provides evidence that when the form of aggression more typically used by extremely aggressive girls is examined, this similarity in behaviour patterns holds true for preadolescent girls.

Even though there was a tendency for relationally aggressive girls to hang out with at least one other relationally aggressive girl within the same cluster, many of the other members of the cluster were not extreme relational aggressors. These clusters had many nonaggressive members and these nonaggressive girls were not significantly higher in relational aggression than the nonaggressive girls of clusters comprised of all nonaggressive girls. Furthermore, there was not a significant difference between nonaggressive members of clusters that had relationally aggressive members and nonaggressive members of clusters that were comprised of only nonaggressive girls in how well they were liked. Thus, relationally aggressive girls often affiliate with at least one other relationally aggressive girl in clusters. However, the majority of the members of the cluster are nonaggressive and of mixed social status. Relationally aggressive girls do not tend to affiliate in clusters of highly rejected girls.

Cairns and Cairns (1991) state that, "Personal dispositions qualify individuals for entry into social groups, and one of the qualifying criteria for children and adolescents appears to be similarity with respect to aggressive, acting out behaviors. Once a person enters a group, reciprocal processes lead to further commonalties in activities, including deviant ones. There is a transmission of values and for some networks, a contagion of

social problems. The entire group may become at risk. To the extent that social networks are themselves correlated with each other, persons become increasingly constrained in choices, values, and behaviors from childhood through adolescence” (p. 273). While this may be true to a certain extent in relationally aggressive girls’ clusters in terms of behavioural similarity, in this study many members of these clusters were not similarly aggressive. Thus, Cairns and Cairns’ hypothesis is not fully supported by the results of the present study. Even though this is the case for overtly aggressive boys and adolescent girls, it does not appear that this is not clearly the case for relationally aggressive girls.

This outcome is puzzling and hard to explain. Members of overtly aggressive clusters have typically been rejected by the larger peer group and tend to find one another and form clusters. Affiliations among relationally aggressive girls may be caused by their exclusion from other, more acceptable groups. Support for this theory comes from the work of Bagwell et al. (2000) which found that overt aggression was the primary factor associated with being a central member of deviant peer clusters. However, this was not the case for the relationally aggressive clusters in this study. Many of the relationally aggressive clusters had nonaggressive members that were also popular or average in social status. Clearly, these clusters can not be deemed to be deviant in nature based on aggression and social status. Longitudinal research is necessary to determine if over time nonaggressive girls’ affiliations with relationally aggressive girls reinforces positive attitudes toward aggression and, eventually to generate occasions for delinquent and antisocial acts as has been found to be the case for individuals who hang around overtly aggressive children (Cairns & Cairns, 1991).

The finding that the social clusters which had at least one relationally aggressive member had higher mean group scores for relational aggression (not significantly higher though) does cause some concern if indeed nonaggressive girls become increasingly more relationally aggressive through association with relationally aggressive girls.

Frequent contact with others in close interconnected peer groups may make them a strong socializing power in the classroom (Kindermann, 1993). We also know that individuals who remain close friends over a long period of time do tend to become more similar to one another (Kandel, 1978). Longitudinal research is required that follows nonaggressive girls over time to determine if they do become more deviant through their association with relationally aggressive girls. On the other hand, it may be that there are other factors that account for relationally aggressive girls affiliating with one another in social clusters. Such factors identified in the literature include academic competence, athletic competence, motivation, attitudes, and physical appearance (Xie et al., 1999). It would be interesting to examine the extent to which nonaggressive members of clusters with relationally aggressive members have positive attitudes towards the use of relational aggression. In addition, it is important that future research identify the behaviours and attitudes that characterize leaders and followers within clusters that possess relationally aggressive girls.

It has been proposed in the literature that one of the goals of girls who use relational aggression is to maintain exclusivity in their friendship by keeping their friend from affiliating with other peers (Crick & Grotpeter, 1995). However, the finding in the present study that many of the relationally aggressive girls and the friend that they spend the most time with were both members of the same cluster along with other well accepted

peers leads one to question this hypothesis. One explanation for this finding is the fact that forms of victimization within middle childhood are more complex and sophisticated than that found in younger children (Crick et al., 2001). These researchers have found that during this age period, children are more covert in their behaviour, less confrontational with the intended target, and may use the interactions within the peer group more frequently to meet the object of relational victimization. Thus, it is possible that relationally aggressive girls and their friends may be members of the same cluster but may be using relational aggression either toward others in the cluster or toward other children outside of their social cluster. Such an example is exclusion of a peer from their social cluster (e.g, pretending not to see the target child or not inviting the target child to participate). Moreover, in a review of studies that examined cluster formation, Hallinan (1981) identified several processes that affect formation and position of members. Some clusters evolve around a close friendship of two individuals. These two friends are at the center of the cluster with their friends joining in for specific activities. Other clusters form around a central individual who becomes the leader and establishes the rules and expectations for the group. It would be of interest to examine these possibilities in future research by studying the internal workings of these clusters in order to shed more light on what is the nature of the role relationally aggressive girls have in social clusters.

Summary of Characteristics of Social Networks

Though not all of the hypotheses for social networks of relationally aggressive girls in the present research were confirmed, some interesting findings emerged. Specifically, relationally aggressive girls were as likely as nonaggressive girls to be members of social clusters and the majority of them were nuclear members in nuclear

clusters. Furthermore, many of the relationally aggressive girls hung out together with at least one other relationally aggressive girl in their social cluster. While the mean relational aggression score of the nonaggressive members of the clusters with relationally aggressive members was higher than those of clusters with only nonaggressive members, this difference was not significant. In many of the clusters with relationally aggressive members, the nonaggressive members were well accepted by the general peer group.

These findings suggest that the social affiliations of relationally aggressive girls within the larger social network may not be as problematic as expected, particularly when compared to those of overtly aggressive boys. However, it would be an unqualified leap to suggest that relationally aggressive behaviour does not impact on the lives of these girls to a significant degree, as there are other areas where relationally aggressive children and their victims suffer. Indeed, relationally aggressive children may be at risk for serious adjustment difficulties as they report significantly higher levels of loneliness, depression and isolation relative to their nonrelationally aggressive peers (Crick & Grotpeter, 1995).

Limitations of Research

The first major limitation of the present study was the incomplete design for male and female aggressors. The observed frequencies of the chi square test revealed that type of aggression was confounded by gender, thus limiting analyses to girls only. As well, when the frequency distributions were examined for rejection and nonrejection status of relationally aggressive girls, empty and small cells were found. The incomplete design for both aggression status and rejection status limited the number of analyses that were performed in the present study. For example, the number of rejected relationally

aggressive girls who belonged to social clusters ($n = 7$) was not large enough to compare statistically to determine whether the clusters they belonged to were comprised of lower status peers than were the clusters to which nonaggressive girls belonged.

It was felt that it was important to use an extreme groups design in order to identify discrete groups of aggressive and nonaggressive children even though this resulted in the loss of a large amount of data for some of the analyses. Not only is such a methodology consistent with the literature, but we were also most interested in what extreme groups look like in a normative sample.

A second limitation involves the small number of relationally aggressive girls' dyads whose quality of friendship was examined. A total of 646 potential subjects were solicited for their participation in this research and there was a very high overall participation rate of 77%. While 39 relationally aggressive girls were identified, two were absent during data collection. In addition, the friends that 23 of the 39 relationally aggressive girls chose to complete the friendship quality questionnaire about did not reciprocate that choice so they were not able to be matched. In our efforts to design a practical method of data collection, we decided to have the children answer the questions about the quality of their friendship with the child they spent the most time with rather than on the basis of their highest reciprocated friend. This method allowed all the data to be collected during one session. If the children had been asked to complete the questionnaire based on their highest reciprocated friendship, it would have required returning to the schools for a second visit after identifying the highest reciprocated best friend. However, had this been done, there would have been information about 28

relationally aggressive girls' dyads instead of 11 which would have substantially increased the power of the analyses.

In retrospect, one can see why researchers typically collect data on the quality of the friendships after determining reciprocated friendships as this potentially increases the number of dyads being examined. However, on the other hand, by using this method researchers are not necessarily examining the quality of friendship of the most preferred friend. Nonetheless, the small number of relationally aggressive girls included in the friendship quality analyses is a definite limitation in the present study. Consequently, caution should be exercised when interpreting these findings. Despite these shortcomings, given the paucity in the literature on the friendship quality of relationally aggressive girls, the results obtained in this study present a reasonable first step. Future studies should endeavour to expand upon and replicate these findings, employing larger samples of relationally aggressive children and using the methodology of Parker and Asher (1993) by identifying the best friend.

A cautionary note for future research involves the Friendship Quality Measure (Grotzinger & Crick, 1995) which was used to measure the friendship quality of children in this study. Several of the subscales had poor internal consistency indicating that children had difficulty reliably describing some features of their close friendships. However, while the alphas are low for some of the subscales, this may be partially due to the small number of items for each subscale (Furman, 1996). Another possible explanation for the poor internal consistency of some of the subscales (e.g., Relational Aggression Towards Friend) is that the children may have had difficulty answering some of the questions. For example, during data collection, several students asked how would

they know “My friend tells my secrets to other kids when mad at me”. In addition, the factor analyses of the different features of the friendships did not replicate the factors as theorized by Grottpeter and Crick (1996). In fact when one looks closely at the items on the first identified factor, they are all describing positive features of friendships. Berndt (1996) reviewed the different studies that assessed different dimensions of friendships and found that there were always two factors, one for positive features and one for negative features. In any case, it is not possible to recommend the use of the Friendship Quality Measure in future research due to its poor psychometric properties and the findings reported here with respect to friendship quality should be interpreted with caution. Future work is needed to develop a measure that assesses the quality of friendships of relationally aggressive children, in particular the use of relational aggression within friendships and towards others.

Another limitation of this study was that only one type of measure was used to assess the social behaviour status of the children in this study. The Children's Social Behaviour Scale-Teacher Form has been used in two previous investigations (Crick, 1996; Rys & Bear, 1997) and a version of it was used by Tomada and Schneider (1997) in which they had teachers nominate up to three students on each item. However, it has never been used as the sole instrument for classifying children into extreme groups of behaviour and has always been used in addition to peer nominations.

Some researchers tend to prefer peer reports when assessing behaviour as peers have inside knowledge about the peer group and may be privy to instances of aggression that are unobservable to other informants. In addition, peer nominations yield scores based on multiple individuals' observations and perceptions in contrast to single

observations by the classroom teacher. However, there are some problems with this method as it can be time consuming for the children to complete the forms, as well as for researchers to enter the data, and more importantly, an increasing number of school boards are hesitant to have children nominate other children who exhibit negative behaviours.

Teacher ratings offer some advantages over peer nominations. First, many relationally aggressive acts are quite subtle in nature and not easily visible to those who do not have inside information about the internal workings of the peer group. While peers definitely have access to this information, to be able to competently assess the presence of such behaviours, one needs to have access to information that goes beyond the immediate situation. Teachers may have this knowledge, in particular information about the relationship history of the aggressive child and their victims. Furthermore, teachers may have intimate knowledge about the friendships and peer relationships in the larger social network both within their class as well as other children from other classes whom they observe interacting in the hallways, on the schoolyard, and in the lunchroom. This allows them to compare the behaviour of the child being rated with the typical behaviour of the larger group of peers. In fact, teacher ratings of aggression in most studies have been found to be quite stable and to correlate quite highly with other sources of information such as peers (Elliot, Busse, & Gresham, 1993; Epkins, 1993; Ledingham & Younger, 1985). Indeed, almost identical percentages of relationally aggressive, overtly aggressive, relationally/overtly aggressive, and nonaggressive children were identified in the present study using the teacher rating measure as were identified by Crick & Grotpeter (1995) and Rys and Bear (1997) using the peer nomination measure

Even though past research has demonstrated that teacher and peer assessments of relational aggression are significantly related (Crick, 1996; Rys & Bear, 1997; Tomada & Schneider, 1997), there is still a degree of nonoverlap between teacher and peer assessments. It seems quite likely that teachers and peers have different access to relationally aggressive behaviours, as has been demonstrated for overt aggression (Ledingham & Younger, 1985). For example, peers would have first-hand experience with being targets of this behaviour whereas a teacher may hear about these behaviours from the child who is the recipient or from the parent of the child. If indeed there are differences between these two types of informants, then some of the lack of overlap in teacher and peers reports may reflect actual differences in observation rates, not reporting biases. If this is the case then it might be preferable to have a multi-method assessment used in future studies, i.e., peer nominations, teacher ratings, and possibly direct observations. Of course, this method would be relatively time consuming and as previously mentioned, some school boards are quite reticent to have peers act as informants (in particular the school board in which the data was collected) and thus, don't allow researchers to obtain peer reports of aggression.

Finally, a conceptual limitation exists concerning the social cognitive map procedure which was used to identify the peer structure within a larger social network in each grade. Using the method described, it was possible to identify an individual child's peer group affiliations without relying solely on self-reports. In fact, an advantage of this method is that it allows one to accurately describe the larger social network without the necessity of obtaining descriptions from every child. However, the SCM procedure is essentially a measure of the salience of the individuals and groups to which they belong.

It does not measure whether the individual or group is popular, liked or influential – it simply reflects how well known the individual or group is. Children or groups of children can be well known for either prosocial or aggressive reasons. It would have been interesting to have a measure of “leadership” ability included. One could speculate that the leaders of relationally aggressive clusters would be those individuals who use aggression effectively as has been speculated for the leaders of “bully” groups (Pellegrini, Bartini, & Brooks, 1999). In fact, Pellegrini et al. (1999) found that the leaders of bully groups appear to justify their behaviour cognitively by endorsing bullying in the form of positive attitudes toward bullying. It would be interesting to examine whether relationally aggressive girls have positive attitudes towards the use of relational aggression.

It was not the intent of this study to show that relational aggression was the determining factor for peer affiliations. In fact, previous research has identified other variables that may be related to peer affiliations such as motivation (Kindermann, 1993), overt aggression (Cairns et al., 1989), academic achievement, and demographic characteristics (Kupersmidt, Desrosier et al., 1995). This study provides descriptive information only about the nature of relational aggression within the social network. While social cluster membership may impact on the use of relational aggression within them, it is also possible that relationally aggressive girls do select peers who are similar to themselves with regard to aggression status and that their peer groups have an influence on heightening the amount of relational aggression these children exhibit. Further research is required to shed light on these possibilities.

Future Directions

The previously described findings demonstrate the importance of research on relationally aggressive children. In the future, it would be of interest to compare relationally aggressive girls and nonaggressive girls on the density (number of interconnections) of their social clusters. A dense friendship cluster would be one in which most individuals are friends with each other. It is possible that relationally aggressive girls belong to less dense social clusters that pull girls in different, and perhaps competing directions while nonaggressive girls belong to relatively connected, or dense social clusters which foster a sense of belonging and stronger feeling of security. On the other hand, it is possible that the opposite is true and that relationally aggressive girls belong to dense social clusters. It has been hypothesized that density could result in heightening of rivalries and jealous of cluster members (Parker et al., 1999).

The characteristics of a child's affiliations constitute an import social context for his or her development. These include such factors as behaviour, academic competency, values, attitudes, and beliefs. Thus, it is important that the aspects of friends and social cluster affiliations be identified that are thought to influence, or be influenced by, the developing child (Kindermann, 1996). It would be interesting to study these factors in more detail in clusters which have relationally aggressive members in order to gain a better understanding of what are the critical factors that influence the behaviours of the children within these clusters.

One goal for future research would be to employ longitudinal designs that assess whether extensive associations with relationally aggressive children or membership in clusters with relationally aggressive individuals over a period of time lead to the

reinforcement and maintenance of relationally aggressive behaviours. Research on overtly aggressive children and their social clusters has led researchers to express concern that association with aggressive or deviant peers may lead to the reinforcement of aggressive behaviour, and sustained use of aggressive acts. This study suggests there is some potential for this phenomenon since more than one relationally aggressive girl was often represented in a single cluster and behavioural similarity between friends was found to be a feature of relationally aggressive girls' friendships.

Finally, the social network of a peer group are constantly changing with social clusters changing in membership over a period as short as three weeks (Cairns et al., 1995). It would be of interest to determine whether there are differences between clusters that have relationally aggressive members and those that do not in the stability of their membership. Also of interest would be the aggression status of those individuals who are stable members of clusters that possess relationally aggressive individuals. Of particular interest would be the prevalence of victimization amongst these members and whether victimized members were the least stable members of these clusters.

Implications for Intervention

In regard to implications for intervention, researchers and clinicians are well aware of the importance of overt aggression and prosocial behaviour in children's social development. Indeed most of the popular social skills program focus mainly on the elimination of overtly aggressive behaviours and development of prosocial behaviours. Results of the present study provide important insights and information regarding ways to develop an intervention plan for dealing with relationally aggressive girls and their victims.

First of all, in order to intervene effectively, teachers need to be provided with facts about relational aggression so that they are aware of this form of aggression, better able to identify it, and trained how to respond effectively to reports of it or when they observe it. By being more responsive to relational aggressive acts, children may gain more confidence in seeking teachers' help when they are victims or when they witness its occurrence. While no studies have specifically examined the frequency with which teachers directly intervene in relational aggression acts, it has been reported that in a Toronto study on incidence of bullying in schools 19% of students reported that teachers "almost never intervened" (Atlas & Pepler, 1998).

Not only must the aggressors and the victims be identified so they can be provided with a training program, the peer affiliations of relationally aggressive girls must be identified to determine who the members of their clusters are and whether the aggressive behaviour of these girls is being supported by the peer group. Accordingly, the aggressors' peer affiliates should also be included in any intervention. The victims of relational aggression must be taught strategies in how to deal with friends who do not treat them with fairness, caring and respect. In addition, the friends of relationally aggressive girls must be provided with strategies to use if they encounter pressure from their friend to use relational aggression towards others.

Besides individual training programs, an effective intervention should also incorporate a program that includes all members of the larger peer group. Not only should they be provided with information about different forms of aggression and how these negatively impact upon themselves and those around them, but also peers need to be given strategies as to how to intervene when they witness relationally aggressive acts.

Findings from research conducted on bullying in Toronto schools found that 33% of the students reported that they did not intervene when they witnessed other students being bullied, but thought that they should do something (Pepler, Craig, Ziegler, & Charach, 1994). Any intervention should also expose children to a variety of activities to help foster positive peer affiliations within the larger social network. Exposure to this information would give students opportunities to deal with difficult social situations, solve social problems, and learn what qualities are most important in the friends they keep or in new friends they choose. (Committee for Children, 2001). The goal of such intervention would be to change peer group norms and behaviours (Craig & Pepler, 1999).

Conclusions

Together with recent research by Crick (Crick & Grotpeter, 1995; Grotpeter & Crick, 1996), and Rys and Bear (1997), the findings from the present research provide further evidence that relational aggression is a meaningful construct, and distinct from overt aggression. Furthermore, this form of aggression is significantly related to gender with girls being identified as more extremely relationally aggressive than boys. This study has contributed to the small body of literature on relationally aggressive children by examining dimensions of friendships beyond those that have been examined in the past, i.e., the behavioural and social status of friends and the characteristics of the social network of relationally aggressive girls. The results of this study further our understanding of the friendships of relationally aggressive girls and how they function within the larger social network.

Research using sociometric measures has attributed both overt and relationally aggressive behaviour to being identified as rejected or controversial in social status by the peer group, and unpopular with peers. This study provided important information that relationally aggressive girls are disliked by the general peer group, but they nevertheless have reciprocated friendships, belong to social clusters, and are typically nuclear members of these clusters. When concrete social relationships are identified, as in this study, the results show that relationally aggressive girls are not isolated from the peer social network. In fact, girls who are relationally aggressive have been shown to be effective in forming socially prominent interpersonal affiliations. These girls were among the most prominent members of highly prominent peer groups. Previous research examining social networks has demonstrated that aggression undermined social affiliations, however, the type of aggression being examined in all previous research was overt in nature. This study provides important information about relationally aggressive girls' social affiliations. Further analysis of clusters with relationally aggressive members at the level of the cluster would provide important information as to whether the members provide mutual support for aggressive behaviours resulting in the maintenance of these behaviours.

Results from this study supports the theory that group and dyadic friendships with peers represent distinct realms of experience and that both need to be included in a conceptualization of children's peer relationships. Dyadic friendships are important as they provide opportunities for experiences (e.g., intimacy, closeness, and reciprocity) that are not available in other types of peer relations (Bukowski & Hoza, 1989; Bagwell et al., 2000). Social clusters, on the other hand, play a critical role in influencing social

behaviour, attitudes, and academic adjustment (Adler & Adler, 1995; Harris, 1995; Kindermann, 1993). This study provides evidence that relationally aggressive girls' relationships are complex and multifaceted. While these findings may be compelling, future research is required to confirm and extend these results.

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Appendix A: Frequency Distributions of Consent Rate by Classroom

Classroom	Consent rate	Percentage
1	27/31	87%
2	21/26	81%
3	22/30	73%
4	22/27	81%
5	26/31	84%
6	22/29	76%
7	25/31	81%
8	17/22	77%
9	20/23	87%
10	17/20	85%
11	16/27	59%
12	24/28	86%
13	22/26	85%
14	22/26	85%
15	7/25	28%
16	21/25	84%
17	16/24	67%
18	16/26	62%
19	16/25	64%
20	25/29	86%
21	14/20	70%
22	20/22	91%
23	17/21	81%
24	10/19	53%
25	21/23	91%
26	15/28	54%

Appendix B**Ratings of Children's Social Behavior – Teacher Form
(Crick, 1996)**

<u>Subscales</u>	<u>Items</u>
Prosocial behaviour	1, 4, 8, 14
Overt aggression	3, 6, 9, 12
Relational aggression	2, 5, 7, 10, 11, 13, 15

Ratings of Children's Social Behaviour -- Teacher Form

Child's Name _____

Child's Sex: Male or Female?

Teacher's Name _____

Grade _____

	Never true				Almost always true
1. This child says supportive things to peers.	1	2	3	4	5
2. When this child is mad at a peer, he or she gets even by excluding the peer from his or her clique or play group.	1	2	3	4	5
3. This child hits, shoves or pushes peers.	1	2	3	4	5
4. This child tries to cheer up peers when they are sad or upset about something.	1	2	3	4	5
5. This child spreads rumors or gossips about some peers.	1	2	3	4	5
6. This child initiates or gets into physical fights with peers.	1	2	3	4	5
7. When angry at a peer, this child tries to get other children to stop playing with the peer or to stop liking the peer.	1	2	3	4	5
8. This child is helpful to peers.	1	2	3	4	5
9. This child threatens to hit or to beat up other children.	1	2	3	4	5
10. This child tries to get others to dislike certain peers by telling lies about the peers to others.	1	2	3	4	5
11. When mad at a peer, this child ignores the peer or stops talking to the peer.	1	2	3	4	5
12. This child tries to dominate or bully peers.	1	2	3	4	5
13. This child threatens to stop being a peer's friend in order to hurt the peer or to get what he or she wants from the peer.	1	2	3	4	5
14. This child is kind to peers.	1	2	3	4	5
15. This child tries to exclude certain peers from peer group activities.	1	2	3	4	5

Informed Consent Form for Teachers

The purpose of an informed consent is to insure that you understand the purpose of the study and nature of your involvement. The informed consent must provide sufficient information so that you have the opportunity to determine whether you wish to participate in the study.

Present study. The Dynamics of Aggressive and Nonaggressive Children's Friendships and Social Networks

Research personnel: The following people are involved in this research project and may be contacted at the following numbers: Linda Spence (Principal Researcher, 723-2669); Dr. Tina Daniels (Faculty Sponsor, 520-2600, ext. 2686). Should you have any ethical concerns about this study then please contact Dr. M. Sénéchal (Chair, Dept. of Psychology Ethics Committee, 520-2600, ext. 1155). Should you have other concerns about this study then please contact Dr. K. Matheson (Chair, Dept. of Psychology, 520-2600, ext. 2648).

Duration and locale. The time required for you to complete the rating scales depends on the number of children in your classroom who are given permission by their parents to participate. It is anticipated that it will take 30-40 minutes to complete the rating scales for an average class of 25 participating students. These scales can be completed at your convenience.

Purpose: This study will examine the relation between preadolescent children's behavioural styles and their affiliations with peers. Specifically we wish to examine the dynamics of relationally aggressive and nonaggressive children's friendships and social clusters in the peer social networks of fourth- through sixth-grade classrooms to determine whether children who are highly aggressive (relationally, overtly, or relationally/overtly) tend to associate with each other and what social position they hold within the clusters in the larger social network. This study is intended as a beginning step toward a broader description and understanding of relationally aggressive children's social relationships.

Task requirements: Teachers will be asked to complete a short 15 item rating scale of children's social behaviour for those children who have been given permission to participate. A gift certificate to either Chapter's or Scholars Choice (value \$20.00) will be offered as a token of appreciation of their time.

Potential risk/discomfort. There are no potential physical or psychological risks in this study.

Anonymity/confidentiality: The data collected in this study are confidential. All data are coded such that your name is not associated with the data. In addition, the coded data are made available only to the researchers associated with this project.

Right to withdraw: You have the right to withdraw from the study at any time.

I have read the above description of the Dynamics of Aggressive and Nonaggressive Children's Friendships and Social Networks and understand the conditions of my participation. My signature indicates that I agree to participate in the study.

Participant's Name: _____ Participant's Signature: _____

Date: _____

Appendix C

Friendship Nomination Measure (Parker & Asher, 1993)

Friendships

We would like to know who your close friends are. Please write down the first and last names of your best friends **in your grade** (at this school):

First Best Friend:

first name last name

Second Best Friend:

first name last name

Next Best Friend:

first name last name

1. List up to three kids who you especially like to spend time with **from your class**.

2. List up to three kids who you least like to spend time with **from your class**.

Appendix D
Item Assignments for the Friendship Qualities Measure

<u>Subscales</u>	<u>Items</u>
Validation and Caring	8, 22, 39
Conflict I	9, 23, 38
Conflict II	14, 28, 42
Companionship and Recreation	13, 27, 43
Help and Guidance	1, 15, 30
Intimate Exchange I (Subject Intimacy)	4, 18, 33
Intimate Exchange II (Friend Intimacy)	7, 21, 37
Conflict Resolution	3, 17, 35
Relational Aggression Towards Friends	2, 16, 29, 40
Overt Aggression Towards Friends	6, 20, 31
Relational Aggression Towards Others	10, 24, 32
Overt Aggression Towards Others	11, 25, 36
Subject Desire for Exclusivity	5, 19, 41
Friend Desire for Exclusivity	12, 26, 34
Friendship Satisfaction	44, 45

Instructions to Students for Friendship Quality Measure

Now I am going to read you some sentences about friendships and have you answer these questions about your friendship with this person. It is important that you answer these questions about the way your friendship is now and not how you want it to be.

Some of the sentences might be always true for your friendship while other sentences might not at all be true for your friendship. All you have to do is after I read the sentence put an "X" in the box that tells how true each sentence is about your friendship. There are no right or wrong answers, just answer each sentence honestly.

We will not tell anyone about what you have said, not your friend, your teacher, or the school. If you want to, you can discuss your answers with your parents.

THINGS I DO WITH MY FRIEND

We would like to ask you some questions about your friend that you spend the most time with so that we can find out what your friendship is like. First, write down the **first name and last initial of the friend in your grade at your school** that you spend the most time with.

The friend that I spend the most time with is _____.

Please put an "X" in the box that tells how true each sentence is about your friendship.

Examples:

A. I like to play soccer with my friend.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

B. My friend and I both like to clean our rooms.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

1. My friend gives me advice with figuring things out.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

2. My friend ignores me when he/she is mad at me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

3. It is easy to make up quickly with my friend if we have a fight.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

4. I can tell my friend about my problems.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

5. I feel jealous if I see my friend playing with another kid.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

6. My friend hits and kicks me when he/she is mad at me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

7. My friend can tell me his/her secrets.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

8. My friend makes me feel important and special.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

9. I get mad at my friend a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

10. When my friend and I don't like someone, we won't let them play with us.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

11. My friend and I threaten to beat others up if they don't do what we tell them to do.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

12. My friend would rather play alone with me, and not with other kids.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

13. My friend does fun things with me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

14. My friend gets mad at me a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

15. My friend shares things (like books or Nintendo games) with me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

16. My friend tells my secrets to other kids when he/she is mad at me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

17. It is easy to get over arguments with my friend.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

18. I can tell my friend my secrets.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

19. It's OK with me if my friend plays with other kids when I am busy.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

20. My friend says he/she will beat me up unless I do what he/she says.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

21. My friend can talk with me about the things that make him/her sad.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

22. My friend tells me I am good at things.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

23. I disagree with my friend a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

24. When my friend and I are mad at someone, we ignore them or don't talk to them.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

25. My friend and I hit and kick others we are mad at.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

26. My friend gets jealous if he/she sees me playing with another kid.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

27. My friend plays with me at recess.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

28. My friend gets annoyed with me a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

29. My friend tells me he/she won't like me anymore unless I do what he/she says.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

30. My friend does special favors for me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

31. My friend pushes and shoves me when he/she is mad at me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

32. When one of us hears a rumor about someone we don't like, we tell each other and pass it on.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

33. I can talk with my friend about the things that make me sad.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

34. It's OK with my friend if I play with other kids when he/she is busy.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
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35. It is easy to talk with my friend about how to get over being mad at each other.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

36. My friend and I push and shove others when we are mad at them.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

37. My friend can tell me about his/her problems.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

38. My friend annoys me a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

39. My friend says he/she's sorry if he/she hurt my feelings.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

40. My friend won't let me play with him/her and his/her other friends when he/she is mad at me.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

41. I would rather play alone with my friend, and not other kids, too.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

42. My friend disagrees with me a lot.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

43. My friend picks me as a partner for things.

Not At All True	Hardly Ever True	Sometimes True	Almost Always True	Always True
--------------------	------------------	----------------	-----------------------	----------------

44. How is this friendship going?

It's Going Really Badly	It's Going Kind of Badly	It's Going OK	It's Going Pretty Well	It's Going Really Well
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45. How happy are you with this friendship?

Very Unhappy	A Little Unhappy	Not Really Happy or Unhappy	Kind of Happy	Very Happy
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Appendix E - Social Cognitive Map Procedure
Instructions to Students for Social Cognitive Map Procedure

We would like to know more about who hangs around with each other in your grade.

On your next two sheets of paper, please write down the names of all the people from your class or grade who hang around together. Some kids may hang out with more than one group. If so, put their names down in all groups they hang around with. You should write kids' first names only, unless there are two kids with the same first name, then you should also write the first initial of the kid's last name.

Make sure that you include yourself in any of the groups that you hang around with.

(Note: Children are provided with enough lines to write down 8 groups. They don't have to complete the 8 groups if they can only think of 3 or 4. If they have more than 8 groups, have them turn the paper over and continue listing groups of kids on the back.)

Write down the names of all the people from your class or grade who hang around together. Some kids may hang out with more than one group. If so, put their names down in all groups they hang around with. You should write kids' first names only, unless there are two kids with the same first name, then you should also write the first initial of the kid's last name.

Make sure that you include yourself in any of the groups that you hang around with.

Group A

Group B

Group C

Group D

Group E

Group F

Group G

Group H

Are there any people in your class or grade who don't hang around with a particular group? Please list their names below.

Appendix F: Parental Consent Letter and Consent Form

Dear Parents/Guardians,

As you know, recently there have been several instances in Canadian schools where serious bullying and aggression have led to tragic consequences. As individuals concerned about children and youth, we find ourselves in the position of not really understanding how social relationships at school and in class develop and how such tragic consequences may occur. We are writing to ask your help by allowing your child to participate in a study what will increase our understanding of how children use aggression within their friendships and how the peer group may support or condone such behaviours. We are interested not only in the more obvious form of bullying and aggression, such as hitting and name calling, but also in more subtle but equally hurtful acts such as exclusion from the group or threatening to reveal to others' personal information.

This study will take place at the school your child attends during the month of May 2001. Teachers will be asked to complete a rating scale of children's social behaviour (e.g., this child is kind to peers; this child tries to dominate or bully peers). Children will be asked to complete a questionnaire identifying who their friends are, and who they like to play with. They will answer questions that examine the quality of the friendship of the person who they spend the most time with at school (e.g., my friend plays with me at recess; my friend tells secrets to other kids when he/she is mad at me). Finally, the children will be asked to list all the groups of children in their grade who associate with one another. The administration of these questionnaires will take at the most forty-five minutes of the children's class time. Scheduling of the administration of these questionnaires will be at the teacher's convenience to minimize interference with daily class routine.

This project has been approved by the Carleton University Ethics Committee, the Ottawa-Carleton District School Board, and the principal of your child's school. Study results will be reported in ways that ensure complete confidentiality and anonymity of individual participants, and will be reviewed only by the researchers. No school will be identified by name and results will not appear in any school records. For interested parents, general group results of the study will be made available once the data has been analyzed.

Participation in this study is completely voluntary and your child may choose to not answer any question as well as to withdraw at any time. Additionally, only students with written permission will be allowed to participate. Children will be encouraged to discuss any concerns with either their parents or teacher in addition to being provided an opportunity to talk with the school guidance counsellor or vice-principal. We will provide parents and teachers with a list of external resources and books that deal with bullying and aggression. Furthermore, should parents or teachers desire additional support or information an in-service session or material will be offered upon their request. We would be grateful for your cooperation. However, whether or not you wish

to have your child participate in this study, please complete the attached form and have your child return it by next week as we wish to be sure that you received this request. If you have any questions, please feel free to contact us at the number listed below. Should you have further concerns with regard to the ethics, please feel free to contact Dr. Monique Sénéchal, Chair, Department of Psychology Ethics Committee, 520-2600, ext. 1155). If you have other concerns please contact Kim Matheson, Chair, Psychology Department, 520-2600, ext. 2648. Thank you for your assistance.

Sincerely,

Linda Spence, M.A.
Ph.D. Candidate
Psychology Dept.
Carleton University
(723-2669)

Tina Daniels, Ph.D.
Assistant Professor
Psychology Dept.
Carleton University
(520-2600, ext. 2686)

CONSENT FORM

The information collected for this project is confidential and protected under the Municipal Freedom of Information and Protection of Privacy Act, 1989

I have read and understand the request for my son/daughter to participate in the study of the dynamics of children's peer relationships. I have discussed it with my son/daughter and:

_____ I give permission for my child to participate.

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

Date: _____

Name of Child: _____ Age: _____
(please print)

Name of Parent or Guardian:

(please print)

Signature of Parent/Guardian: _____

**Please have your child return the signed consent form
to school by next week. Thank you.**

Appendix G - Oral Debriefing for Children

I would like to thank you very much for helping us today. We know that some children get along really well, but that sometimes kids argue or are mean to other kids. What we are trying to find out is which children spend time together and how they get along with their close friends and other friends in their grade. If we can find out, then maybe we can find a way to help kids to get along better and be nicer to each other. The answers that you have given us will help us to do this. So, we want to thank you very much for sharing your thoughts and feelings with us today. The ideas that you have shared will be used to help other children in the future. I would like to remind you that we will not tell anyone about what you have said about them. Likewise, we are asking you to not discuss your responses with other children.

Filling out these surveys may have raised some concerns. Do you have any questions or is there anything anyone would like to talk about? (If children raise their hands, then add the caution that they are not to mention anyone's name). If you would like to talk about something we discussed today you can talk either to your parents or your teacher. They have also been given a list of other people who may be helpful in answering some of your questions or concerns. Also, if you would like to talk to the school guidance counsellor in private, you can fill out one of these forms (show form) that will be left on your teacher's desk (or place agreed upon by teacher). Just return it to your teacher within the next couple of days and then arrangements will be made.

Self-Referral Form:

I would like to talk to the school guidance counsellor about some of the things we were asked questions about.

Name: _____

Appendix H - Debriefing Letter for Parents

Dear Parents/Guardians,

We would like to take this opportunity to thank you for permitting your child to participate in this study of children's social networks. While a good deal is known about the positive aspects of children's friendships, little is known about the organization of and support provided by friends and how conflict is handled within the social network.

We anticipate that the information gained from this study will provide researchers with a better understanding of preadolescents' friendships and affiliations within the larger social network (e.g., how friends support one another, how conflict is minimized).

All of the individual children's responses will be kept confidential but, if you have any further questions about this study, please feel free to contact us at the numbers listed below. There was an opportunity at the end of the session for children to ask any questions. Children have also been provided with the opportunity to discuss any specific concerns with the school guidance counsellor. Furthermore, they have been encouraged to discuss any concerns with their parents and/or teacher. Attached you will find a list of external resources that deal with bullying and aggression. Should parents or teachers desire additional support or information an in-service session or material will be offered upon request. Should you have any further concerns regarding ethics, you may contact Dr. Monique Sénéchal (Chair, Department of Psychology Ethics Committee, 613-520-2600, ext. 1155) or Dr. Kim Matheson (Chair of the Department of Psychology, 613, 520-2600 ext. 2648).

Thank you once again for your participation.

Sincerely,

Linda Spence, M.A.
Ph.D. Candidate
Psychology Dept.
Carleton University

Tina Daniels, Ph.D.
Assistant Professor
Psychology Dept.
Carleton University
520-2600, ext. 2686

List of Agencies/Resources

- Community Resource Centre of Goulbourn, Kanata and West Carleton, 591-3686
- Nepean Resource Centre, 596-5626
- Pinecrest-Queensway Health and Community Services, 820-2001
- Youth Services Bureau of Ottawa-Carleton, 729-1000
- Kids Help Phone – Crisis (800) 668-6868

Books/Articles for Adults

Paul, Henry A. *When Kids Are Mad, Not Bad: A Guide to Recognizing and Handling Your Child's Anger*. Berkley Publishing Group, 1999. Pointing out that anger may underly many behavior problems of children, shows parents how to detect hidden anger.

Kreidler, William J. "When Anger Rears It's Ugly Head." *Instructor Magazine*, April 1996, p.24. Anger-management concepts for helping kids who heat up with anger cool down.

Marano, Hara Estroff. "Big, Bad, Bully." *Psychology Today*. Sept. 1995, p. 50. The psychology behind bullying and what children and parents can do to handle bullies or avoid bullying behaviour.

Videos for Teachers

Friendship: The Good Times ... The Bad Times - 22 minutes. Friendship takes on an increasingly important intensity and significance during the growing-up years of puberty. Program helps students understand that changes in friendship are common at this time, and that when a friendship dissolves, the best thing to do is to find new friends who share similar values and interests. Vignettes and open-ended questions stimulate class discussion about loyalty and responsibility in friendship.

Real People - Cliques: Who's In? Who's Out? - 24 minute video, teacher's guide. Using true-to-life scenarios, program explores the nature of cliques, focusing on the kinds of group dynamics that cause heartache and anxiety as well as on friendship groups.

Books for Children

Cole, Joanna. *Bully Trouble*. New York: Random House, 1989.

Carlson, Nancy. *Loudmouth George and the Sixth Grade Bully*. New York: Puffin Books, 1983.

Fitzhugh, Louise. *Harriet the Spy*. New York: HarperCollins. Harriet faces conflicts with her friends when they discover what she wrote about them in her notebook.

Appendix I – Sociograms of Relationally Aggressive Girls' Clusters

Cluster #6 – 4 Members – Nuclear Status Cluster

Cluster #12 – 3 Members – Nuclear Status Cluster

Cluster #17 – 5 Members – Nuclear Status Cluster

Cluster #25 – 3 Members – Secondary Status Cluster

Cluster #27 – 4 Members – Nuclear Status Cluster

Cluster #38 – 9 Members – Secondary Status Cluster

Cluster #45 – 8 Members – Nuclear Status Cluster

Cluster #48 – 5 Members – Nuclear Status Cluster

Cluster #49 – 7 Members – Secondary Status Cluster

Cluster #50 - 5 Members – Secondary Status Cluster

Cluster #51 - 4 Members – Secondary Status Cluster

Cluster #54 – 3 Members – Secondary Status Cluster

Cluster #60 – 3 Members – Peripheral Status Cluster

Cluster #63– 9 Members – Nuclear Status Cluster

Cluster #72 – 13 Members – Nuclear Status Cluster

Cluster # 77 – 10 Members – Nuclear Status Cluster

Cluster #82 – 7 Members – Peripheral Status Cluster

Cluster # 96- 12 Members – Nuclear Status Cluster

Cluster # 99 – 9 Members – Secondary Status Cluster

Cluster # 97 – 7 Members – Secondary Status Cluster

Clique 6– 4 Members – Nuclear Status

Subject 170 RA Average Secondary OSN-Medium Class 8	Subject205 NAG Average Nuclear OSN-High Class 9	Subject185 NAG Average Nuclear OSN-High Class 8	Subject176 NAG Unclassified Secondary OSN-Medium Class 8
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Clique 12– 3 Members – Nuclear Status

Subject 275 RA Rejected Nuclear OSN-High Class 13	Subject 272 RA Unclassified Nuclear OSN-High Class 13	Subject269NAG Average Nuclear OSN-High Class 13
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