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Relational and Overt Aggression in Youth: Same Aggressive Tendency, Different Manifestations?

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RELATIONAL AND OVERT AGGRESSION IN YOUTH:
SAME AGGRESSIVE TENDENCY, DIFFERENT MANIFESTATIONS?

A Thesis

Submitted to the Graduate Faculty of the
University of New Orleans
in partial fulfillment of the
requirements for the degree of

Master of Science
in
The Department of Psychology

by

Monica A. Marsee

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Human Subjects Approval Form

Abstract

The goal of this research was to determine whether relational aggression in girls was similar to overt aggression in boys in terms of social-psychological adjustment. A total of 199 fifth through ninth grade children (86 boys, 113 girls) participated in this study. Relational and overt aggression scores were used to form groups of children who varied on the two types of aggression. Results indicated that overtly aggressive boys did not differ from relationally aggressive girls in terms of depression, anxiety, psychopathy, sensation seeking, ADHD, delinquency, and drug use. Further, boys in the aggressive groups scored consistently higher than boys in the nonaggressive groups on all indices of maladjustment. The results of the current study provide support for the hypothesis that relational aggression in girls is not different from overt aggression in boys in terms of social-psychological adjustment problems.

Overview

Aggression has been generally defined by past researchers as behaviors that are intended to hurt or harm others (e.g., Berkowitz, 1993). These harmful behaviors can take on different forms and can be manifested physically, verbally, and/or socially. An important issue in previous research on aggression has been how aggression in males differs from aggression in females. Past research has suggested that males are more aggressive than females across the lifespan (see Block, 1983; Maccoby & Jacklin, 1980, for reviews). However, more recent research has challenged this assertion, claiming that females do engage in significant aggressive behavior, but that it is manifested differently than the aggressive behavior of males (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992a; Crick, Casas, & Mosher, 1997; Crick & Grotpeter, 1995; Galen & Underwood, 1997; Lagerspetz, Bjorkqvist, & Peltonen, 1988). Specifically, these authors assert that females engage in a type of aggression that is more indirect or covert than the type of aggression in which males engage, consisting of behaviors such as gossiping about others, excluding target children from a group, spreading rumors, or telling others not to be friends with a target child. Crick and colleagues label this type of aggression *relational aggression* (also called *indirect* or *social aggression*) and distinguish it from *overt aggression*, which consists of behaviors such as hitting, pushing, and bullying, and is said to be more characteristic of boys (Crick and Grotpeter, 1995; Crick, 1996). Crick (1996) found support for this distinction based on peer nomination, as well as on a factor analysis of a newly devised teacher measure of aggression in children. Thus, based on past research, it appears that two forms of aggression exist in children, and that these two forms differ by gender.

While previous research suggests that both boys and girls exhibit distinct types of aggressive behavior (i.e., relational and overt), it is not clear whether these two types are basically the same aggressive tendency manifested differently. In other words, it is unclear as to whether “female” aggression and “male” aggression are similar constructs and are simply gender-specific manifestations of the same underlying aggressive trait. If relational and overt aggression *are* different manifestations of an underlying aggressive tendency, it would be expected that overtly aggressive boys and relationally aggressive girls would share similar correlates and outcomes. Thus, a specific purpose of the current investigation was to determine whether aggression in girls was similar to aggression in boys in terms of social-psychological adjustment (e.g., internalizing and externalizing disorders, delinquency, and psychopathy). In the following sections, subtypes of aggression in boys and girls will be reviewed, followed by a discussion of aggression and its relation to social-psychological adjustment.

Introduction

Female Aggression

Over the years, many researchers have studied aggression in girls and women. This research has led to a growing body of literature on different subtypes of aggression said to be more characteristic of females than of males. Specifically, researchers have proposed three main subtypes of aggression in girls: (1) indirect aggression, (2) relational aggression, and (3) social aggression. These three types of aggression are highly similar and have been consistently shown to occur more often in female than in males (Crick & Grotpeter, 1995; Galen & Underwood, 1997; Lagerspetz et al., 1988). The following is an overview of these subtypes of female aggression.

Indirect aggression

Definitions of indirect aggression have changed dramatically over the years. In very early research on hostility and aggression conducted by Buss and Durkee (1957), indirect aggression referred to both “roundabout” behaviors such as gossiping or practical jokes, and “undirected” aggressive behaviors such as throwing things, slamming doors, breaking things, and banging on tables. Roundabout aggression was said to be indirect in that “the hated person is not attacked directly but by devious means” (p. 343), while undirected aggression was said to be indirect in that it was “a discharge of negative affect against no one in particular” (p.343). Thus, according to these authors, indirect aggression could be defined as having a target that was not directly confronted, so that the attacker remained unknown, or as having no target at all. Buss (1961) further specified his definition of indirect aggression later on by adding that “indirect aggression

[could] be verbal (spreading nasty gossip) or physical (a man sets fire to his neighbor's home)" (p.8). Therefore, Buss's early definitions of indirect aggression encompassed many behaviors, ranging from covert social manipulation strategies (i.e., spreading gossip about people one does not like) to overt physical behavior with or without a target (i.e., slamming a door or destroying an enemy's property).

Over ten years later, with the publication of one of the first empirical studies addressing the concept of indirect aggression, a new, more specific definition of indirect aggression was proposed. Feshbach (1969) proposed that young boys and girls may use different forms of aggressive responses (i.e., direct and/or indirect) in group situations where a new child is introduced to an already functioning group. She observed a group of first grade boys and girls and found that girls used more indirect aggression than boys, which she defined as the active rejection of the other child through "ignoring, avoiding, refusals, and excluding" (p.252). These behaviors were coded by hidden observers in an experimental playroom. *Ignoring* was coded if the new child approached the group members and they did not pay attention to him or her. *Avoiding* was coded if the group member moved away from the child initiating contact. *Refusals* were coded if the new child requested help, information, or wanted to play and the group member actively denied his or her requests. Finally, *Excluding* was coded if the group members asserted that the new child could not be a member of the group. Direct aggression was also coded into one of three categories: (a) Physical Aggression (i.e., hitting, kicking), (b) Verbal Aggression (i.e., threats), and (c) Expressive Aggression (i.e., sneering, threatening gestures). While girls were found to have higher indirect aggression scores than boys, there were no significant gender differences in direct aggression scores. Thus, this new definition of indirect

aggression seemed to be useful in distinguishing the aggressive behavior of girls from that of boys.

Ten years later, another study examining gender differences in direct and indirect aggression among children was published. Brodzinsky, Messer, and Tew (1979) examined gender differences in children's expression of aggression and in peer and teacher ratings of aggression. One hundred twenty-seven fifth-graders were given a series of pictures that varied according to the extent to which they suggested aggression. They were asked to make up a story about each scene, and then coded on the presence or absence of various aggressive acts in their stories. Peer and teacher ratings of aggression were measured with an aggression rating scale that consisted of items in three categories (a) direct physical aggression (i.e., hitting, kicking, throwing things), (b) direct verbal aggression (i.e., name calling, threatening, or swearing at others), and (c) indirect aggression (i.e., taking or destroying things that belong to others or tattling on others). It was found that boys were rated by peers and teachers to be more physically and verbally aggressive than girls, and that they told stories with more physical aggression than girls did. Conversely, girls told stories with more indirect aggression than boys did. However, no significant gender differences were found between boys and girls for peer or teacher ratings of indirect aggression. This finding may be due to the fact that indirect aggression in this study was defined as a kind of *overt* aggression, consisting of physical behavior such as destroying property and verbal behavior such as tattling. In contrast to Feshbach's (1969) definition, which is more social in nature, Brodzinsky et al.'s definition does not appear to encompass social manipulation qualities at all. However, his definition does share some qualities with Buss's (1961) early definitions of indirect aggression, which were very broad and did not specify gender differences.

A more socially oriented definition of indirect aggression was proposed several years later by a team of researchers studying gender differences in aggression in groups of children in Finland. Lagerspetz et al. (1988) used peer ratings, self-ratings, and interviews to assess what types of behaviors children engaged in when they were angry, as well as the frequency of their anger towards other children. They found that in their sample of 11-to 12-year old girls and boys, girls preferred to use more indirect means of aggression when angry, while boys tended to employ more direct means. These authors defined indirect aggression as “circumventory behavior that exploits social relations among peers in order to harm the person at whom the anger is directed” (p. 409). A factor analysis yielded an “indirect means” factor, which included social manipulation strategies such as telling lies behind someone’s back, being friends with another child as a means of revenge, and telling other children not to be friends with the target child. Thus, in this study, indirect aggression was defined as having a specific focus on the social aspect of children’s relationships, and in this way, the definition differed from those before it. It did not include any type of physical actions such as throwing things, destroying property, or hitting tables. Further, it did not include direct verbal behaviors such as actively refusing to help another child or give another child information as in Feshbach’s (1969) *Refusals*, or actively telling another child that he or she could not be a member of a group as in Feshbach’s *Excluding*.

Many recent studies have expanded on Lagerspetz et al’s (1988) work on gender differences in aggression using the same socially oriented definition of indirect aggression. For example, Bjorkqvist, Lagerspetz, and Kaukiainen (1992a) used the same definition and method of measurement in their comparison of an 8-year-old cohort and a 15-year-old cohort to Lagerspetz et al.’s 11-year-old cohort. They found that girls of the two older cohorts used indirect aggression more frequently, while the boys of all age groups used more direct

aggression. They found that indirect aggression was not fully developed in the 8-year-old girls, suggesting that the usage of indirect means required a level of social maturation not yet reached by the younger girls. Indeed, it has been shown that indirect aggression requires a higher level of social intelligence than direct forms of aggression (Kaukiainen et al., 1999). The results from this study provide further evidence that gender differences exist in the utilization of direct and indirect means of aggression, specifically when the definition of indirect aggression is social in nature and involves strategies that undermine the interpersonal relationships of girls.

Following from their previous research on gender differences in aggression in children, Bjorkqvist and his colleagues developed a rating scale to facilitate the measurement of both direct and indirect aggressive behaviors among children. The Direct and Indirect Aggression Scales (DIAS; Bjorkqvist, Lagerspetz, & Osterman, 1992b) can be used both for peer-report and self-report of physical, verbal, and indirect aggression (as defined previously by Lagerspetz et al., 1988). Several recent studies using the DIAS have found gender differences in direct and indirect aggression in children (e.g., Osterman et al., 1998; Salmivalli, Kaukiainen, & Lagerspetz, 2000). Osterman et al. conducted a cross-cultural investigation of aggressive behavior in children of three age groups (8, 11, and 15) and found that indirect aggression was used more frequently by girls than boys in all age groups in four different countries (Finland, Israel, Italy, and Poland). Salmivalli et al. used the DIAS in an adolescent sample (i.e., 15-16 years old) and they found that girls used significantly more indirect aggression than boys, while boys used significantly more physical and verbal aggression than girls. Thus, it appears that the DIAS is a useful tool for determining gender-specific aggressive behavior across cultures and in a wide range of age groups.

While it appears that the socially oriented definition of indirect aggression is useful for distinguishing between aggressive girls and boys, some studies using this type of definition have failed to find significant gender differences. For example, Green, Richardson, and Lago (1996) used a self-report measure based on the DIAS to assess aggressive behavior in college students (mean age = 21) and found that males reported more direct aggression than females, but that males and females did not differ in their reports of indirect aggression. Richardson and Green (1999) found similar results in another study with college students. However, they measured indirect aggression in this study differently. While they too included items based on the DIAS in their self-report measure (i.e., “made up stories to get them in trouble, told others not to associate with them”), they also included other items that were not socially oriented (i.e., “took something that belonged to them, destroyed or damaged something of theirs”). The inclusion of these items slightly changes the definition of indirect aggression in this study, and therefore may account for the failure to find gender differences. However, a more likely explanation for this lack of findings is related to the age of the sample. Both of these studies measured aggression in a much older sample of individuals (i.e., college-aged). Previous findings of gender differences in indirect aggression were found in samples ranging from 8 to 15 years of age (e.g., Bjorkqvist et al., 1992a; Lagerspetz et al., 1988; Osterman et al., 1998; Salmivalli et al., 2000).

Relational aggression

With interest in the study of female aggression rapidly increasing, researchers began to systematically examine the indirect aggressive strategies of girls. In 1995, Crick and Grotpeter introduced the construct of relational aggression, which they broadly defined as the intent to harm another through damaging his or her friendships or status within the peer group. Crick and Grotpeter hypothesized that girls are likely to focus on social issues in their interactions with

their peers, and therefore, when attempting to harm others, they are more likely to use social manipulation strategies (similar to those researched by Lagerspetz et al., 1988) such as excluding a child from a certain group as a means of revenge, withdrawing friendship, or spreading rumors about a child so that peers will reject him or her. Crick and Grotpeter used a peer nomination method to assess relational aggression as well as overt aggression (i.e., hitting, pushing, fighting) in a group of 9- to 12-year old children, and they found that girls were significantly more relationally aggressive than boys. They also found that relational aggression was significantly related to social-psychological adjustment problems such as peer rejection, loneliness, depression, and isolation. The results from this study provided the first evidence for the validity of the construct of relational aggression, as well as its distinctiveness from overt aggression.

Further studies provided even more support for the distinction between relational and overt aggression, and more specifically, for the hypothesis that girls use relational aggression more often than boys do. Crick (1995) found that relationally aggressive children exhibited a social information-processing pattern similar to that of overtly aggressive children (see Crick & Dodge, 1994 for a review); however, the relationally aggressive children exhibited this pattern only when confronted with a relationally provocative situation (e.g., not being invited to a party that everyone else is invited to), but not when confronted with an overtly provocative situation (e.g., being pushed or having possessions purposely destroyed). Specifically, relationally aggressive children exhibited a hostile attributional bias, which is the tendency to interpret ambiguous acts as intentionally hostile, when confronted with ambiguous social situations involving exclusion and/or manipulation, but not when confronted with ambiguous instances of a physical or overt nature. Further, girls reported significantly higher levels of distress in relationally provocative situations than boys did. These results provide support for Crick and

Grottpeter's (1995) hypothesis that relationship and friendship issues are more salient to girls than to boys by demonstrating that girls find social exclusion and manipulation to be much more distressing than boys do.

Further gender differences in relational aggression were found by Crick, Bigbee, and Howes (1996) in two studies designed to assess children's beliefs about relationally aggressive behaviors. Past research has suggested that aggression is defined by two general components (1) feelings of anger and (2) intent to harm (Berkowitz, 1993). The primary purpose of Study 1 was to determine whether or not children associate anger with relationally manipulative behaviors. In Study 1, they asked 9- to 12-year old children ($n = 459$) to respond to the question "What do most boys [or girls] do when they are mad at someone?" Responses were coded for physical aggression, verbal threats and insults, nonverbal aggression, relational aggression, telling, and avoidance. It was found that both boys and girls associated relational aggression with anger, indicating that children do indeed view relationally manipulative behaviors as "aggression." Additionally, it was shown that relationally aggressive behaviors were viewed as normative for girls, while physical aggression was viewed as normative for boys. In Study 2, they extended the results of Study 1 by evaluating whether or not children associate relationally manipulative acts with an intent to harm, the second defining feature of aggression. Additionally, they sought to evaluate whether or not children's normative beliefs about aggression were influenced by the gender of the target or victim of the aggression. Further, they sought to compare the normative beliefs of children high in relational aggression and/or overt aggression to those of nonaggressive children. They hypothesized that the specific type of aggression that children engaged in would influence their beliefs about how often others would engage in that same type of behavior. In other words, they proposed that relationally aggressive children would view relational aggression

as more normative than overtly or nonaggressive children would, and that overtly aggressive children would view overt aggression as more normative than relationally or nonaggressive children would. To test these hypotheses, they assessed aggressive behavior and children's normative beliefs in a group of 9- to 11-year olds ($n = 162$), none of whom had participated in Study 1. To assess aggressive behavior, they administered a peer-assessment instrument in which children were asked to nominate classmates who fit behavioral descriptors on three subscales: overt aggression, relational aggression, and prosocial behavior. Nominations for each child were then summed and standardized. To assess the children's normative beliefs regarding behaviors meant to be harmful, they asked each child four open-ended questions: (1) "What do most boys do when they want to be mean to another boy?" (2) "What do most boys do when they want to be mean to a girl?" (3) "What do most girls do when they want to be mean to another girl?" and (4) "What do most girls do when they want to be mean to a boy?" By using the word "mean" in these questions, the authors sought to capture intent to harm. Further, by varying the gender of the target in the questions, they sought to measure differences in normative beliefs with regard to same-gender versus opposite-gender interactions. Results from Study 2 provided evidence that both boys and girls associate relational aggression with intent to harm, the second defining component of aggression. It was also found that girls viewed relational aggression as normative in situations of aggression in their peer groups, particularly for interactions in which girls were the aggressors. This view was held regardless of the sex of the target. Further, boys viewed physical aggression as the most normative aggressive behavior that other boys use in aggressive encounters with their peers. The type of aggression that children engaged in was found to be associated with their normative beliefs about the types of aggression that other children engaged in. Specifically, overtly aggressive children were more likely than relationally aggressive

children to cite overt aggression as the norm and relationally aggressive children were more likely to cite relational aggression as the norm.

In addition to gender differences in children's normative beliefs about relational and overt aggression, gender differences have also been found in children's evaluations of relational and overt aggression. Crick and Werner (1998) investigated response decision processes in a large group of 9- to 12-year old children ($n = 1,166$) in order to assess their evaluations of specific aggressive responses to conflict situations. According to a social-information processing model of aggressive behavior (Crick & Dodge, 1994), aggressive children exhibit biases in response decision processes. Specifically, overtly aggressive children tend to evaluate aggressive responses more positively than nonaggressive children do. It was hypothesized in this study that relationally aggressive children would exhibit the same bias. Further, it was hypothesized that these biases would be specific to response type (i.e., overtly aggressive responses versus relationally aggressive responses). It was thought that, relative to their peers, overtly aggressive children would evaluate overtly aggressive responses more positively than relationally aggressive responses, and that relationally aggressive children would evaluate relationally aggressive responses more positively. Additionally, it was hypothesized that these generalizations could be applied to aggressive girls as well, in that overtly aggressive girls would show the same pattern as overtly aggressive boys by evaluating overt aggression in positive ways. To test these hypotheses, Crick and Werner administered a peer nomination measure of overt and relational aggression and a hypothetical-situation instrument to assess patterns of social-information processing. The hypothetical-situation instrument consisted of a series of stories involving instrumental conflict situations (e.g., having something destroyed by a peer) or relational conflict situations (e.g., being gossiped about by peers). Children were asked to rate

each story based on outcome expectations, self-efficacy beliefs, and response decisions. Results indicated that overtly aggressive girls *and* boys evaluated overtly aggressive responses to instrumental conflict situations positively. Further, overtly aggressive girls evaluated overtly aggressive responses to relational conflict situations positively. Also, relationally aggressive boys evaluated relationally aggressive responses to instrumental conflict situations in positive ways. Finally, gender differences were found in that boys evaluated overt aggression more positively, while girls evaluated relational aggression more positively. These findings illuminate further the differences between boys and girls in terms of the type of aggressive behavior preferred in conflict situations, as well as providing further evidence that relational aggression is a gender normative form of aggression for girls that is parallel to overt aggression in boys.

While the above studies found gender differences in overt and relational aggression in a restricted age range (9- to 12-years old), differences have also been demonstrated in younger and older samples of children. Moretti, Holland, and McKay (2001) assessed relational and overt aggression using Crick and Grotpeter's (1995) peer-nomination measure in a sample of adolescent boys and girls (aged 11 to 17) and found that girls showed significantly higher rates of relational aggression than did boys. Alternately, Crick, Casas, and Mosher (1997) assessed relational and overt aggression in preschool children (aged 3.5 to 4.5 years old) and found that even at very young ages, relationally aggressive behaviors begin to appear in children's interactions with their peers. Specifically, they found that preschool girls were significantly higher in relational aggression than preschool boys based on teacher ratings of aggressive behavior. Thus, it appears that gender differences in aggressive behavior occur across age groups, ranging from very young children not yet in school to older adolescents nearing completion of high school.

It can be deduced from the above investigations that gender differences exist in the manifestation of aggressive behavior in children and adolescents. Specifically, it has been shown numerous times that girls are higher than boys in relational aggression, while boys tend to be higher than girls in overt or physical forms of aggression. However, some studies examining relational and overt aggression have failed to find significant gender differences between these subtypes (e.g., Rys & Bear, 1997; Tiet et al., 2001) and some studies have even found opposite results (e.g., Henington, Hughes, Cavell, & Thompson, 1998; Tomada & Schneider, 1997). Rys and Bear (1997) attempted to replicate Crick and Grotpeter's (1995) initial findings of gender differences in relational aggression by administering their peer nomination measure of aggression to a group of 3rd and 6th grade boys and girls (n = 266). While they did find gender differences in extreme groups of aggressive children, they failed to find significant gender differences in mean scores of relational aggression. However, the authors suggest cautious interpretation of these results, in that there was a large group of boys in the sample who scored high on both relational and overt aggression, therefore inflating the mean for boys' relational aggression. Tiet et al. (2001) also failed to find gender differences in relational aggression among boys and girls. As part of an ongoing longitudinal study on developmental and sex differences in conduct problems, these authors obtained maternal reports of relational aggression in a group of 6- to 18-year old children and adolescents (n = 308). Mothers reported on items of relational aggression such as "tells nasty things behind others' backs," "teases others behind adults' backs," and "tries to get even". They were asked to endorse these and other items as "Not True," "Sometimes True," or "Very True." No differences were found between boys and girls in maternal report of relational aggression. However, the failure to find gender differences in this study may be due to the fact that relational aggression is often difficult to observe by outsiders

due to its hidden nature (see Bjorkqvist, Osterman, & Kaukiainen, 1992c, for a review). Also, the definition of relational aggression in this study included items that may not be truly characteristic of this type of aggression, such as “picks on others,” which is not necessarily a “hidden” behavior, or “quarrels with other kids for slight reasons,” which is more verbal in nature than relational.

In addition to those studies that have failed to find gender differences in relational aggression, some researchers have found opposite gender patterns with regard to this type of aggression. Namely, several studies have found boys to be higher in relational aggression than girls (e.g., Henington et al., 1998; Tomada & Schneider, 1997). Henington et al. used a peer nomination scale to assess relational and overt aggression in a large group of 2nd and 3rd grade boys and girls (n = 904) and found that boys obtained significantly higher peer ratings of both types of aggression than did girls. Similarly, Tomada and Schneider assessed a group of 8- to 10-year old children in Italy (n = 314) using Crick and Grotpeter’s (1995) peer nomination scale and found that girls did not display more relational aggression than boys, but that boys were higher in both types of aggression. The results of these studies illustrate the inconsistency with which gender differences are found among children in terms of relational and overt aggression.

There are many possible reasons for the inconsistent data reported in these studies. Henington et al. suggest that the differences between their results and Crick and Grotpeter’s results may be due to age differences in the two samples. Crick and Grotpeter’s participants were slightly older (3rd through 6th graders) than Henington et al.’s participants (2nd through 3rd graders). However, the expected gender differences *have* been found in younger groups, as evidenced by Crick, Casas, and Mosher (1997), who found differences in preschool-aged children. In addition, Tomada and Schneider suggest that their failure to find the expected gender

differences may have been due to cross-cultural differences in relational aggression in boys. They suggest that it is possible that boys in the Italian culture are exposed to high levels of relational aggression in their homes, and that they acquire this type of behavior through observational learning. However, attributing these findings to cross-cultural differences is problematic in that studies conducted across cultures have consistently found girls to be higher in relational/indirect aggressive behavior than boys (e.g., Bjorkqvist et al., 1992a; Lagerspetz et al., 1988; Osterman et al., 1998). In fact, Osterman et al. found that girls were higher than boys in relational/indirect aggression in four different countries, including Italy.

Social aggression

Further research in the area of female aggression has investigated the construct of social aggression, which is described as “actions directed at damaging another’s self-esteem, social status or both, and includes behaviors such as facial expressions of disdain, cruel gossiping, and the manipulation of friendship patterns” (Galen & Underwood, 1997). While the concept of social aggression may appear to closely resemble indirect and/or relational aggression, these authors assert that their definition of social aggression encompasses a broader range of behaviors than indirect or relational aggression. Specifically, they assert that social aggression includes both direct *and* indirect behaviors that belong together because they serve the same function in social interaction: “to hurt another person by doing harm to her self-concept or social standing.” According to Galen and Underwood, these behaviors may be direct (e.g., verbal rejection, negative facial expressions, or negative gestures) or indirect (e.g., gossiping, rumors, or social exclusion). Thus, while this definition includes many of the same behaviors as relational or indirect aggression, it is broader in that it also includes other possible forms of aggression that may be evident in the social interactions of girls.

In an attempt to further understand the manifestation and development of social aggression in children, Galen and Underwood (1997) conducted two studies with elementary, middle, and high school-aged children. In Study 1, a group of 4th, 7th, and 10th graders (n = 234) completed a Social Behavior Questionnaire that was designed to measure the degree of hurtfulness of a range of behaviors including physical attacks (e.g., another child steals your ball) or social attacks (e.g., a group of children turn away from you when you approach them). For a total of 12 vignettes (six physical and six social), participants were asked to rate how hurt they would be if these situations happened to them. Results from this study indicated that girls viewed socially and physically aggressive behaviors as equally hurtful. Further, girls reported a greater degree of hurtfulness for social aggression situations than boys did. These results support the contention that socially subtle or indirect negative behaviors are considered *aggression* in that they are perceived as hurtful, and further, that these types of behaviors are more salient in girls' social interactions than in boys'. Results from this study also support the authors' claim that negative facial expressions belong in the category of social aggression, in that several of the vignettes contained facial expressions as the only negative behavior, and these vignettes were still rated as equally hurtful as the physical aggression vignettes.

In Study 2, Galen and Underwood (1997) sought to expand on the self-report results of Study 1 by attempting to observe socially aggressive behaviors among children at play. For the first phase of this study, seven dyads of middle school girls (aged 11 to 13) were paired with an unknown third girl (the confederate) to play a board game. Prior to the initiation of the study, the confederate was instructed to "behave in a manner that would make her a difficult play partner." This was to be accomplished through the use of (a) boastful statements, (b) critical comments, (c) poor game-playing, (d) bossiness, and (e) asking too many questions. The dyads were

introduced to the third girl and then instructed on how to play the board game. The researcher observed all interactions from behind a one-way mirror. Coding of socially aggressive behaviors followed. Results indicated that high rates of socially aggressive behaviors were used toward the confederate, particularly “glares, ignoring, snide remarks, and facial expressions of disgust and dislike.” The authors concluded that these specific behaviors may be indicative of social exclusion among friends, a key aspect of the definition of social aggression.

In the second phase of Study 2, segments of these videotapes were shown to a group of elementary, middle, and high school boys and girls (aged 6 to 16) in order to determine whether or not boys and girls in different age groups viewed the socially aggressive behaviors as indicating anger and/or dislike. Since they were specifically interested in determining children’s perceptions of negative facial expressions, they chose six segments consisting of this type of social aggression. Results from this phase of the study indicated that girls viewed examples of social aggression as indicating more anger than boys did, and that older children viewed this type of behavior as indicating more dislike. These findings provide further support for the hypothesis that negative facial expressions are considered to be socially aggressive, as well as providing support for gender and possible age differences in the perception of aggressive behavior.

Gender differences have also been found in the experience of social aggression among adolescents. In a study of 7th and 8th grade boys and girls ($n = 76$), girls reported being more distressed and hurt by social aggression than did boys, and the frequency of social aggression experienced was more strongly related to girls’ feelings of self-worth than to boys’ (Paquette & Underwood, 1999).

It is clear from these studies that social aggression is a legitimate concern for children and adolescents, particularly girls, in their everyday interactions with peers. Socially harmful

behaviors have been shown to be considered “aggression” by children and adolescents, and gender differences have been found in the perceptions and experiences of social aggression (Galen & Underwood, 1997; Paquette & Underwood, 1999).

Summary

According to past research, indirect, relational, and social aggression are common forms of aggressive behavior that typically occur more often in females than in males. These three labels for female aggression have often been used interchangeably in the literature. Indeed, Bjorkqvist (2001) claimed that “the same phenomena is referred to by the three concepts.” Conclusions drawn based on the current review support Bjorkqvist’s statement. Specifically, it is concluded that the three types of aggression are virtually indistinguishable in terms of their basic characteristics and goals. All three focus on harming another through social manipulation strategies. Therefore, in order to maintain parsimony, the current investigation will utilize the term relational aggression to refer to this type of behavior.

Male Aggression

Physical aggression

Based on the research cited above, it is clear that gender differences exist among boys and girls in terms of aggressive behavior. Studies have shown that girls use more indirect, relational, and social types of aggression than boys do (Bjorkqvist et al, 1992a; Crick et al., 1997; Crick & Grotpeter, 1995; Galen & Underwood, 1997; Lagerspetz et al, 1988). Conversely, research has also shown that boys are significantly more physically, directly, and overtly aggressive than are girls (Block, 1983; Brodzinsky et al., 1979; Crick et al., 1996; Lagerspetz et al, 1988; Maccoby & Jacklin, 1980). These studies of traditionally male forms of aggression have elicited a list of characteristic male behaviors such as hitting, kicking, striking out,

profanity, verbal abuse, threatening to beat up others, starting fights, name-calling, pushing, and stealing things from another. In an extensive review of several decades worth of aggression literature, Block (1983) provided support for the contention that overall, males are more aggressive than females from an early age. Several characteristics of the development and structure of male aggression were noted: (1) males engage in “rough-and tumble play”; (2) males more often than females attempt to dominate their peers; (3) male engage in more physical aggression than females; (4) males exhibit more antisocial behavior than females; (5) males prefer television programs with violent or aggressive content; and (6) males are more competitive than females.

More recent studies have also shown males to use more physical or overt types of aggression than females. Crick et al. (1996) asked 9-to-12-year old children to cite the behaviors that boys engage in when they are mad at another child. Results showed that physical aggression was the most commonly cited behavior that boys use when angry. Lagerspetz et al. (1988) examined aggressive behavior in a group of 11-to 12-year old children and found that boys used more direct means of aggression such as kicking, hitting, and shoving when angry with peers. This finding was replicated by Bjorkqvist et al. (1992a) in a group of 11 and 15-year old children. Thus, it can be seen that past research on aggression supports the hypothesis that males are more aggressive than females. However, this hypothesis must be examined closely in light of new evidence concerning aggression among females.

Aggression and Social-Psychological Adjustment

It can be seen from the above discussion that girls and boys exhibit aggressive behavior in different ways. An important question regarding the manifestation of these types of aggression in children is whether or not “female” types of aggression such as indirect, relational,

and social aggression, are equivalent to “male” types of aggression such as direct, overt, and physical aggression. It is possible that the aggressive behavior of boys and girls is very similar with regard to correlates and outcomes, but that boys and girls simply manifest their aggression differently.

Past research has revealed many links between aggression and social-psychological adjustment. For example, overtly aggressive children have been shown to exhibit significantly higher rates of externalizing problems such as Conduct Disorder, Oppositional Defiant Disorder, and Attention-Deficit Disorder than their nonaggressive peers (Coie & Dodge, 1983; Coie, Lochman, Terry, & Hyman, 1992; Crick, 1997; Prinstein, Boergers, & Vernberg, 2001). Further, overt aggression has been shown to predict social problems such as peer rejection (Henington, Hughes et al., 1998; Rys & Bear, 1997; Tomada & Schneider, 1997), low self-esteem, depression, and loneliness (Prinstein et al., 2001). It has also been shown that aggressive children are at risk for later drug and alcohol problems, delinquent behavior (Lochman & Wayland, 1994), marital problems, and unemployment (Farrington, 1991). Further, several studies have found associations between aggression and psychopathy in children (see Edens, Skeem, Cruise, & Cauffman, 2001, for a review).

Relational aggression has also been shown to predict several social and psychological adjustment problems. In a series of studies on overt and relational aggression in children, Crick and colleagues found that relationally aggressive children displayed significantly higher rates of internalizing and social problems than their nonaggressive peers (Crick, 1996; Crick, 1997; Crick et al., 1997). Specifically, relationally aggressive children exhibited high rates of peer rejection, loneliness, depression, anxiety, somatic complaints, and social isolation. Relational aggression

has also been shown to be linked to antisocial and borderline personality features, as well as bulimia in women (Werner & Crick, 1999).

While it can be seen that both relationally and overtly aggressive children exhibit similar rates of internalizing and social-psychological adjustment problems, research is scarce on the link between relational aggression and externalizing problems. However, evidence does exist for such a link. For example, Crick (1997) found that relationally aggressive children exhibited significantly higher rates of externalizing problems than their nonaggressive peers. Specifically, teachers reported these children as having higher rates of impulsivity, defiant behaviors, and other blaming tendencies. These results are consistent with prior research that has demonstrated that similar to overtly aggressive children, relationally aggressive children exhibit a hostile attributional bias (Crick, 1995; Grotzinger, Crick, & Bigbee, 1996), which is a pattern that is consistent with externalizing problems (see Crick & Dodge, 1994, for a review).

This pattern of results suggests that both relationally and overtly aggressive children show higher rates of psychopathology than their nonaggressive peers. However, much more research is needed on boys and girls who display these types of aggression in order to determine whether “female” types are similar to “male” types. It has been consistently shown that relationally aggressive girls and overtly aggressive boys exhibit similar rates of internalizing and social-psychological problems. However, only one investigation has examined the incidence of externalizing problems in relationally aggressive girls. Further, no research to date has examined the link between relational aggression and other indicators of psychopathology such as delinquency and psychopathy. Therefore, in order to accurately determine the level of similarity between relationally aggressive girls and overtly aggressive boys, further research must examine the link between relational aggression and these other indices of psychopathology.

Statement of Problem

It is clear from the above discussion that there exists a problem with the characterization of aggressive behavior in children. While many researchers agree that aggressive behavior can be characteristic of both boys and girls, researchers seem to disagree on the forms and types of aggression that exist in these groups. One useful distinction between types of aggressive behavior is that of Crick (1996), who conducted a factor analysis on a teacher measure of aggression and found support for both relational and overt factors. While these results support the idea that teachers are able accurately identify and discriminate between relational and overt aggression, they do not examine the accuracy of the youth themselves as reporters of their own aggressive behavior. Thus, it is not clear whether children reporting on their own aggression would be able to distinguish between the two types.

Another issue regarding the conceptualization of different types of aggression for boys and girls concerns the labeling of certain types of aggression as “female” types and certain types as “male” types. Several studies have shown that girls are more likely to use indirect/relational/social types of aggression than are boys (e.g., Bjorkqvist, Lagerspetz, & Kaukiainen, 1992a; Crick, Casas, & Mosher, 1997; Crick & Grotpeter, 1995; Galen & Underwood, 1997; Lagerspetz, Bjorkqvist, & Peltonen, 1988). However, other studies have found opposite results (e.g., Henington, Hughes, Cavell, & Thompson, 1998; Tomada & Schneider, 1997) and some have failed to find significant gender differences between these subtypes (e.g., Rys & Bear, 1997; Tiet et al., 2001). Thus, due to the inconsistency of many of the findings regarding aggression and gender, many authors suggest that it is important to refrain

from this type of gender labeling (see Bjorkqvist, 2001; Underwood, Galen, & Paquette, 2001 for reviews).

Regardless of the label used to describe the aggressive behavior of girls, it has been consistently shown that this type of behavior is associated with several negative outcomes. Similar to overt aggression in boys, relational aggression in girls has been shown to predict social-psychological maladjustment such as depression, loneliness, and social isolation, as well as other internalizing and externalizing problems (Crick, 1996; Crick, 1997; Crick et al., 1997). However, it is unclear whether relational aggression in girls is equivalent to overt aggression in boys, or if it is a completely unique form of aggression with its own set of correlates and outcomes that are distinct from those associated with overt aggression.

The current study attempted to address these issues through several steps. First, we attempted to identify separate relational and overt aggression subtypes through self-report and teacher-report of aggression in a sample of adolescents. Second, we examined how these two subtypes of aggression formed groups based on gender. Finally, in order to determine whether aggression in girls was similar to aggression in boys, these groups of aggressive boys and girls were compared on several indices of social-psychological adjustment including internalizing and externalizing disorders, delinquency, and psychopathy.

Hypotheses

1. Based on past research that has identified a three-factor structure of social behavior in children, **it was hypothesized that three factors: (1) prosocial behavior, (2) relational aggression, and (3) overt aggression, would emerge for both self and teacher-report of social behavior in this sample.**

2. **It was hypothesized that distinct groups of aggressive children who varied on the two factors would emerge through cluster analysis.** Specifically, it was hypothesized that the following groups would emerge:

- 1) high RA/high OA (boys only);
- 2) high RA (girls only);
- 3) high OA (boys only);
- 4) average RA/average OA (boys only);
- 5) average RA/average OA (girls only).

Based on past research, it was not expected that groups of high OA girls would emerge.

3. It has been argued that relational aggression in girls is similar to overt aggression in boys in terms of social-psychological adjustment problems. **It was hypothesized that girls high in relational aggression would be similar to boys high in overt aggression, and that both of these groups would be higher than the nonaggressive groups for the following domains: psychopathy, delinquency, drug use, internalizing disorders (e.g., depression, anxiety), and externalizing disorders (e.g., Conduct Disorder, ADHD).**

Method

Participants

The parents of a total of 670 eligible fifth through ninth graders from two local public schools were contacted for potential participation in the study. Of those contacted, approximately 53% (358) responded to the invitation to participate. Approximately two-thirds of those parents who responded agreed to let their children participate (roughly 35% of the entire student body). However, 33 students were absent on the day of recruitment, which led to a final participant count of 202 students (87 males and 115 females). The final sample appeared to be representative of the ethnicity of the entire student body. Specifically, the sample consisted of 24.3 % Caucasian students and 59.9 % African-American students, while the student body consisted of 22.5% Caucasian students and 61.5% African-American students. However, the final sample consisted of a higher proportion of girls (56.9%) than did the student body (46.8%). Table 1 contains complete demographic information for the final sample.

Table 1

Demographic Information

Variable	Frequency	Percent
Gender		
Male	87	43.1
Female	115	56.9
Race		
African-American	121	59.9
Caucasian	49	24.3
Hispanic	13	6.4
Other	11	5.4
Biracial	7	3.5
Unknown	1	.5
Grade		
5 th	27	13.4
6 th	37	18.3
7 th	59	29.2
8 th	27	13.4
9 th	52	25.7

Note. N=202; Mean age (SD) = 13.16 (1.57); Age range = 10-17.

One female participant was excluded from analyses due to a highly deviant overt aggression score. This participant's overt aggression score was considered an outlier due to the fact that it was six points higher than the highest female overt aggression score in the group and it was highly inconsistent with the teacher's reported score. Two cases were excluded from all analyses due to missing aggression data and two additional cases were excluded from teacher-based analyses due to missing teacher-report data. Thus, final analyses for self-reported dependent variables were conducted on 199 students (86 males and 113 females), while final analyses for teacher-reported dependent variables were conducted on 197 students (85 males and 112 females).

Measures

Ratings of Children's Social Behavior (RCSB; Crick, 1996).

The RCSB is a 17-item rating scale designed to assess aggressive and prosocial behavior in children. This measure was adapted from Crick's (1996) Children's Social Behavior Scale for teachers for use as a self-report instrument in this study. The RCSB consists of three subscales: (1) relational aggression (RA), (2) overt aggression (OA), and (3) prosocial behavior (PS). Seven items form a relational aggression subscale that examines how often children engage in relationally aggressive acts towards their peers (e.g., "When I get mad at classmates, I get even by excluding them from my group of friends," "I spread rumors or gossip about classmates," "I try to get others to dislike certain classmates by telling lies about them to others"). Four items form an overt aggression subscale that examines how often children engage in overtly aggressive acts towards their peers (e.g., "I hit, shove, or push classmates," "I get into physical fights with classmates," "I like to try to dominate or bully classmates"). Four items form a prosocial behavior subscale that examines how often children engage in prosocial behavior towards their

peers (e.g., “I say supportive things to my classmates,” “I try to cheer up classmates when they are sad or upset about something,” “I am helpful to classmates”). The final two items are measures of how well liked the children are by their peers.

Items on the RCSB are rated on a 5-point likert scale ranging from “Never True” to “Almost Always True.” The RCSB has three versions: self, parent, and teacher-report. For the purposes of this study, only the self and teacher-report were used. Previous research (Crick, 1996) supports the internal consistency of all three subscales, with alphas equal to .94, .94, and .93 for the relational aggression, overt aggression, and prosocial behavior scales, respectively. Internal consistency for the child and teacher-report RCSB in this study was satisfactory, with alphas as follows: RA self-report = .69; OA self-report = .69; PS self-report = .70; RA teacher-report = .92; OA teacher-report = .93; PS teacher-report = .91.

Youth's Inventory-4 (YI-4; Gadow & Sprafkin, 1999).

The YI-4 is a self-report rating scale designed to screen for the presence of common DSM-IV diagnoses found in adolescents. The YI-4 consists of 128 items that screen for the presence of Attention-Deficit Hyperactivity Disorder (ADHD), Conduct Disorder (CD), Oppositional Defiant Disorder (ODD), Generalized Anxiety Disorder (GAD), Specific Phobias, Separation Anxiety Disorder (SAD), psychotic symptoms, Major Depression, Bipolar Disorder, Anorexia, Bulimia, and alcohol and drug use. Each symptom on the YI-4 is rated on a 4-point scale based on the frequency of its occurrence, ranging from “Never” to “Very Often”. For scoring purposes, symptoms are considered clinically significant based on the severity and frequency of the symptom. The more severe the symptom, the less frequently it has to occur in order for it to be considered a significant symptom. For example, for most symptoms (e.g., “I have trouble paying attention,” “I feel nervous,” or “I feel unhappy or sad”) a rating of “Often”

or “Very Often” is necessary for the symptom to be considered significant. However, for extremely severe symptoms (e.g., “I set fires,” “I force people into sexual activity,” or “I use illegal drugs”) a rating of “Sometimes” is sufficient for the symptom to be considered significant.

Test-retest reliability of the YI-4 Symptom Severity scores is generally moderate to high for most symptom categories, with correlations ranging from .35 to .92. Internal reliability of the YI-4 symptom categories is also sufficient, with alphas ranging from .66 to .87 (Gadow et al., 2002). Convergent, divergent, and discriminant validity are also satisfactory for the YI-4 (Gadow & Sprafkin, 1999; Gadow et al., 2002). Internal consistency for the YI-4 scales used in this study was satisfactory, with alphas as follows: depression = .76; generalized anxiety = .70; separation anxiety = .65; conduct disorder = .88; attention deficit/hyperactivity = .85.

Adolescent Symptom Inventory-4 (ASI-4; Gadow & Sprafkin, 1997).

The ASI-4 is a behavior rating scale designed to screen for the presence of common DSM-IV diagnoses found in adolescents. There are two versions of the ASI-4: (1) parent-report and (2) teacher-report. For the purposes of the present study, only the teacher version was used. The teacher version consists of 81 items that screen for the presence of Attention-Deficit Hyperactivity Disorder (ADHD), Conduct Disorder (CD), Oppositional Defiant Disorder (ODD), Generalized Anxiety Disorder (GAD), Specific Phobias, Separation Anxiety Disorder (SAD), psychotic symptoms, Major Depression, Bipolar Disorder, Anorexia, Bulimia, and alcohol and drug use.

Each symptom on the ASI-4 is rated on a 4-point scale based on the frequency of its occurrence, ranging from “Never” to “Very Often”. For scoring purposes, symptoms are considered clinically significant based on the severity and frequency of the symptom. The more

severe the symptom, the less frequently it has to occur in order for it to be considered a significant symptom. For example, for most symptoms (e.g., “has difficulty paying attention to tasks,” “has difficulty controlling worries,” or “is depressed for most of the day”) a rating of “Often” or “Very Often” is necessary for the symptom to be considered significant. However, for extremely severe symptoms (e.g., “has deliberately started fires,” “has stolen things from others using physical force,” or “has forced someone into sexual activity,”) a rating of “Sometimes” is sufficient for the symptom to be considered significant.

Predictive validity for the ASI-4 has been shown to be satisfactory, with high rates of agreement found between scale scores and psychiatric diagnoses (Gadow & Sprafkin, 1997). Internal consistency for the ASI-4 scales used in this study was satisfactory, with alphas as follows: depression = .77; generalized anxiety = .87; conduct disorder = .68; attention deficit/hyperactivity = .92.

Antisocial Process Screening Device (APSD; Frick & Hare, 2001).

The APSD is a 20-item measure of antisocial behavior in children. Each item is rated on a 3-point scale as either 0 (not at all true), 1 (sometimes true), or 2 (definitely true). The APSD was modeled after the Psychopathy Checklist-Revised (PCL-R; Hare, 1991), which assesses psychopathic traits in adults. Frick, Bodin, and Barry (2000) conducted a factor analysis in a large community sample of children ($n = 1136$) and found that the APSD can be divided into three distinct factors: (1) poor impulse control (IMP), (2) narcissistic personality features (NAR), and (3) callous and unemotional traits (CU). The CU component of the APSD consists of 6 items (e.g., “does not show emotions,” “is not concerned with the feelings of others”) measuring a callous and unemotional interpersonal style. The CU scale has been shown to identify a distinct subgroup of children with conduct problems that are more severe than other children with

conduct disorder (Christian, Frick, Hill, Tyler, & Frazer, 1997). The narcissism component of the APSD consists of 7 items (e.g., “brags excessively,” “can be charming”) measuring narcissistic personality features. The impulsivity component consists of 5 items (e.g., “acts without thinking,” “does not plan ahead”) measuring an impulsive interpersonal style. Child self-report and teacher-report ratings on the APSD were used to measure antisocial features of our sample. Internal consistency for the APSD in this sample was satisfactory ($\alpha = .72$ for self-report and $.90$ for teacher-report).

Self-Report of Delinquency (SRD; Elliott, Huizinga, & Ageton, 1985).

The SRD is a 46-item structured interview that assesses delinquent behavior in children. For each of 36 delinquent acts (e.g., destroying property, stealing, carrying weapons, selling drugs, hitchhiking, physical fighting, rape, alcohol and drug use, arrest) the child is asked (a) whether or not he or she has ever engaged in the stated problem behavior, (b) the number of times he or she has engaged in the behavior, (c) the age at which he or she first engaged in the behavior, and (d) whether or not he or she has friends who have engaged in the behavior. The remaining 10 items assess the arrest history of all members of the child’s immediate family (including aunts, uncles, and grandparents). The SRD was used in the current study to measure specific delinquent and drug use behaviors. Internal consistency for the SRD in this sample was excellent ($\alpha = .96$).

Behavioral Assessment System for Children (BASC; Reynolds & Kamphaus, 1992).

The BASC is a multimethod, multidimensional behavior rating scale designed to evaluate a broad range of both adaptive and maladaptive behaviors in children ages 2 ½ to 18 years of age. The BASC includes a self-report scale, a teacher rating scale, and a parent rating scale. It has been standardized on a large nationwide sample of children and adolescents and each of the

scales has proven to produce reliable scores using several indices of reliability (e.g., internal consistency and test-retest) (Kamphaus & Frick, 1996).

Each child completed the Self-Report of Personality-Adolescent Version (SRP-A), an omnibus personality inventory composed of 186 true/false statements. The SRP-A consists of 14 scales arranged into the following composites: School Maladjustment (Attitude to School, Attitude to Teachers, Sensation Seeking), Clinical Maladjustment (Anxiety, Atypicality, Locus of Control, Social Stress, Somatization), Personal Adjustment (Relations with Parents, Interpersonal Relations, Self-Esteem, Self-Reliance), and an overall composite, the Emotional Symptoms Index (Anxiety, Social Stress, Depression, Sense of Inadequacy, Interpersonal Relations, Self-Esteem).

Teachers completed the Teacher Rating Scale (TRS), which consists of 14 scales arranged into the following composites: Externalizing Problems (Aggression, Hyperactivity, Conduct Problems), Internalizing Problems (Anxiety, Depression, Somatization), School Problems (Attention Problems, Learning Problems), Adaptive Skills (Adaptability, Leadership, Social Skills, Study Skills), and Other Problems (Atypicality, Withdrawal). For the purposes of this study, t-scores (self/teacher-report) for specific scales were used as measures of our behaviors of interest. Internal consistency for the BASC in this sample was satisfactory ($\alpha = .65$ for self-report and $.85$ for teacher-report).

Sensation Seeking Scale for Children (SSSC; Russo et al., 1993).

The SSSC is a 26-item self-report measure of sensation seeking behavior in children. The scale consists of three subscales: (1) Thrill and Adventure Seeking (TAS), (2) Drug and Alcohol Attitudes (DAA), and (3) Social Disinhibition (SD). Children are asked to rate their preference for or against sensation seeking behaviors, choosing between items such as, "I'd never do

anything that's dangerous", and "I sometimes like to do things that are a little scary". For the purposes of this study, the overall t-score for the SSSC was used as a measure of sensation seeking behavior. Internal consistency for the SSSC in this sample was good ($\alpha = .81$).

Procedure

An invitation to participate in the study was sent home to the parents/guardians of all children in grades 5 through 9 at the target schools. Only students who received permission from their parents were allowed to participate. Data was collected from the students during class time after parental permission was obtained. All children had the procedures explained to them, and were asked if they would like to participate. All participants were informed that they could withdraw from the study at any time. After child assent was obtained, questionnaires were handed out in packets. The instructions for each measure were read aloud and a time limit was set for the completion of each measure. After completion of the student packets, each child received a \$5.00 gift certificate to McDonald's Restaurant.

Individual teachers were then contacted and asked to complete questionnaires on each participating student. The packets of questionnaires were left in the teachers' mailboxes at school and were collected within a three-week period. All teachers received a \$50.00 Wal-Mart gift certificate upon completion of the questionnaires. Additionally, all teachers were entered into a raffle to win a \$100.00 Wal-Mart gift certificate and, if they returned the forms early, they were also entered into an additional "early-bird" raffle to win a \$75.00 Wal-Mart gift certificate.

Results

To address the objectives of this study, analyses were conducted to: (1) determine the structure of aggression in a sample of adolescents based on the self and teacher-report versions of the RCSB; specifically to determine if separate relational and overt aggression factors emerge; (2) determine how relational and overt aggression cluster according to gender; and (3) assess the degree to which aggression in girls is similar to aggression in boys in terms of social-psychological adjustment. All analyses were conducted using SPSS 10.0 (1999).

Dimensions of Aggression in Children

To test Hypothesis 1, the structure of the self-report Ratings of Children's Social Behavior (RCSB; Crick, 1996) was analyzed using principal components factor analysis with VARIMAX rotation. Principal components analysis is a linear transformation technique that reduces a set of correlated variables into a smaller set of uncorrelated components while maintaining most of the information in the original data set. The VARIMAX rotation method yields an orthogonal solution, in which the rotated factors are uncorrelated. This analysis of the youth self-report items yielded five factors with eigenvalues over 1.00 (see Table 2 for item loadings). However, examination of the scree plot suggested interpretation of the first three factors only (see Figure 1), which together accounted for approximately 46% of the item variance. The first factor (eigenvalue = 4.3) accounted for 25.2% of the item variance and consisted of four relational aggression items and three overt aggression items. The second factor (eigenvalue = 2.0) accounted for 11.7% of the item variance and consisted of four prosocial behavior items. The third factor (eigenvalue = 1.5) accounted for 8.8% of the item variance and

consisted of three relational aggression items and two overt aggression items. Factors four and five were not interpreted based on examination of the scree plot (see Figure 1).

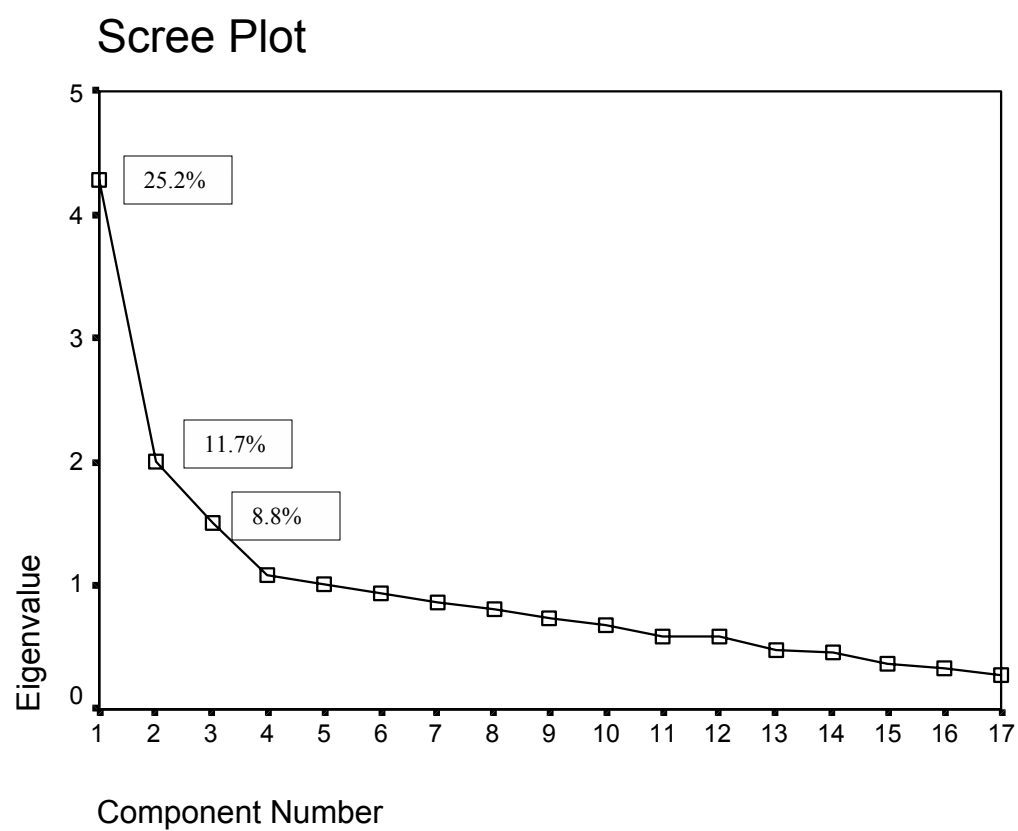
Table 2

Factor Loadings for Self-Report RCSB

Item	Component				
	1	2	3	4	5
10. I try to get others to dislike certain classmates by telling lies about them to others. (RA)	.798				
5. I spread rumors or gossip about classmates. (RA)	.667				
9. I threaten to hit or beat up classmates. (OA)	.664				
13. I threaten to stop being classmates' friend in order to hurt them or to get what I want. (RA)	.641				
12. I try to dominate or bully classmates. (OA)	.617				
7. When I get mad at classmates, I try to get other people to stop liking them. (RA)	.582		.303		
6. I get into physical fights with classmates. (OA)	.515		.359		
1. I say supportive things to my classmates. (PS)		.807			
8. I am helpful to classmates. (PS)		.737			
4. I try to cheer up classmates when they are sad or upset about something. (PS)		.701			
14. I am kind to classmates. (PS)		.537			.510
2. When I get mad at classmates, I get even by excluding them from my group of friends. (RA)			.675		
3. I hit, shove, or push classmates. (OA)			.650		
11. When I am mad at classmates, I ignore them or stop talking to them. (RA)			.615		.361
17. I am well liked by classmates of the <u>opposite</u> sex.				.829	
16. I am well liked by classmates of the <u>same</u> sex.				.767	
15. I like to exclude classmates from group activities. (RA)					.729

Note: Negative cross-loadings were omitted. PS = prosocial behavior; RA = relational aggression; OA = overt aggression.

Figure 1. Scree Plot for Self-Report RCSB.



The results from this factor analysis suggest that the RCSB self-report contains three factors relating to aggression and prosocial behavior. However, relational and overt aggression did not emerge as separate factors. These results are inconsistent with the results reported for Crick's (1996) factor analysis of the teacher version of the RCSB.

A second factor analysis (principal components with VARIMAX rotation) was conducted on the teacher version of the RCSB (originally called CSBS; Crick, 1996) to determine whether the structure was the same as the self-report version and/or Crick's initial analysis of the CSBS. This analysis yielded three factors with eigenvalues over 1.00 (see Table 3 for item loadings). However, examination of the scree plot suggested interpretation of the first two factors only (see Figure 2), which accounted for approximately 70% of the item variance. The first factor (eigenvalue = 9.2) accounted for 54.3% of the item variance and consisted of almost all of the aggression items (four overt and six relational). The second factor (eigenvalue = 2.7) accounted for 15.6% of the item variance and consisted of four prosocial behavior and two popularity items. The third factor was not interpreted based on examination of the scree plot (see Figure 2).

The results from the second factor analysis yielded only two interpretable factors, (1) overall aggression, and (2) prosocial behavior. In contrast to Crick (1996), distinct factors did not emerge for relational and overt aggression. These results suggest that teachers in this sample may have been unable to distinguish between relational and overt aggression among their students. To further examine this possibility, correlation coefficients were computed for both child and teacher reports of RA and OA. The correlation between RA and OA for teacher-report was significant, $r(195) = .75, p < .01$, and was higher than the correlation between RA and OA for self-report, $r(197) = .50, p < .01$. This suggests that teachers have more difficulty distinguishing between the two types of aggression than do the youth themselves.

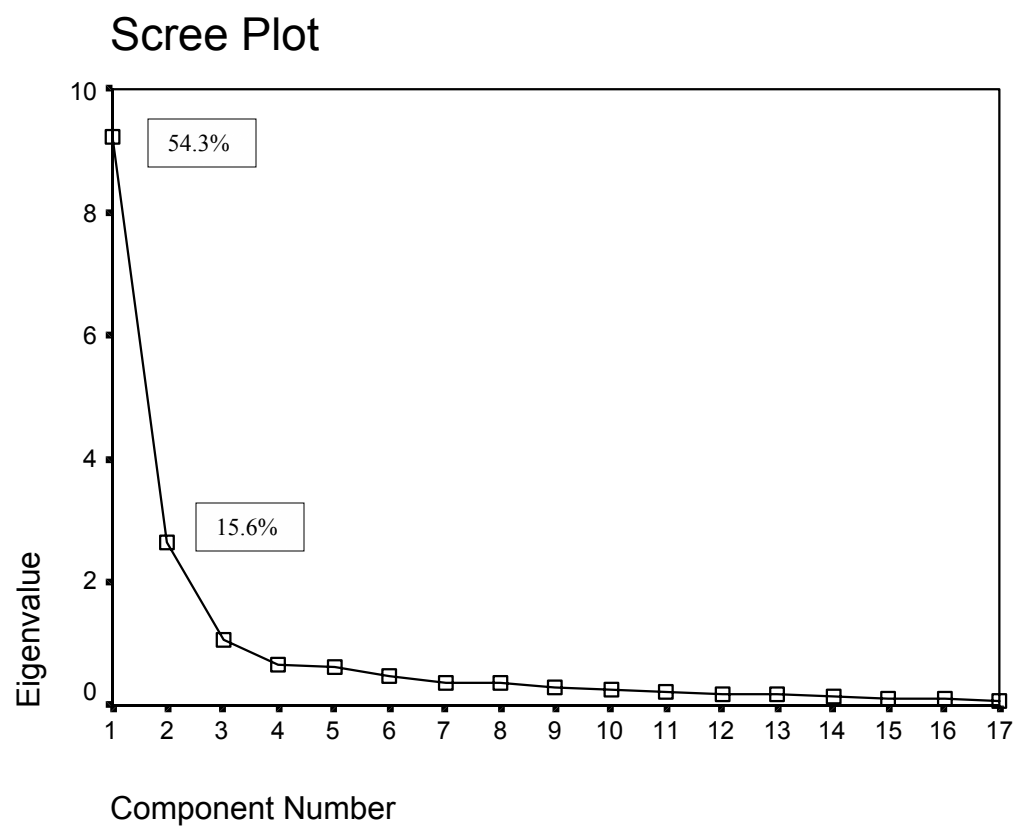
Table 3

Factor Loadings for Teacher-Report RCSB

Item	Component		
	1	2	3
9. This child threatens to hit or beat up people. (OA)	.888		
6. This child gets into physical fights with peers. (OA)	.887		
12. This child likes to dominate or bully peers. (OA)	.850		
3. This child hits, shoves, or pushes peers. (OA)	.833		
13. This child threatens to stop being friends with peers in order to hurt them or to get what he/she wants. (RA)	.772		.400
7. When this child gets mad at peers, he/she tries to get other people to stop liking them. (RA)	.698		.522
5. This child spreads rumors or gossip about peers. (RA)	.690		.520
10. This child tries to get others to dislike other peers by telling lies about them to others. (RA)	.681		.566
2. When this child gets mad at peers, he/she gets even by excluding them from his/her group of friends. (RA)	.530		.522
15. This child likes to exclude peers from group activities. (RA)	.494		.661
4. This child tries to cheer up peers when they are sad or upset about something. (PS)		.881	
1. This child says supportive things to peers. (PS)		.876	
8. This child is helpful to peers. (PS)		.830	
17. This child is well liked by peers of the <u>opposite</u> sex.		.767	
14. This child is kind to peers. (PS)		.738	
16. This child is well liked by peers of the <u>same</u> sex.		.734	
11. When this child is mad at classmates, he/she ignores them or stops talking to them. (RA)			.754

Note: Negative cross-loadings were omitted. PS = prosocial behavior; RA = relational aggression; OA = overt aggression.

Figure 2. Scree Plot for Teacher-Report RCSB.



Cluster Groups of Aggressive Boys and Girls

Hypothesis 2 was tested through several steps. Due to the fact that a majority of previous research on relational and overt aggression measured these types through youth nominations rather than teacher-report, and based on the idea that youth in this age range are better reporters of this type of behavior than teachers (Kamphaus & Frick, 2002), it was decided to utilize only self-report RA and OA scores. Composite scores for OA and RA were created by individually summing the seven relational aggression (RA) items and the four overt aggression (OA) items from the RCSB. Due to the fact that the RA and OA scales had different numbers of items, the composite scores were transformed into standardized z scores prior to conducting the cluster analyses. Cluster analyses were then conducted using SPSS (1999) k -means cluster command. SPSS clustering procedures identify homogenous groups of cases by assigning cases to clusters based on the Euclidean distance from group centers. The k -means method of clustering was used because it allows for the a priori specification of a certain number of clusters.

In order to determine the appropriate number and composition of the clusters, it was decided to conduct cluster analyses in two different ways. Initially, cluster analyses were conducted for boys and girls separately in order to create clusters of youth who were considered aggressive compared to their same-sex peers. Several analyses were conducted by specifying different numbers of clusters. After testing two, three, and four-cluster solutions, the four-cluster solution was retained on the basis of Hypothesis 2 and the interest in identifying groups of adolescents whose cluster membership varied according to gender. This analysis yielded separate four-cluster solutions for boys and girls. For each gender, the following four clusters emerged:

1. high OA/high RA;
2. high OA/average RA;

3. high RA/average OA;
4. average OA/average RA.

For each of these four clusters, boys and girls were considered elevated on OA and RA based on the gender-specific means for each scale (see Table 4 for means). In other words, youth were considered to be in the high groups based on their level of aggression as compared to their same-sex peers. Breaking down the four clusters according to this method yielded the following eight groups:

1. high RA/high OA boys ($n = 5$);
2. high RA/high OA girls ($n = 9$);
3. high RA/average OA boys ($n = 16$);
4. high RA/average OA girls ($n = 33$);
5. high OA/average RA boys ($n = 13$);
6. high OA/average RA girls ($n = 11$);
7. average RA/average OA boys ($n = 52$);
8. average RA/average OA girls ($n = 60$).

Three of these groups (2, 3, and 6) were not hypothesized based on Hypothesis 2.

While the above eight groups were theoretically meaningful and consisted of youth who were elevated on aggression as compared to their same sex peers, this method of grouping had the disadvantage of creating groups with the same labels (e.g., high OA) but with different aggression means (see Table 4). For example, group 5 consisted of high OA boys and group 6 consisted of high OA girls. However, the OA means used to create these groups were significantly different, $t(197) = 4.75$, $p < .001$, making it difficult to directly compare them (see Table 4). Since the goal of this study was to examine whether the subtypes of relational and overt

aggression were similar in terms of social-psychological adjustment variables, retaining groups with differential means might lead to misleading results. For this reason, this method of grouping was not used for further analyses.

Table 4

Means and Standard Deviations for Cluster Groups, Gender Groups, and Overall Sample.

Cluster Group	Clusters Based on Gender-Specific Means		Clusters Based on Overall Sample Means	
	RA	OA	RA	OA
Average Boys	10.27 (2.04)	5.90 (1.98)	10.17 (2.04)	5.67 (1.77)
Average Girls	10.10 (1.81)	4.83 (0.96)	10.58 (2.10)	5.18 (1.38)
High RA Boys	18.00 (2.48)	7.38 (2.02)	18.00 (2.48)	7.38 (2.02)
High RA Girls	15.91 (2.50)	5.20 (1.19)	18.72 (2.98)	7.45 (1.95)
High OA Boys	12.63 (3.16)	14.00 (1.77)	12.45 (2.70)	12.91 (2.39)
High OA Girls*	12.20 (2.83)	8.27 (1.03)	-----	-----
High Both Boys	24.29 (3.15)	13.57 (0.98)	24.29 (3.15)	13.57 (0.98)
High Both Girls*	22.50 (2.39)	9.42 (0.73)	-----	-----
Total Boys	12.80 (4.95)	7.50 (3.51)		
Total Girls	12.18 (4.13)	5.67 (1.83)		
			Total Sample	12.45 (4.50) 6.46 (2.83)

Note: “High Both” refers to participants with elevated levels of both relational and overt aggression. Clusters based on gender-specific means were formed by clustering boys and girls separately and assigning them to high groups based on their respective gender group means. Clusters based on overall sample means were formed by cluster analyzing the entire sample and assigning cases to high groups based on the total sample means. All clusters were computed after z-transformations of the aggression variables. RA= Relational Aggression; OA = Overt Aggression.

*When created based on overall sample means, these groups consisted of only one participant each.

In order ensure that groups were created based on the same mean level of aggression, a second cluster analysis (*k*-means) was conducted on the entire sample of adolescents. As before, a four-cluster solution was retained as the best solution. This solution was then cross-tabulated with gender to examine the gender membership for each cluster group. For this analysis, youth were considered elevated based on the overall sample means for RA and OA (see Table 4 for means). This analysis yielded eight groups (N=199), but only six of the groups (N= 197) were considered meaningful due to the fact that groups 2 and 6 contained only one case each:

1. high RA/high OA boys (n = 7);
2. high RA/high OA girls (n=1);
3. high RA/average OA boys (n = 13);
4. high RA/average OA girls (n = 20);
5. high OA/average RA boys (n = 11);
6. high OA/average RA girls (n=1);
7. average RA/average OA boys (n = 55);
8. average RA/average OA girls (n = 91).

Conducting a cluster analysis on the entire sample yielded groups that were more consistent with Hypothesis 2 (although Group 2, high RA boys, was not predicted). Thus, the six-cluster solution was selected as the focus for additional analyses.

Differences Between Aggressive Groups

Several steps were conducted to test Hypothesis 3. First, variables for comparison covering three domains of social-psychological functioning were created (see Table 5 for means and standard deviations and Table 6 for correlations). The first domain of interest was “underlying processes,” which included psychopathy and sensation seeking. The self and

Table 5

Means and Standard Deviations for Social-Psychological Functioning Variables

	M	SD	Min-Max
<u>Underlying Processes</u>			
CPSY	13.46	5.01	0.00 – 27.00
TPSY	9.29	7.11	0.00 – 32.63
CSS†	-5.42	1.76	-4.36 – 4.50
<u>Internalizing Symptoms</u>			
CANX †	-4.92	2.30	-4.09 – 8.57
TANX†	0.00	1.70	-1.42 – 10.05
CDEP†	8.86	1.77	-1.60 – 6.83
TDEP†	0.00	1.70	-0.99 – 13.75
<u>Externalizing Symptoms</u>			
CCD	1.49	2.65	0.00 – 15.00
TCD	0.21	0.71	0.00 – 4.50
CADHD	4.16	3.78	0.00 – 18.00
TADHD	2.07	3.70	0.00 – 17.00
CDEL	3.99	3.79	0.00 – 18.00
CDRUGS	0.55	1.04	0.00 – 6.00

C= Child-report; T = Teacher-report; PSY = psychopathy; SS = sensation seeking; ANX = anxiety; DEP =depression; CD = conduct disorder; ADHD = attention deficit-hyperactivity disorder; DEL= delinquency; DRUGS = drug use.

†- means and standard deviations for these variables are based on *z* scores.

Table 6

Correlations Among Aggression Variables, Demographics, and Social-Psychological Adjustment Variables

	Total Sample					Girls				Boys			
	RA	OA	Age	Gender	Race	RA	OA	Age	Race	RA	OA	Age	Race
CPSY	0.41**	0.48**	0.12	-0.17*	-0.12	0.40**	0.45**	0.20*	-0.14	0.43**	0.51**	-0.03	0.01
TPSY	0.23**	0.31**	-0.08	-0.17*	-0.04	0.36**	0.31**	-0.08	-0.03	0.08	0.25*	-0.09	-0.09
CSS	0.09	0.32**	0.19**	-0.31**	-0.17*	0.11	0.33**	0.20	-0.18	0.02	0.21	0.15	-0.18
CANX	0.32**	0.28**	-0.11	0.04	-0.06	0.32**	0.40**	0.05	-0.08	0.33**	0.25*	-0.32**	0.06
TANX	0.14	0.18*	-0.07	-0.04	0.01	0.15	0.07	-0.07	0.02	0.12	0.30**	-0.07	-0.04
CDEP	0.19**	0.15*	0.01	0.06	-0.07	0.14	0.13	0.16	-0.09	0.27*	0.23*	-0.23*	-0.02
TDEP	0.10	0.03	0.17*	0.07	0.06	0.16	0.04	-0.15	0.06	0.01	0.10	-0.23*	-0.18
CCD	0.13	0.51**	0.09	-0.29**	-0.04	0.24*	0.43**	0.13	-0.07	0.07	0.49**	0.06	0.11
TCD	0.05	0.04	-0.08	-0.05	-0.02	0.15	0.03	-0.16	-0.02	-0.05	0.03	0.02	-0.09
CADHD	0.39**	0.25**	-0.01	0.04	-0.04	0.43**	0.27**	0.07	-0.06	0.35**	0.30**	-0.11	-0.00
TADHD	0.22**	0.25**	-0.14	-0.23**	-0.04	0.31**	0.25**	-0.10	-0.03	0.13	0.16	-0.22*	-0.09
CDEL	0.27**	0.51**	0.25**	-0.18*	-0.07	0.28**	0.45**	0.25**	-0.09	0.25*	0.52**	0.24*	0.06
CDRUGS	0.12	0.36**	0.30**	-0.11	-0.03	0.08	0.40**	0.37**	-0.06	0.15	0.31**	0.26*	0.09

RA= Relational Aggression; OA = Overt Aggression; C= Child-report; T = Teacher-report; PSY = psychopathy; SS = sensation seeking; ANX = anxiety; DEP =depression; CD = conduct disorder; ADHD = attention deficit-hyperactivity disorder; DEL= delinquency; DRUGS = drug use.

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

teacher-report psychopathy variables were created by separately summing the items on the self and teacher versions of the Antisocial Process Screening Device (APSD; Frick & Hare, 2001). Given that self-report data were collected on two measures of sensation seeking, it was decided to create a summed sensation seeking variable by combining items from the sensation seeking scale of the Behavioral Assessment System for Children (BASC; Reynolds & Kamphaus, 1992) with items from the Sensation Seeking Scale for Children (Russo et al., 1993). These scales were significantly correlated, $r(200) = .58, p < .01$; therefore, scores on each scale were transformed into z scores and then summed to create an overall sensation seeking variable.

The second domain of interest was internalizing symptoms, which included anxiety and depression. The self-report anxiety variable was created by combining items from the anxiety scale of the BASC (Reynolds & Kamphaus, 1992) with items measuring Generalized Anxiety Disorder (GAD) and Separation Anxiety Disorder (SAD) on the Youth's Inventory-4 (YI-4; Gadow & Sprafkin, 1999). The correlation between BASC anxiety and YI-4 GAD was significant $r(201) = .44, p < .01$, and the correlation between BASC anxiety and YI-4 SAD was also significant, $r(201) = .28, p < .01$. Further, the YI-4 GAD and SAD scales were significantly correlated, $r(201) = .45, p < .01$. Scores on each of these scales were transformed into z scores and then summed to create an overall self-report measure of anxiety. The teacher-report anxiety variable was created by combining items from the anxiety scale of the BASC-TRS with items measuring Generalized Anxiety Disorder (GAD) on the Adolescent Symptom Inventory-4 (ASI-4; Gadow & Sprafkin, 1997). The correlation between BASC anxiety and ASI-4 GAD was significant $r(198) = .44, p < .01$. Scores on each of these scales were transformed into z scores and then summed to create an overall teacher-report measure of anxiety.

The self-report depression variable was created by combining items from the depression scale of the BASC (Reynolds & Kamphaus, 1992) with items measuring depressive symptoms on the YI-4 (Gadow & Sprafkin, 1999). These scales were significantly correlated, $r(199) = .53$, $p < .01$; therefore, scores on each scale were transformed into z scores and then summed to create an overall self-report depression variable. The teacher-report depression variable was created by combining items from the depression scale of the BASC-TRS with items measuring depressive symptoms on the ASI-4 (Gadow & Sprafkin, 1997). These scales were significantly correlated, $r(199) = .43$, $p < .01$; therefore, scores on each scale were transformed into z scores and then summed to create an overall teacher-report depression variable.

The third domain of interest was externalizing symptoms, which included conduct problems, delinquency, attention-deficit/hyperactivity (ADHD) symptoms, and drug use. The self-and teacher-report conduct disorder and ADHD variables were created using their respective scales on the YI-4 and the ASI-4 (Gadow & Sprafkin, 1997; Gadow & Sprafkin, 1999). Delinquency and drug use variables were created by summing delinquency and drug use items from the Self-Report of Delinquency (SRD; Elliot, Huizinga, & Ageton, 1985). Items 1-10, 13-16, 20-26, 28, 36 comprised the delinquency variable and items 30-35 comprised the drug use variable (see Table 5 for means and standard deviations).

To test Hypothesis 3, univariate analyses of variance (ANOVAs) were conducted to compare the six cluster groups of adolescents on the eight self-report and five teacher-report variables. Use of a multivariate analysis (i.e. MANOVA) was considered; however, the dependent variables within the three general domains (underlying processes, internalizing symptoms, and externalizing symptoms) were separate enough that it was felt a MANOVA was not warranted. Covariate analyses (i.e., ANCOVAs) were also considered and correlations

between age and race and the dependent variables were examined (see Table 6). These correlations showed that age was correlated with five variables (self-reported sensation seeking, drug use, and delinquency, and teacher-reported ADHD and depression) and race was correlated with one variable (sensation seeking). However, these correlations were relatively small, and age and race were not correlated with the majority of the other variables. Nevertheless, ANCOVAs were conducted in an exploratory manner, and they yielded results that were highly consistent with the ANOVA results. Therefore, the original ANOVA results are presented as the focus of interpretation.

Overall ANOVAs were significant for all eight self-report variables and two teacher-report variables (see Table 7). However, in order to test Hypothesis 3, it was necessary to determine which groups differed and which did not. Therefore, post hoc analyses were conducted using the Tukey honestly significantly different (HSD) test to conduct comparisons between all pairs of group means. Results indicated that for each of the three domains, youth in the aggressive clusters scored significantly higher than did youth in the average clusters (see Table 7 for all comparisons). Specifically, boys high in both relational and overt aggression (RA/OA boys) demonstrated significantly higher rates of psychopathy, depression, conduct disorder symptoms, ADHD symptoms, delinquency, and drug use than their nonaggressive peers (based on self-report). RA/OA boys were also higher on self-reported depression and conduct disorder symptoms than boys high in relational aggression (RA boys). Further, girls high in relational aggression (RA girls) demonstrated significantly higher rates of self-and teacher-reported psychopathy and self-reported ADHD symptoms than girls with average aggression scores. Finally, boys high in overt aggression (OA boys) demonstrated significantly higher rates of psychopathy (self and teacher-reported), ADHD (teacher-reported), sensation seeking, and

delinquency than their nonaggressive peers, and exhibited higher rates of conduct disorder symptoms than RA boys and RA girls (see Table 7).

As predicted, no significant differences (based on both self and teacher-report) were found between the RA girls and the OA boys for the three domains, with the exception of conduct disorder symptoms (see Table 7). No significant differences were found between any of the aggressive groups (RA girls, OA boys, RA boys, and RA/OA boys) for psychopathy and sensation seeking. For internalizing symptoms, no significant differences were found between the RA girls, the OA boys, and the RA/OA boys for depression. However, as stated above, RA/OA boys were higher than RA boys for this variable. For anxiety, no differences were found between any of the groups. For externalizing symptoms, the RA/OA boys were significantly higher than the RA girls for delinquency, but no differences were found between the RA girls, the OA boys, and the RA boys for this variable. For drug use, the RA/OA boys were higher than the RA boys and the RA girls, but no differences were found between the RA girls, the OA boys, and the RA boys. For ADHD, significant differences were not found between any of the four aggressive groups. Finally, for conduct disorder, OA boys were higher than RA girls and RA boys, but not different from RA/OA boys (see Table 7).

Overall these results suggest that, while differences in social-psychological adjustment exist between certain aggressive groups for certain variables, significant differences do not exist between girls high in relational aggression, boys high in overt aggression, and in some cases, boys high in relational aggression. Specifically, these groups do not appear to differ on measures of psychopathy, sensation seeking, delinquency, drug use, ADHD, depression, and anxiety. The only significant difference found between these groups was in the area of conduct disorder, with OA boys scoring higher than RA girls and RA boys.

Table 7

Mean Cluster Group Scores and F Values for Three Domains of Social-Psychological Functioning

Domain	Girls		Boys				Omnibus F (N= 197)
	Average (n = 91)	High RA (n = 20)	Average (n = 55)	High RA (n = 13)	High OA (n = 11)	High Both (n = 7)	
<u>Underlying Processes</u>							
CPSY	11.87 (5.00)	15.72 (4.65) _b	13.26 (4.52)	15.38 (3.80)	17.60 (2.22) _b	19.16 (4.96) _{a, b}	7.39***
TPSY	7.03 (6.21)	12.13 (6.66) _b	9.47 (6.48)	12.08 (7.22)	16.26 (10.31) _{a, b}	10.05 (3.60)	5.78***
CSS†	-0.61(1.85)	-0.36 (1.80)	0.56 (1.39) _b	0.37 (1.63)	0.97 (1.09) _b	0.94 (1.53)	5.12***
<u>Internalizing Symptoms</u>							
CANX†	-0.22 (2.11)	0.99 (2.67)	-0.49 (2.24)	0.58 (1.84)	-0.24 (1.99)	1.78 (3.61)	2.53*
TANX†	-0.15 (1.74)	0.29 (2.25)	-0.10 (1.37)	-0.07 (1.53)	0.58 (1.90)	1.13 (1.59)	1.17
CDEP†	0.02 (1.80)	0.51 (2.27)	-0.28 (1.50)	-0.46 (1.21)	-0.18 (1.38)	1.89 (2.12) _{a, c}	2.50*
TDEP†	-0.03 (2.02)	0.41 (1.87)	-0.13 (1.21)	-0.34 (0.90)	-0.01 (0.89)	0.01 (0.83)	0.40
<u>Externalizing Symptoms</u>							
CCD	0.69 (1.24)	1.36 (1.75)	1.84 (3.02)	0.69 (0.75)	5.82 (5.51) _{a, b, c, d}	4.16 (2.65) _{b, c}	12.04***
TCD	0.16 (0.70)	0.20 (0.52)	0.28 (0.74)	0.08 (0.28)	0.50 (1.36)	0.00 (0.00)	0.74
CADHD	3.70 (3.58)	6.86 (4.01) _{a, b}	3.50 (3.30)	4.29 (3.75)	3.92 (3.23)	7.82 (5.77) _{a, b}	4.31**

(Table 7 continued)

TADHD	0.90 (2.40)	2.40 (4.27)	2.31 (3.59)	4.23 (5.26) _b	4.91 (5.52) _b	4.14 (3.44)	5.18***
CDEL	3.00 (2.87)	4.49 (2.91)	3.92 (3.43)	4.39 (3.75)	7.94 (6.67) _{a, b}	8.96 (6.07) _{a, b, d}	7.11***
CDRUGS	0.44 (0.75)	0.37 (0.60)	0.56 (1.18)	0.52 (1.34)	0.91 (0.83)	2.13 (2.44) _{a, b, c, d}	3.60**

Note. The Tukey HSD procedure was used to determine group differences. Interpret subscripts as follows: a = group mean significantly higher than boy average; b = group mean significantly higher than girl average; c = group mean significantly higher than boy RA; d = group mean significantly higher than girl RA; no subscripts = no significant differences between groups in that row. RA = relational aggression; OA = overt aggression; C= Child-report; T = Teacher-report; PSY = psychopathy; SS = sensation seeking; ANX = anxiety; DEP =depression; CD = conduct disorder; ADHD = attention deficit-hyperactivity disorder; DEL= delinquency; DRUGS = drug use.

†- means for these variables are based on z scores.

* p < .05; ** p < .01; *** p < .001.

Discussion

The results of the current study provide support for the hypothesis that relational aggression in girls does not differ from overt aggression in boys in terms of social-psychological adjustment problems. Specifically, these results show that relationally aggressive girls and overtly aggressive boys do not differ significantly in terms of measures of underlying processes (e.g., psychopathy and sensation-seeking), internalizing symptoms (e.g., depression and anxiety) and externalizing symptoms (e.g., ADHD, delinquency, and drug use). However, boys high in both types of aggression as well as boys high in overt aggression only exhibit significantly higher rates of these problems than their nonaggressive peers. Overall, these findings suggest that youth who exhibit relational and overt aggression show higher rates of social-psychological maladjustment when compared to nonaggressive youth. Moreover, it appears that “female” types of aggression (i.e., relational aggression) and “male” types of aggression (i.e., overt) are not different with respect to social-psychological adjustment problems.

This study sought to examine the construct of aggression in adolescents in three ways. First, we wished to determine the structure of aggression in a sample of adolescents based on their self-report. Crick (1996) found support for three factors (prosocial behavior, relational aggression, and overt aggression) based on factor analysis of a teacher measure of children’s behavior. Crick’s teacher measure was adapted for use in the current study as a self-report measure of aggressive and prosocial behavior. In order to determine whether the structure of this measure was the same as that of the teacher measure, as well as to determine whether youth could accurately distinguish between overt and relational aggression, a factor analysis was

conducted. The results of this analysis yielded a three-factor structure, similar to that of Crick. However, two of the factors seemed to represent overall aggression, as they consisted of a mixture of relational and overt aggression items. Distinct factors did not emerge for relational and overt aggression. Therefore, relational and overt composite scores based on Crick's initial analysis were used for all further analyses.

Teacher-report of aggression was also evaluated in this study in order to (a) replicate Crick's previous analysis, and (b) determine whether the teachers could accurately report on relational and overt aggression in this sample. The results of the factor analysis of the teacher RCSB yielded a two-factor solution: (1) overall aggression, and (2) prosocial behavior. This analysis did not replicate Crick's previous analysis of the teacher CSBS due to the fact that 10 out of 11 of the aggression items (both relational and overt) loaded onto a single factor. These results suggest that teachers in this study may not be able to distinguish between relational and overt aggression in adolescents. Instead, they may perceive any type of harmful behavior, be it physical fighting or social manipulation, as "aggression."

The second objective of this study was to determine how adolescents' levels of relational and overt aggression formed groups according to gender. Using composite relational and overt aggression scores derived from the scales formed by Crick's (1996) original factor analysis, adolescents were classified in one of two ways. The first cluster analysis was conducted on boys and girls separately in order to identify groups of children who were considered aggressive relative to their same-sex peers. Using this method, we were able to identify eight groups of adolescents with differing levels of relational and overt aggression. However, we felt that this method resulted in groups of adolescents who were elevated in aggression, but significantly different from groups of the opposite sex with the same label. Therefore, as we were interested in

identifying adolescents who exceeded an absolute level of aggression as compared to their overall peer group, we conducted a second cluster analysis with the entire sample.

The second cluster analysis supported the hypothesis that adolescents with differing levels of relational and overt aggression (based on overall mean scores for RA and OA for the sample) formed different cluster groups according to gender. This analysis yielded six groups of boys and girls with different aggressive profiles (two groups with $n = 1$ were not considered in the analyses). Five of these groups were consistent with Hypothesis 2, while one group (high RA boys) was not hypothesized. As expected, a group of boys who were elevated on both relational and overt aggression emerged. Further, a group of girls high in relational aggression and average in overt aggression and a group of boys high in overt aggression and average in relational aggression emerged. Finally, groups of boys and girls with average scores on both types of aggression emerged. The only group that emerged that was not hypothesized was a group of boys high in relational aggression and average in overt aggression. Although previous studies have found boys to be higher in relational aggression than girls (Henington et al., 1998; Tomada & Schneider, 1997), boys in these studies were higher in overt aggression as well. Therefore, this group of boys high in relational aggression only was not hypothesized to exist.

The third purpose of the current study was to compare groups of aggressive youth on measures of social-psychological adjustment. Based on the results of the cluster analysis, four aggressive groups and two nonaggressive groups were identified. Overall, the current results showed that the overtly and overtly/relationally aggressive boys were higher than the nonaggressive boys on all indices of maladjustment, while the relationally aggressive girls were higher than nonaggressive girls for psychopathy and ADHD symptoms. Of specific interest was the lack of difference between the aggressive groups themselves. As stated above, results

indicated that overtly aggressive boys did not differ from relationally aggressive girls in terms of depression, anxiety, psychopathy, sensation-seeking, ADHD, delinquency, and drug use. Results also indicated that the unexpected group, relationally aggressive *boys*, was not different from overtly aggressive boys and relationally aggressive girls in terms of social-psychological adjustment. Due to the unexpected nature of this group, and the fact that past research has not supported the existence of such a group, very little information concerning its association with social-psychological maladjustment is available. As stated above, several studies have found groups of boys who exhibited high rates of relational aggression (Henington et al., 1998; Rys and Bear (1997); Tomada & Schneider, 1997). However, boys who were high in relational aggression in these studies were also high in overt aggression. The existence in the current study of a group of boys high in relational aggression *only* suggests the need to consider such types of traditionally “female” aggression when examining the construct of aggression in boys. This need becomes even greater in light of the findings of the present study, which suggest that, similar to overtly aggressive boys and relationally aggressive girls, these boys showed higher rates of social-psychological maladjustment than did nonaggressive youth.

An interesting finding with regard to the groups formed by the cluster analysis concerns the group of boys high in both relational and overt aggression. While this group was small ($n = 7$), they demonstrated significantly higher rates of social-psychological problems than the average groups and many of the aggressive groups. This finding may have particular importance for intervention and prevention programs aimed at aggressive youth. It may be that youth who engage in high rates of both types of aggression are at a higher risk for psychopathology than youth who display only one type of aggression. Future research with larger samples of RA/OA youth is needed in order to explore this issue.

Findings from this study add important information to existing research on aggression in children and adolescents. Results based on comparisons between aggressive groups are consistent with past research that has examined the relation between aggression and social-psychological adjustment. Several researchers have found that both overt and relational aggression are associated with internalizing problems such as depression and anxiety (Crick, 1996; Crick, 1997; Crick et al., 1997; Prinstein et al., 2001), externalizing disorders such as Conduct Disorder and ADHD (Coie & Dodge, 1983; Coie et al., 1992; Crick, 1997), and other problems such as delinquency (Lochman & Wayland, 1994), and psychopathy (see Edens et al., 2001, for a review). However, the results of the current study add significant information to findings from past research. Specifically, since this study examined relational aggression in girls as compared to overt aggression in boys, unique information was obtained regarding these two groups. For example, while past studies have found that relational and overt aggression are associated with internalizing problems (Crick, 1996; Crick, 1997; Crick et al., 1997; Prinstein et al., 2001), few studies, if any, have examined the association between relational aggression and externalizing problems and psychopathy. The present study examined these associations, and found that relationally aggressive girls exhibited higher rates of externalizing problems such as ADHD, as well as higher rates of psychopathy. Further, this group of girls did not differ from overtly aggressive boys in their rates of the above types of social-psychological problems.

While relationally aggressive girls and overtly aggressive boys did not differ on almost all measures of social-psychological adjustment, it was found that overtly aggressive boys were significantly higher on conduct disorder symptoms than both relationally aggressive girls and boys. This may be due to the fact that the criteria for conduct disorder include several overtly aggressive behaviors such as bullying, threatening, physical fighting, use of weapons, and cruelty

to people and animals. These results are consistent with past research that has found an association between overt aggression and serious conduct problems (Coie & Dodge, 1983; Coie et al., 1992; Crick, 1997).

Limitations

There are several limitations to the current study that will need to be addressed in future research. One limitation was the differential cell sizes of the cluster groups. Some of the groups had relatively large numbers of cases assigned to them while other had very few. Small cell sizes may have affected the results of our comparisons between groups. With consistently larger groups, significant differences may have been found between relationally aggressive girls and overtly aggressive boys, thus refuting our hypotheses.

A second limitation to the current study is related to the ethnic breakdown of our sample. Past research using similar measures of relational and overt aggression has been conducted on primarily Caucasian middle-class samples. The current sample consisted predominantly of African-American children from a low-income area. This overrepresentation may have affected our results, particularly the results of the factor analyses, in that the structure of aggression may be different for different minority groups. Further research with ethnically diverse samples is needed to examine this issue.

A third limitation to the current study concerns our reliance on self-report in measuring aggression. While past research has shown that children can be accurate reporters of their own behaviors, including delinquent and violent behaviors (e.g., Huizinga, 1991) and affective, interpersonal, and behavioral deficits such as those associated with psychopathy (e.g., Caputo, Frick, & Brodsky, 1999; Silverthorn, Frick, & Reynolds, 2001), initial investigations of self-report of relational aggression have found mixed results (Bjorkqvist et al., 1992a; Bjorkqvist,

Osterman, & Kaukiainen, 1992c, Lagerspetz et al., 1988; Pakaslahti & Keltikangas-Jarvinen, 2000). Therefore, further research is needed in this area in order to determine whether or not youth *can* accurately report on these types of aggression. Moreover, parent and teacher data should be utilized whenever possible to obtain more accurate descriptions of children's aggressive behavior, although these reports, particularly parent and teacher-report of relational aggression, need to be compared to peer nominations.

Related to the issue of self-report is the use of the RCSB to measure aggression in this sample. As stated previously, the RCSB was developed for use in this study by adapting Crick's (1996) initial teacher-report instrument into a self-report format. Previous research has not used this instrument as a self-report measure; therefore, information on the psychometric properties of the RCSB is limited to this study. While internal consistency for the three subscales of the self-report measure was sufficient in this study (alphas ranged from .69 to .70), it was much lower than that reported by Crick for the teacher measure (alphas ranged from .93 to .94). Therefore, due to the limited information available concerning the reliability and validity of the self-report RCSB, results based on this measure should be interpreted with caution. Future research should focus on comparing this type of self-report measure to peer nomination measures of aggression in order to determine the accuracy of self-report in describing the aggressive behavior of children.

A final possible limitation to the current study concerns the fact that both aggression and social-psychological adjustment measures were completed by the youth themselves. Therefore, it is possible that the significant results found could be attributed to shared method variance. However, this seems unlikely due to the fact that a number of teacher ratings of adjustment were also significant, with the exception of internalizing symptoms, at which teachers have been

considered to be unreliable raters (Kamphaus & Frick, 2002), and conduct disorder symptoms, which teachers rated as having a very low base rate in this study.

Implications and Directions for Future Research

Based on the results of this study, it is clear that both boys and girls engage in aggressive behavior, and that groups who differ on level, type of aggression, and gender can be identified. Further, these findings suggest that both types of aggression (i.e., relational and overt) are related to social-psychological maladjustment. Results from comparison analyses indicate that relationally aggressive girls and overtly aggressive boys do not differ significantly in terms of internalizing problems such as anxiety and depression, externalizing and behavior problems such as delinquency, drug use, and ADHD, and underlying processing problems such as psychopathy and sensation-seeking. Moreover, *boys* high in relational aggression also show higher rates of these problems than nonaggressive youth.

These results have several implications for future research into the area of childhood aggression. First, these findings suggest that relational aggression is very similar to overt aggression in terms of negative social-psychological adjustment. This pattern holds for relationally aggressive girls and boys as well as overtly aggressive boys. Based on these results, future research should refrain from the gender-labeling of aggressive behavior, and focus instead on the level of severity of *either* type of aggression as an indicator of future maladjustment. By conceptualizing certain types of aggression as “male” types and certain types as “female” types, important information about the real ways in which youth behave aggressively may be missed. Therefore, an entirely new way of conceptualizing aggressive children may be necessary in order to further research in this area. Secondly, this study found that boys who were high in both types of aggression reported a higher rate of social-psychological problems than other aggressive and

nonaggressive groups. These findings suggest the need identify these youth as early as possible as they may constitute a special risk category.

A third implication of these results concerns the measurement of aggression in children and adolescents. Relational and overt aggression were measured in this study using an unstandardized self-report measure with few items and limited psychometric information. In order to reliably and validly assess the construct of aggression in youth, standardized, psychometrically sound measures must be developed. Future research should focus on testing new measures in order to determine their accuracy in subtyping aggressive behavior in children.

Summary

The main purpose of this study was to examine the construct of aggression in youth. Specifically, we wished to determine whether relational aggression in girls and overt aggression in boys represented gender-specific manifestations of the same underlying aggressive tendency. A first step in answering this question involved the formation of different aggressive groups based on gender. Grouping analyses led to the formation of our main groups of interest: relationally aggressive girls and overtly aggressive boys. These groups were then compared on several indices of social-psychological adjustment. While significant differences were found between these groups and the nonaggressive groups, no differences were found between the groups themselves on measures of depression, anxiety, psychopathy, delinquency, drug use, sensation seeking, and ADHD. These results suggest that relationally aggressive girls and overtly aggressive boys are not different with regard to several adjustment variables, which supports the idea that relational and overt aggression are different manifestations of the same underlying aggressive tendency. Further, both types of aggression are associated with social-psychological maladjustment in boys and girls. This finding highlights the need for future research to focus on

both types when conceptualizing aggression in children, regardless of their gender. These results add new information to our understanding of the aggressive behavior of children and adolescents, and have several important implications for future research in this area.

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Appendix

UNIVERSITY OF NEW ORLEANS
COMMITTEE ON THE USE OF HUMAN SUBJECTS

Form Number: 11DEC00 (please refer to this number in all future correspondence concerning this protocol)

Principal Investigator: Persephanie Silverthorn, Ph.D. Title: Graduate Student

Department: Psychology College: Science

Name of Faculty Supervisor: _____ (if PI is a student)

Project Title: Antisocial behaviors in school-age girls and boys: Further evaluation of the delayed-onset trajectory.

Date Reviewed: December 4, 2000

Dates of Proposed Project Period: From 12/00 to 12/01*

*approval is for one year from approval date only and may be renewed yearly.

Note: Consent forms and related materials are to be kept by the PI for a period of three years following the completion of the study.

☐ Full Committee Approval

☐ Expedited Approval

☐ Continuation

☐ Rejected

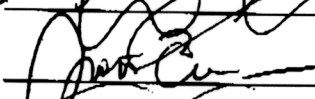
☒ The protocol will be approved following receipt of satisfactory response(s) to the following question(s) within 15 days:

Child/Adolescent Assent needs to be in more "plain" English
Wrong pronouns used in Child/Adolescent Assent form

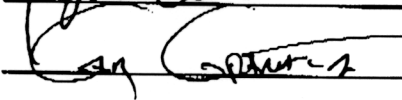
Committee Signatures:



Matthew S. Stanford, Ph.D. (Chair)

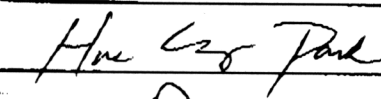


Scott Bauer, Ph.D.

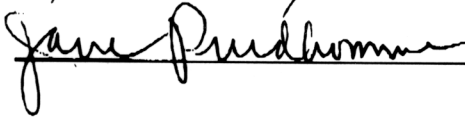


Gary Granata, Ph.D.

Betty Lo, M.D.

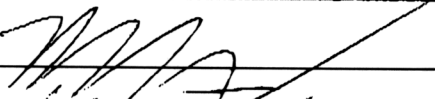


Hae-Seong Park, Ph.D.

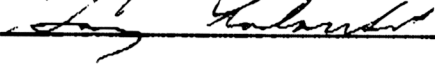


Jane Prudhomme

Jayaraman Rao, M.D. (NBDL protocols only)



Richard B. Speaker, Ph.D.



Gary Talarchek, Ph.D.

Vita

Monica A. Marsee was born in Monroe, Michigan and received her B.A. from the University of Alabama in 1999. After graduating from college, she spent a year in New York City working on an NIH grant studying caregivers with AIDS and their children. She then returned to Alabama and spent a year coordinating an NIA grant studying depression and quality of life in a rural elderly population. She currently attends the University of New Orleans, where she recently received her M.S. degree in Applied Developmental Psychology and is working towards her doctorate. Her research interests include aggressive and antisocial behavior in girls in community and correctional settings.

THESIS EXAMINATION REPORT

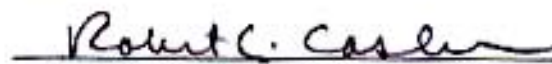
CANDIDATE: Monica Marsee

MAJOR FIELD: Applied Developmental Psychology

TITLE OF THESIS: Relational and overt aggression in youth:
Same aggressive tendency, different manifestations?

APPROVED:


Major Professor & Chair


Dean of the Graduate School

EXAMINING COMMITTEE:





DATE OF EXAMINATION: 7/23/03