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The Dissertation Committee for Clayton Joseph Egli certifies that this is the final approved version of the following electronic dissertation: "The Psychosocial Effects of Being Rejected/Being Aggressive/Being Respected."

Robert Cohen, Ph.D.
Major Professor

We have read this dissertation and recommend
its acceptance:

Gilbert Parra, Ph.D.

Sam B. Morgan, Ph.D.

David Houston, Ph.D.

Accepted for the Graduate Council:

Karen D. Weddle-West, Ph.D.
Vice Provost for Graduate Programs

THE PSYCHOSOCIAL EFFECTS OF BEING REJECTED/BEING
AGGRESSIVE/BEING RESPECTED

by

Clayton Joseph Egli

A Dissertation

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

Major: Clinical Psychology

The University of Memphis

December 2010

Dedication

To Andrea and our family

For encouragement when needed,
laughter when unexpected, and
love when present to experience it

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To my parents, Jim and Mary, and sister, Kesley, for showing me the way.

ABSTRACT

Egli, Clayton Joseph, Ph.D. The University of Memphis. December 2010. The Psychosocial Effects of Being Rejected/Being Aggressive/Being Respected. Major Professor: Robert Cohen, Ph.D.

This research identified groups of children using levels of aggression, rejection, and respect. Peer psychosocial outcomes were evaluated in groups of third- through sixth-grade children ($N = 422$). Four sets of analyses were performed. Groups were defined first by traditional grouping methods and then by data-driven grouping methods. For each method, groups were constructed first in terms of the traditional approach using relative levels of peer rejection and aggression (overt and relational). A second set of analyses for each method constructed groups in terms of relative levels of peer rejection, aggression (overt and relational), and respect by peers. Psychosocial outcomes included measures of self-perceived global competence, self-perceived social competence, self-perception of loneliness, and overall positive perception of peers. Results revealed the universal presence of two distinct groups of children for both traditional and data-driven grouping methods when considering aggression and rejection; a group low in aggression and low in rejection and a group high in aggression and high in rejection. Similarly, the inclusion of respect as a grouping variable yielded two universal groups for traditional and data-driven methods (i.e., low aggression/low rejection/high respect versus high aggression/high rejection/low respect), regardless of aggression type. Findings indicated worse psychosocial outcomes for children who were relatively high on both aggression and rejection. When respect was included as a grouping variable, group differences in psychosocial outcomes generally were not identified.

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The Psychosocial Effects of Being Rejected/Being Aggressive/Being Respected

Peer relations become increasingly relevant for children's adjustment as they move through elementary school (see Rubin, Bukowski, & Parker, 2006). Not surprisingly, then, a great deal of attention has been paid to the identification of circumstances that are associated with poor peer relations. Heading the list of these circumstances would be the examination of peer rejection and the examination of exhibiting aggressive behaviors. As noted below, the negative outcomes associated with these conditions have been extensively documented. Despite these well-documented negative social consequences, it is reasonable to assume not only a) that a fair degree of variability exists among children characterized this way, but also b) other, positive characteristics may serve to moderate the negative consequences.

The primary goal of the present research was to identify groups of children based on level of aggression, rejection, and respect and evaluate group outcomes. A second goal was to evaluate how being respected by peers affects the prediction of group outcome variables. The remainder of the Introduction provides a review of relevant literature of peer rejection, aggression, the combination of rejection and aggression, peer respect, and a discussion of traditional and data-driven analytic strategies, followed by an elaboration of the nature of the present research.

Peer Rejection

Peers become increasingly important in the social lives of children through elementary school (see Rubin et al., 2006). For example, children place increasing importance on the role of peers for support, companionship, and intimacy (Buhrmester &

Furman, 1987; Furman & Buhrmester, 1992). Poor peer relations can have adverse, enduring developmental consequences. Using retrospective data, Ambert (1994) found that 25% of college students indicated that their negative peer experiences in childhood had long-lasting, detrimental effects on them, including elevated levels of anxiety, depressed mood, academic difficulties, low self-esteem, and physical ailments. Perhaps the most widely studied form of children's poor peer relations has been being actively disliked by peers, termed "peer rejection" (see Bierman, 2004; Parker & Asher, 1987; Rubin et al., 2006).

Sociometric procedures, such as those developed by Coie, Dodge, and Coppotelli (1982), have been used to identify children's social status (e.g., rejected, popular, average, neglected, controversial). The category of rejection refers to those children who received a high level of disliking nominations from peers and a low level of liking nominations. Thus they can be distinguished from "neglected" children (who received low levels of both disliking and liking nominations) and from "controversial" children (who received high levels of both disliking and liking nominations). In short, rejected children can be considered as highly socially visible and actively disliked and rejected.

Rejection by the peer group has been found to relate to serious, chronic psychosocial difficulties, such as increased depression and anxiety (e.g., Davidson & Demaray, 2007), withdrawal and aggression (e.g., Bierman & Wargo, 1995), victimization by peers (see Rubin et al., 2006), and decreased school and social competence (e.g., Verschueren & Marcoen, 2002). Research on children's perceptions has also found rejection to relate to less favorable views of the self and same-aged peers

(e.g., Salmivalli & Isaacs, 2005; Sundermier Clark, 2007). Regarding self-perceptions, Verschueren and Marcoen (2002) found that rejected and non-aggressive third- and fourth-grade children reported significantly lower feelings of global self-worth compared to more popular children. Support for a relation between rejection and negative social perception was found in a group of 11- through 13-year-old children, where greater rejection by peers in the middle of the school year predicted more negative perceptions of their peers towards the end of the school year (Salmivalli & Isaacs, 2005).

More global social-emotional variables, such as the experience of feeling lonely, have been found to be associated with peer rejection in childhood. Pedersen, Vitaro, Barker, and Borge (2007) found that rejection in middle childhood (roughly 10-year-olds) was the most significant predictor of feelings of loneliness in early adolescence. This relation between peer rejection and loneliness, however, has also been found to be partially mediated by self perceptions of personal global competence and social competence (Ladd & Troop-Gordon, 2003). Further study on rejection and related variables is warranted to establish a clearer understanding of these relations and processes.

Rejected children are frequently found to be disruptive, and often employ aggression, and other negative behaviors (Newcomb, Bukowski, & Pattee, 1993). However, not all rejected children behave aggressively (Bierman, Smoot, & Aumiller, 1993). Other child behaviors, such as withdrawal, shyness, and timidity, are also associated with rejection, and comprise approximately 10-20% of the rejected group (see Rubin et al., 2006). Researchers, such as Bierman and Wargo (1995), emphasized the

importance of understanding and clearly identifying subtypes of rejection (e.g., aggressive-rejected, withdrawn-rejected) to help determine developmental outcomes and employ appropriate modes of treatment.

Aggression

Aggression is generally defined as the use of behaviors with the intent to harm another person. Children who display elevated levels of aggression are also significantly more at risk for developing other kinds of psychosocial difficulties. Aggression in childhood has been found to be positively related to peer rejection (e.g., Bierman & Wargo, 1995), ADHD, deviancy/conduct problems (e.g., Miller-Johnson, Coie, Maumary-Gremaud, & Bierman, 2002), lower academic performance, increased depression, anxiety, and low self-esteem (see Bierman, 2004; Rubin et al., 2006). Subtypes of aggression, such as overt and relational, have emerged as distinct forms of aggression and account for unique variance in some developmental outcomes (Crick & Grotpeter, 1995; Crick & Grotpeter, 1996; Rubin et al., 2006). Overt aggression is defined as direct behaviors intended to cause harm to an individual, such as hitting, kicking, pushing, and yelling. Relational victimization is defined as the use of social relationships to produce harm (Cullerton-Sen & Crick, 2005), such as spreading rumors or excluding individuals from group activities.

Children's perceptions are important for our understanding of aggression and related outcomes. Aggression has been found to relate to self-perceptions (e.g., Chen, He, & Li, 2004; Diamantopoulou, Rydell, & Henricsson, 2008), and more specifically, perceived self-worth or global competence. Low, perceived global self-

worth/competence has been related to elevated levels of aggression in both a sample of 12-year-old American children (Diamantopoulou et al., 2008) and a sample of 12-year-old Chinese children (Chen et al., 2004). Similar to research on rejection and perceptions/views of peers, the pairing of aggressive behavior and a child's general perception of peers has received limited or no attention.

The experience of loneliness has received significant attention in its relation to childhood aggression. Coplan, Closson, and Arbeau (2007) noted that the experience of loneliness in kindergarten was correlated with greater aggressive behavior. Similar results were also found for samples of older children. In a sample of Chinese children (mean age of 10 years), greater levels of reactive aggression was found to relate with greater self-reported loneliness (Xu & Zhang, 2008). Results such as these indicate the importance of measuring childhood aggression and highlight the value of distinguishing the type of aggression displayed in children's interactions. The current study analyzes both overt and relational types of aggression in relation to rejection status, respect nominations, self-reported loneliness, global self-worth, self-perceived social acceptance, and one's general perceptions of peers.

Aggressive, Rejected, and Aggressive-Rejected Children

Aggressive behavior has been identified as being an important contributor to peer rejection and as having negative social consequences (see Bierman & Wargo, 1995; Rubin et al., 2006; Verschueren & Marcoen, 2002; Wood, Emmerson, & Cowan, 2004). Approximately 50% of rejected children are also aggressive; conversely, approximately 50% of aggressive children are also rejected (Bierman et al., 1993; Cillessen, van

IJzendoorn, van Lieshout, & Hartup, 1992; Coie, Belding, & Underwood, 1988).

Research suggests that the joint occurrence of peer rejection and aggressive behaviors, aggressive-rejected children, is a unique risk factor for serious maladjustment (e.g., Bierman & Wargo, 1995). Bierman et al. (1993), for example, found that aggressive-rejected boys (first through fourth grade) were more physically aggressive, inattentive, disruptive, and argumentative than their aggressive, non-rejected counterparts.

By middle childhood the frequency of aggression decreases (or at least changes form; see Coie, Dodge, & Lynam, 2006), and those children who continue to display elevated levels of aggressive behavior are at risk for psychosocial difficulties (Bierman, 2004). Chronic aggression and behavior problems have been linked to a unique combination of highly aggressive behavior with rejection by peers (Bierman & Wargo, 1995). The unfortunate result of being both aggressive and rejected led to stability in aggressive and disruptive behaviors, significant deficits in prosocial behaviors and social preference, and continuing peer rejection (Bierman & Wargo, 1995). The authors found that children who were aggressive and non-rejected were characterized by chronic aggression, but did not suffer concurrent social difficulties. Miller-Johnson et al. (2002) proposed that since aggressive children are generally more impulsive and inattentive they also may be the ones to provoke conflict by disrupting others' activities in the classroom. Because of this disruptive behavior, their peers get irritated and reject the child, and the child is prone to getting in non-goal-oriented clashes. Bierman (2004), Wood et al. (2004), and others argue that these behaviors that are more impulsive, disruptive, and

dysregulated are more frequently found in children who are nominated as both aggressive *and* rejected, rather than one or the other.

Previous studies, however, tend to focus on more overtly and physically aggressive behaviors, without much detail in defining the type of aggression being measured. At this time, less is known about relational (or social) aggression, specifically, and its relation to peer rejection. Child researchers typically report relations between relationally aggressive behavior and peer rejection (Crick, 1996; Crick & Grotpeter, 1995, Heilbron & Prinstein, 2008). Relationally aggressive children have been found to be more disliked by their peers (Crick & Grotpeter, 1995), regardless of gender. Crick (1996) revealed that boys' and girls' levels of relational aggression were positively related to future rejection by peers one month later. Additionally, concurrent teacher-reported levels of relational aggression predicted girls' future rejection and were inversely related to girls' future peer acceptance. Ambiguity, however, is also found in research on relational aggression and its link to maladaptive vs. adaptive outcomes (Heilbron & Prinstein, 2008). For example, Vaillancourt (2005) has suggested that individuals who engage in social aggression may be accepted by most peers and rejected by their victims. With the exception of the current study, specific groups of children who may be both relationally aggressive and rejected have largely gone unstudied in previous research.

However, it seems that children are rejected for reasons other than conduct/regulation problems and aggression, such as not fitting in or being atypical. These rejected, non-aggressive children experience psychosocial difficulties, but to a

lesser extent than children who act aggressively. Perhaps these “odd” flaws that led to rejection may not be strong and pervasive like childhood behavior problems, and after time the child may learn to behave differently or find a peer group they fit in with. Bierman and Wargo (1995) discuss that it is important for researchers to consider subtypes of rejected children, as these subtypes produce different developmental outcomes. Miller-Johnson et al. (2002) asserted that, for boys, rejection and aggression together forecast a greater range of uncontrolled, externalizing behavior problems (i.e., aggression, disruptive behavior, prosocial deficits). Less is known about such interactions in girls since they engage in significantly less physical aggression, but the authors suggested that both peer rejection and aggression may lead to higher parent-rated and self-reported externalizing problems. The present study evaluated different subgroups of children based on their combination of aggression and rejection status. As noted, the peer and social consequences of this categorization was examined in relation to peer respect.

Respect

The general concept of respect can be loosely defined and is often understood to mean different things, depending on the context of its use. Hsueh, Zhou, Cohen, Hundley, and Deptula (2005) examined how children in China and the U.S. defined the term “respect.” Specific to the U.S. sample, results indicated that these children primarily conceived of respect in terms of reciprocity between two individuals. Given the current sample of U.S. children, this definition was likely to be the shared definition of “respect” amongst children in the current study.

The concept of respect as an influential variable in childhood development has received limited attention, until recently. Few studies have attempted to link respect with peer difficulties and/or aggressive behavior. Cohen, Hsueh, Zhou, Hancock, and Floyd (2006) reported significant positive correlations between peer nominations for liking, respect, and social competence for a sample of both U.S. and Chinese third- through sixth-grade children. Additionally, respect was found to mediate the relation between measures of social competence and peer liking (Cohen et al., 2006). That is, social competence measures were related to peer liking through their relation to peer respect. Social competence has also been found to negatively relate to peer rejection (Lansford et al., 2006; Volling, MacKinnon-Lewis, Rabiner, & Baradaran, 1993). Based on these findings, and those of Cohen et al. (2006), respect by peers may also have an inverse relation to peer rejection.

Kuryluk (2008) evaluated relations between peer nominations of respect, aggression (overt and relational), and popularity (perceived and sociometric). This work replicated previous research generally finding a positive relation between aggression and perceived popularity (Who is popular?) and a negative relation between aggression and sociometric popularity (Who do you like?). In addition, it was found that aggression (both overt and relational, and for both boys and girls) was positively related to perceived popularity *only* if the child was also highly respected. Aggression was negatively associated with sociometric popularity *only* if the child was not highly respected.

Taken together, this research suggests that respect is associated with both aggression and peer group standing. It would seem that when children are respected, they

are likely to have better psychosocial outcomes, and often they will experience higher social standing regardless of gender or aggression type. It is reasonable to assume, therefore, that peer respect might play a significant role in the relation between aggression, rejection, and socio-emotional outcomes.

Traditional and Data-Driven Grouping Methods

Groups of children, based on relative levels of aggression, rejection, and respect were generated in two ways; traditional grouping method and data-driven grouping method. The first method, or traditional grouping method, is a commonly used process in developmental psychology to generate groups of children based on arbitrary, relative cut points (e.g., designating the highest 40% of scores as “high” and the lowest 40% of scores as “low”). Complementary to traditional grouping methods, data-driven groups can be generated using statistical models, such as through latent variable mixture modeling (LVMM; Muthén & Muthén, 1998-2007). When using LVMM, the data-driven groups are in large part determined by the researcher but decisions are primarily based on goodness of fit statistics, provided by the statistical software. Given that research on subtypes of children is largely new to developmental psychology (Laursen & Hoff, 2006), the current study used both methods of grouping (traditional and data-driven) to provide supplementary information regarding group membership and psychosocial outcome.

The Present Research

Aggression and peer rejection serve as markers of serious social maladjustment. Recent evidence supports the construct of respect as a predictive factor of psychosocial

outcomes. The research to date on aggression, peer rejection, and related outcomes for children has given limited attention to the role of respect as a moderating variable. The thesis of the present research is to learn how variability in groups and outcomes are affected by one's level of respect nominations for different profiles of aggression and rejection in children.

The present research initially examined group differences in outcome measures. Different grouping methods were utilized to examine aggression/rejection groups (e.g., high aggression with low rejection) and differences between groups based on particular psychosocial outcome scores (i.e., respect nominations, loneliness, self-perceived global competence, self-perceived social competence, and one's overall evaluation of the peer group). Subsequently, respect nominations from peers were included as grouping variables to alternatively determine group outcomes. As such, these groups were formed on relative levels of aggression, rejection, and respect, and differences in psychosocial outcomes were analyzed. These groups, or profiles, were determined by both traditional and data-driven approaches. In the traditional approach, children were assigned to predetermined groups, indicated previously, based on their scores relative to their classmates' scores. The second method determined groups statistically, by distinguishing common score profiles in the sample. Latent variable mixture modeling (LVMM; Muthén & Muthén, 1998-2007), characterizes natural similarities and differences among participants through group identification. Given the nature of LVMM, it was important to consider that the data-driven method of grouping children may yield substantially

different groups, including the possibility that this non-clinical sample may all fit an “average” profile and there may be no natural group separation.

Because of the compounding negative effect of the co-occurrence of rejection and aggression, it was hypothesized that high levels of respect would have little positive effect for children who were both aggressive and rejected. From Cohen et al. (2006), children’s group level of peer rejection was hypothesized to have an inverse relation with respect level. It was also predicted that the inclusion of respect may be associated with more positive outcomes for children in the Aggressive Only group (from Cohen et al., 2006; Kuryuk, 2008).

Research has indicated significant gender differences in psychosocial outcomes, particularly in the frequency of aggression and the type of aggression displayed. For example, when compared to boys’ aggressive behaviors, girls are significantly less likely to display verbal or physical aggression (Bierman, 2004). As such, different findings based on gender were expected and gender was included as either an independent variable or analyses were conducted separately for boys and girls. Using the traditional grouping approach, non-significant differences on social competence variables were predicted for girls between the Aggressive Only group and other groups. Commensurate with this logic, and given the non-clinical sample, it was anticipated that an Aggressive Only group for girls would not emerge using LVMM, the data-driven grouping approach.

Methods

Participants

Data for the current study were drawn from an ongoing longitudinal study examining the social development of children in a university affiliated elementary school in the Mid-South. The present study used data from 422 children (51.4% girls) from two non-overlapping cohorts (grades 3 through 6). Participants were primarily a middle-class sample, as evidenced by fewer than 20% of the children receiving any lunch subsidy, and came from diverse ethnic backgrounds (approximately 39% Black, 54% White, and 7% other ethnicities). There were 95 (22.5%) participants in third grade, 106 (25.1%) in fourth grade, 123 (29.1%) in fifth grade, and 98 (23.2%) in sixth grade.

Measures

Participants indicated which classmates they respected and provided behavioral nominations for overt aggression and relational aggression. Social preference nominations were used to determine participants' levels of rejection by classroom peers. Self-report measures were administered to assess participants' level of loneliness, perceived global competence, and perceived social competence. As a general index of children's liking of the peer group, children's sociometric liking ratings of classroom peers were collected. All raw scores were standardized by grade (converted to z-scores).

Respect. Participating children were asked to circle the names of classmates they respected on a classroom roster (unlimited nominations). Specifically, the question asked, "Who do you respect?" The number of respect nominations received were totaled for each child and standardized by grade.

Aggression. Each child's level of aggression was measured using The Revised Class Play procedure (Masten, Morison, & Pellegrini, 1985). Children were asked to pretend they were directing an imaginary play and must "cast" their classmates into certain roles. Classmates were "cast" into these roles by circling their names on a classroom roster. Unlimited nominations of /classmates (no self nominations) were allowed. In the present study, 13 items were of interest pertaining to two behavioral domains: Five relational aggression items (Crick & Grotpeter, 1995); five overt aggression items from Dodge and Coie (1987); and three overt aggression items from Masten et al. (1985). Adequate internal consistency has been demonstrated for the selected behavioral domains (coefficient alphas range from .81 to .96; Crick & Grotpeter, 1995; Dodge & Coie, 1987; Masten et al., 1985).

Rejection. Scores of social preference were generated for each child in the classroom via a method established by Coie et al. (1982). On a classroom roster, children indicated which students in their class (unlimited nominations) they liked least and, on a separate classroom roster, which students in their class they liked most (unlimited nominations). Total liking and disliking nominations for each child were each standardized by classroom and used to create social preference scores (standardized liking minus standardized disliking). Lower social preference scores were considered to be more indicative of peer rejection. All social preference scores were multiplied by -1 to reverse the value, allowing higher scores to indicate greater rejection. These scores were then standardized by grade.

Loneliness. The Asher, Hymel, and Renshaw (1984) loneliness questionnaire consists of 24 items (including eight filler items) designed to assess loneliness. Children responded to items on a 5-point Likert scale, according to “how true” the item was for the child. The measure was scored according to the procedure set forth by Asher et al. producing a single score. Internal consistency for the questionnaire, based on Cronbach’s alpha, has been reported as .90 (Asher et al.).

Perceived Global Competence and Social Competence. The Self-Perception Profile for Children (SPPC; Harter, 1985) is a 36-item self-report measure developed to assess different areas of self-concept. Items are divided into six categories: scholastic competence, perceived social competence, perceived global competence, athletic competence, physical appearance, and behavioral conduct. Of these six subscales, the present study used the perceived global competence and perceived social competence subscales. The SPPC was normed using 1,543 children in Colorado aged 3- to 8-years-old (Harter, 1985). According to Harter’s (1985) procedures, the measure has two parts. First, children pick which of two contrasting statements described them. For example, “Some kids are happy with themselves as a person BUT Other kids are often not happy with themselves as a person.” Second, they indicated whether the statement they chose was “sort of true for me” or “really true for me” thus resulting in a 4-point rating scale, with high scores reflecting a high social concept rating. Factor loadings of these dimensions have been shown to be sound, ranging from .594 to .962 (Shevlin, Adamson, & Collins, 2003). Adequate internal consistency for the SPPC has been demonstrated

(alphas ranged from .75 to .90; Harter, 1985; 1990). Test-retest reliability has been found to range from .40 to .65 using 1-month to 1-year intervals (Harter, 1990).

Perception of the Peer Group. New to this study, a variable was created to assess each child's average, global perception of classroom peers. On a class roster, children rated their classmates by circling a number (1 through 5) that best indicated how much they liked that child. Higher ratings were indicative of greater liking for that particular classmate. Each child's ratings of classmates were averaged and were used in the present study as a measure of the child's general liking of peers. Higher scores indicated a more positive view of peers.

Procedures

Permission for the research was granted by the University of Memphis Institutional Review Board (IRB) prior to data collection. All procedures were compliant with IRB standards and provisions. Graduate students from the Department of Psychology administered all study measures and were available to assist participants. Each data collection session was led by a graduate student, who verbally presented the directions, with one to three supportive undergraduate students to assist the participants in following directions, answering questions, and handing out and collecting measures. Measures were completed by participants in group format in their respective school classrooms or in the school library. Data collection for each class occurred over two 40-minute sessions. Care was taken to ensure confidentiality of responses and children were informed of their right to discontinue participation.

Results

Analyses

Preliminary analyses were performed to identify sample characteristics, basic bivariate correlations between measures, and gender differences. Groups were determined in two different manners, traditional and data-driven, and statistical exploration was conducted to identify group differences. For each of these grouping methods (traditional, data-driven), groups were first generated using only aggression and rejection levels, then again to include respect level in addition to aggression and rejection levels. MANOVAs were performed to detect group differences in perceived global competence, individual perceptions of peers, loneliness, perceived social competence, and respect (when not included for group formation). Tukey-Kramer post hoc analyses were conducted subsequently to distinguish group differences.

Preliminary Analyses

Descriptive statistics for measures used in the present study are presented in Table 1. Means and standard deviations were used to identify potential outliers. Approximately thirty individual scores on the seven measures were identified as statistically significant outliers, but were retained in the data set because they were properly entered, represented naturally occurring deviations from typical scores in a non-clinical sample of children, and retaining such children was of particular importance to the goals of the study. Skewness and kurtosis were acceptable for all measures, where skewness statistics all fell within the range of -3 and 3, and kurtosis statistics fell below 10.

Table 1

Descriptive Statistics for Study Measures.

Gender	Measure	<i>M</i>	<i>SD</i>	Range	Skew	Kurtosis
Combined						
<i>(n = 422)</i>	Respect	.00	.97	-2.89 – 3.52	.13	.03
	Rejection	.00	1.72	-3.66 – 5.20	.52	.02
	Overt Aggression	.00	.98	-1.16 – 4.29	1.92	3.80
	Relational Aggression	.00	.97	-1.60 – 3.85	1.45	2.02
	Global Competence	.00	1.00	-2.90 – 2.60	-.55	-.17
	Perception of Peers	.00	1.00	-3.20 – 3.07	.31	.43
	Loneliness	.00	1.00	-1.70 – 3.15	1.06	.52
	Social Competence	.00	1.00	-2.95 – 2.02	-.51	-.23
Girls						
<i>(n = 217)</i>	Respect	.23	.97	-1.86 – 3.52	.15	-.22
	Rejection	-.25	1.61	-3.66 – 4.98	.41	-.13
	Overt Aggression	-.16	.83	-1.16 – 3.65	2.08	5.29
	Relational Aggression	.06	1.00	-1.60 – 3.85	1.30	1.50
	Global Competence	.04	.95	-2.88 – 1.89	-.68	.14
	Perception of Peers	.10	.97	-2.00 – 3.07	.39	.02
	Loneliness	-.13	.91	-1.59 – 3.15	1.20	1.36
	Social Competence	.15	.92	-2.46 – 2.02	-.49	-.27
Boys						
<i>(n = 205)</i>	Respect	-.25	.92	-2.89 – 2.40	.03	.24
	Rejection	.26	1.79	-2.85 – 5.20	.54	-.06
	Overt Aggression	.18	1.09	-.93 – 4.29	1.70	2.50
	Relational Aggression	-.07	.94	-1.34 – 3.61	1.65	2.84
	Global Competence	-.04	1.05	-2.90 – 2.60	-.44	-.22
	Perception of Peers	-.11	1.02	-3.20 – 3.07	.27	.81
	Loneliness	.13	1.08	-1.70 – 3.05	.89	-.13
	Social Competence	-.16	1.05	-2.95 – 1.89	-.44	-.35

Significant bivariate correlations were identified between study measures. Overt aggression and rejection were both negatively correlated with Peer Nominations for Respect, Self-Perceived Global Competence, and Overall Peer Ratings Score, and positively correlated with Self-Perceptions of Loneliness. Rejection was also negatively

related to Self-Perceived Social Competence, while Relational Aggression was negatively correlated with Peer Nominations for Respect. Respect (i.e., Peer Nominations for Respect) was negatively related to Self-Perceptions of Loneliness and positively correlated with Self-Perceived Social Competence. Bivariate correlations between measures are presented in Tables 2, 3, and 4.

Table 2

Bivariate correlations for combined gender (n = 422).

Measure	1	2	3	4	5	6	7
1. Respect							
2. Rejection	-.744**						
3. Overt Aggression	-.415**	.497**					
4. Relational Aggression	-.313**	.371**	.808**				
5. Global Competence	.076	-.128**	-.111*	-.045			
6. Perception of Peers	.054	-.163**	-.105*	-.073	.085		
7. Loneliness	-.255**	.314**	.118*	.074	-.345**	-.209**	
8. Social Competence	.271**	-.275**	-.049	.027	.435**	.186**	-.662**

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

Table 3

Bivariate correlations for boys (n = 205).

Measure	1	2	3	4	5	6	7
1. Respect							
2. Rejection	-.742**						
3. Overt Aggression	-.297**	.420**					
4. Relational Aggression	-.244**	.335**	.869**				
5. Global Competence	.024	-.179*	-.160*	-.135			
6. Perception of Peers	.054	-.158*	-.126	-.066	.176*		
7. Loneliness	-.252**	.374**	.137	.119	-.357**	-.179*	
8. Social Competence	.298**	-.368**	-.060	-.027	.426**	.148*	-.691**

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

Table 4

Bivariate Correlations for Girls (n = 217).

Measure	1	2	3	4	5	6	7
1. Respect							
2. Rejection	-.739**						
3. Overt Aggression	-.511**	.577**					
4. Relational Aggression	-.420**	.437**	.821**				
5. Global Competence	.113	-.058	-.032	.037			
6. Perception of Peers	.005	-.141*	-.040	-.094	-.022		
7. Loneliness	-.213**	.209**	.038	.047	-.327**	-.221**	
8. Social Competence	.189**	-.127	.031	.063	.444**	.200**	-.609**

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

A 4 (Grade level: 3, 4, 5, 6) x 2 (Gender) MANOVA was performed on the five grade-standardized dependent variables of interest (Self-Perceived Social Competence, Self-Perceived Global Competence, Self-Perceptions of Loneliness, Peer Nominations for

Respect, Overall Peer Ratings Score). Only the multivariate effect for Gender reached statistical significance, multiple $F(5, 409) = 7.00, p < .001$, Wilks' Lambda = .92. Univariate follow-ups indicated significant effects for all but Self-Perceived Global Competence. Self-Perceived Social Competence, $F(1, 413) = 10.91, p < .01$, Peer Nominations for Respect, $F(1, 413) = 17.70, p < .001$, Overall Peer Ratings Score, $F(1, 413) = 4.29, p < .05$, Self-Perceptions of Loneliness $F(1, 413) = 7.61, p < .01$. In each case, girls had more positive scores than boys (Self-Perceived Social Competence, girls = .15, boys = -.17; Peer Nominations for Respect, girls = .19, boys = -.21; Overall Peer Ratings Score, girls = .09, boys = -.11; Self-Perceptions of Loneliness, girls = -.13, boys = .14).

Group Analyses

Traditional grouping method. Groups for this approach were determined by employing theory founded on previous research. Different aggression/rejection profiles have been found (for example, see Bierman, 2004), and predetermined aggression/rejection groups could be identified as Aggressive/Rejected, Aggressive Only, Rejected Only, and Non-Aggressive/Non-Rejected (NA/NR). In the present study, traditional groups were produced and compared in terms of psychosocial outcomes (e.g., Self-Perceived Social Competence, Self-Perceived Global Competence, Self-Perceptions of Loneliness, Peer Nominations for Respect, and Overall Peer Ratings Score). A total of six MANOVAs were performed for these traditional groups: One 4 (Aggression/Rejection Group) x 2 (Gender) using overt aggression; one 4 (Aggression/Rejection Group) x 2 (Gender) using relational aggression; one between boy

groups based on overt aggression, rejection, and respect; one between boy groups based on relational aggression, rejection, and respect; one between girl groups based on overt aggression, rejection, and respect; and one between girl groups based on relational aggression, rejection, and respect. Tukey-Kramer post hoc analyses were performed to determine sources of differences where appropriate.

Traditional aggression and rejection groupings. Groups were created by classifying the highest 40% and lowest 40% of participants in the sample, based on standardized rejection and aggression (overt and relational aggression separately) scores. That is, children in the top 40% for aggression and top 40% for rejection were considered Aggressive/Rejected. Those children in the bottom 40% for aggression and bottom 40% for rejection were considered NA/NR. Children in the top 40% for aggression and bottom 40% for rejection were considered Aggressive Only; those in the bottom 40% for aggression and top 40% for rejection were considered Rejected Only. Grouping cut points for scores are found in Table 5 and descriptive statistics are presented in Table 6.

Table 5

Traditional group cutpoints.

Cut Point	Measure Scores Used for Grouping			
	Rejection	Overt Aggression	Relational Aggression	Respect
Boys (<i>n</i> = 205)				
Upper 40%	≥ .5297	≥ .0200	≥ -.0931	≥ -.1057
Lower 40%	≤ -.3953	≤ -.4128	≤ -.4921	≤ -.4046
Girls (<i>n</i> = 217)				
Upper 40%	≥ -.1357	≥ -.2895	≥ .0275	≥ .4795
Lower 40%	≤ -.7600	≥ -.5632	≥ -.4185	≥ -.0944

Table 6

Traditional (40% Cut Point) Group Characteristics.

Gender	Aggression Type	Group	<i>n</i>	% of Total	
				%	Sample
Boys	Overt	NA/NR	43	32.3	10.2
		Rejected Only	24	18.0	5.7
		Aggressive Only	20	15.0	4.7
		Rejected/Aggressive	46	34.6	10.9
	Relational	NA/NR	39	30.0	9.2
		Rejected Only	27	20.8	6.4
		Aggressive Only	24	18.5	5.7
		Rejected/Aggressive	40	30.8	9.5
Girls	Overt	NA/NR	58	39.7	13.7
		Rejected Only	18	12.3	4.3
		Aggressive Only	17	11.6	4.0
		Rejected/Aggressive	53	36.3	12.6
	Relational	NA/NR	44	31.2	10.4
		Rejected Only	22	15.6	5.2
		Aggressive Only	26	18.4	6.2
		Rejected/Aggressive	49	34.8	11.6

Traditional overt aggression/rejection analysis. The 2 (Gender) x 4 (Overt Aggression/Rejection Group status: Aggressive/Rejected, Aggressive Only, Rejected Only, and NA/NR) MANOVA on Self-Perceived Social Competence, Self-Perceived Global Competence, Self-Perceptions of Loneliness, Peer Nominations for Respect, and Overall Peer Ratings Score indicated multivariate main effects for both Aggression/Rejection Group, multiple $F(15, 737) = 16.66, p < .001$, Wilks' Lambda = .45, and Gender reached statistical significance, multiple $F(5, 267) = 5.23, p < .001$, Wilks' Lambda = .91 as described below.

Univariate follow-ups for Aggression/Rejection Groups indicated significant effects for Self-Perceived Social Competence, $F(3, 271) = 7.77, p < .001$, Peer Nominations for Respect, $F(3, 271) = 99.15, p < .001$, and Self-Perceptions of Loneliness $F(3, 271) = 4.98, p < .01$. Tukey's post hoc tests indicated the same pattern of results for both Self-Perceived Social Competence and Self-Perceptions of Loneliness. Children in the Aggressive Only and NA/NR groups did not differ on self social competence ratings but were significantly higher than children in the Aggressive/Rejected and Rejected Only groups who did not differ from each other (i.e., NA/NR = Aggressive Only > Aggressive/Rejected = Rejected Only). Similarly, children in the Aggressive Only and NA/NR groups did not differ on loneliness ratings but were significantly lower than children in the Aggressive/Rejected and Rejected Only groups who did not differ from each other (i.e., Aggressive Only = NA/NR < Aggressive/Rejected = Rejected Only). For Respect nominations, each of the four groups differed from each other: NA/NR > Aggressive Only, > Rejected Only > Aggressive/Rejected. Means and standard

deviations for these effects may be found in Tables 7 and 8, and post hoc results are found in Table 9.

Table 7

Group Means and Standard Deviations (SD) using Overt Aggression/Rejection Groupings (n = 279).

Group	Measures				
	Global Competence	Perception of Peers	Loneliness	Social Competence	Respect
NA/NR	.09 (.94)	.13 (.95)	-.17 (.85)	.23 (.85)	.80(.78)
Rejected Only	-.12(1.06)	-.19 (.87)	.33 (.97)	-.49(1.02)	-.23(.81)
Aggressive Only	.16(1.11)	.13(1.19)	-.22(1.01)	.33(1.03)	.40(.70)
Aggressive/Rejected	-.16(1.08)	-.12(1.10)	.27(1.20)	-.22(1.14)	-.90(.66)

Table 8

Gender Means and Standard Deviations (SD) using Overt Aggression/Rejection Groupings (n = 279).

Group	Measures				
	Global Competence	Perception of Peers	Loneliness	Social Competence	Respect
Boys	-.08(1.09)	-.15(1.09)	.19(1.13)	-.18(1.12)	-.23(1.01)
Girls	.03 (.99)	.13 (.96)	-.06 (.95)	.11 (.96)	.18(1.03)

Table 9

Tukey-Kramer Comparisons of Overt Aggression/Rejection (Traditional) Groups and Study Measures.

Combined Gender: Groupings by Overt Aggression and Rejection 40% Cut Points

Study Variable	(I) Group	(J) Group	Mean (I-J) Difference
Loneliness	NA/NR	Rejected Only	-.5021*
		Aggressive Only	-.0550
		Rejected/Aggressive	-.4348*
	Rejected Only	Aggressive Only	.5571
		Rejected/Aggressive	.0673
	Aggressive Only	Rejected/Aggressive	-.4898
Social Competence	NA/NR	Rejected Only	.7132*
		Aggressive Only	-.0998
		Rejected/Aggressive	.4474*
	Rejected Only	Aggressive Only	-.8130*
		Rejected/Aggressive	-.2657
	Aggressive Only	Rejected/Aggressive	.5472*
Respect	NA/NR	Rejected Only	1.0277*
		Aggressive Only	.3970*
		Rejected/Aggressive	1.6999*
	Rejected Only	Aggressive Only	-.6307*
		Rejected/Aggressive	.6721*
	Aggressive Only	Rejected/Aggressive	1.3029*

* $p < .05$.

For the Gender effects, univariate follow-ups indicated significant effects for Self-Perceived Social Competence, $F(1, 271) = 4.04, p < .05$, Peer Nominations for Respect, $F(1, 271) = 20.02, p < .001$, and Overall Peer Ratings Score, $F(1, 271) = 4.53, p < .05$. In each case, girls had more positive scores than boys (Self-Perceived Social Competence, girls = .03, boys = -.08); Peer Nominations for Respect, girls = .18, boys = -.23; and Overall Peer Ratings Score, girls = .13, boys = -.15.

Traditional relational aggression/rejection analysis. The 2 (Gender) x 4 (Relational Aggression/Rejection Group status: Aggressive/Rejected, Aggressive Only, Rejected Only, and NA/NR) MANOVA on Self-Perceived Social Competence, Self-Perceived Global Competence, Self-Perceptions of Loneliness Peer Nominations for Respect, and Overall Peer Ratings Score indicated multivariate main effects for both Aggression/Rejection Group, multiple $F(15, 715) = 16.82, p < .001$, Wilks' Lambda = .43, and Gender reached statistical significance, multiple $F(5, 259) = 5.69, p < .001$, Wilks' Lambda = .90 as described below.

Univariate follow-ups for Aggression/Rejection Groups indicated significant effects for Self-Perceived Social Competence, $F(3, 263) = 5.00, p < .01$, Peer Nominations for Respect, $F(3, 263) = 103.14, p < .001$, and Self-Perceptions of Loneliness $F(3, 263) = 2.89, p < .05$. Tukey's post hoc tests were conducted to specify individual group differences. For Self-Perceived Social Competence, the NA/NR group did not differ from other groups, and the Aggressive Only group reported significantly higher self social competence than both the Rejected Only and Aggressive/Rejected groups, who did not differ from each other: Aggressive Only > Rejected Only =

Aggressive/Rejected. Children in the NA/NR and Aggressive Only groups did not differ on Respect nominations but were significantly higher than children in the Aggressive/Rejected and Rejected Only groups, and the Rejected Only group was significantly higher than the Aggressive/Rejected group (i.e., NA/NR = Aggressive Only > Rejected Only > Aggressive/Rejected). Although univariate analyses identified significant group differences for Self-Perceptions of Loneliness, post hoc tests revealed no significant (< .05) group differences. Means and standard deviations for these effects may be found in Tables 10 and 11, and post hoc results are found in Table 12.

Table 10

Group Means and Standard Deviations (SD) using Relational Aggression/Rejection Groupings (n = 271).

Group	Measures				
	Global Competence	Perception of Peers	Loneliness	Social Competence	Respect
NA/NR	.02 (.97)	.21(1.11)	-.09 (.93)	.12 (.90)	.81(.74)
Rejected Only	-.02 (.99)	-.07 (.81)	.12 (.87)	-.28 (.96)	-.35(.78)
Aggressive Only	.14 (.98)	.07 (.97)	-.23 (.86)	.38 (.87)	.56(.72)
Aggressive/Rejected	-.16(1.10)	-.17(1.05)	.22(1.15)	-.15(1.12)	-.88(.64)

Table 11

Gender Means and Standard Deviations (SD) using Relational Aggression/Rejection Groupings (n = 271).

Group	Measures				
	Global Competence	Perception of Peers	Loneliness	Social Competence	Respect
Boys	-.06(1.09)	-.14(1.10)	.15(1.06)	-.15(1.06)	-.20(1.00)
Girls	.01 (.95)	.15 (.92)	-.09 (.92)	.16 (.92)	.19(1.01)

Table 12

Tukey-Kramer Comparisons of Overt Aggression/Rejection (Traditional) Group Outcomes.

Combined Gender: Groupings by Relational Aggression and Rejection 40% Cut Points

Study Variable	(I) Group	(J) Group	Mean (I-J) Difference
Loneliness	NA/NR	Rejected Only	-.2067
		Aggressive Only	.1428
		Rejected/Aggressive	-.3052
	Rejected Only	Aggressive Only	.3494
		Rejected/Aggressive	-.0985
		Aggressive Only	-.4490
Social Competence	NA/NR	Rejected Only	.3968
		Aggressive Only	-.2624
		Rejected/Aggressive	.2698
	Rejected Only	Aggressive Only	-.6592*
		Rejected/Aggressive	-.1270
		Aggressive Only	.5322*
Respect	NA/NR	Rejected Only	1.1597*
		Aggressive Only	.2494
		Rejected/Aggressive	1.6945*
	Rejected Only	Aggressive Only	-.9103*
		Rejected/Aggressive	.5348*
		Aggressive Only	1.4451*

* $p < .05$.

For the Gender effects, univariate follow-ups indicated significant effects for Self-Perceived Social Competence, $F(1, 263) = 6.12, p < .05$, Peer Nominations for Respect, $F(1, 263) = 21.92, p < .001$, and Overall Peer Ratings Score, $F(1, 263) = 4.73, p < .05$. In each case, again, girls had more positive scores than boys (Self-Perceived Social Competence, girls = .01, boys = -.06); Peer Nominations for Respect, girls = .19, boys = -.20; and Overall Peer Ratings Score, girls = .15, boys = -.14.

Summary of traditional aggression/rejection analyses. Main effects were identified for both Aggression/Rejection Group and Gender regardless of aggression type (i.e., overt or relational). For both overt and relational types of aggression, significant Aggression/Rejection Group differences were identified for Self-Perceived Social Competence, Peer Nominations for Respect, and Self-Perceptions of Loneliness. Generally, the NA/NR and Aggressive Only groups had more favorable outcomes (i.e., higher social competence and respect, with lower loneliness). Regarding the main effects for Gender, girls consistently displayed more favorable outcomes than boys for Self-Perceived Social Competence, Peer Nominations for Respect, and Self-Perceptions of Loneliness (i.e., higher social competence and respect, and lower loneliness), regardless of aggression type (i.e., overt or relational).

Traditional approach: Aggression, rejection, and respect groupings. The above established aggression and rejection groups were then subdivided to include each child's extent of respect by peers. For each Aggressive/Rejected profile, and across gender and aggression type, children were assigned to either a high or low respect group. Children in the top 40% for peer respect nominations were considered high in respect and children in

the bottom 40% for peer respect nominations were considered low in respect. A total of eight Aggression/Rejection/Respect groups were created: high versus low status (combination of aggression, rejection, and respect) for gender and by type of aggression (overt, relational). As shown in Table 13, not surprisingly, some of the eight combinations had a very small membership. For the purpose of the following analyses, groups which had fewer than 10% of the relevant sample were excluded. The exclusion of small groups resulted in different groups for boys and for girls and, therefore, analyses were conducted separately by gender. In all, four MANOVAs were conducted representing the factorial combination of gender and type of aggression, for the following dependent variables: Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness.

Table 13

Traditional (40% Cut Point) Group Characteristics, Respect Included.

Gender	Aggression Type	Aggression/Rejection/Respect	<i>n</i>	%	% of Total Sample
Boys	Overt	Low / Low / Low	2	1.8	0.5
		Low / Low / High	32	29.4	7.6
		Low / High / Low	16	14.7	3.8
		Low / High / High	4	3.7	0.9
		High / Low / Low	2	1.8	0.5
		High / Low / High	13	11.9	3.1
		High / High / Low	36	33.0	8.5
		High / High / High	4	3.7	0.9
	Relational	Low / Low / Low	1	0.9	0.2
		Low / Low / High	32	28.8	7.6
		Low / High / Low	19	17.1	4.5
		Low / High / High	3	2.7	0.7
		High / Low / Low	2	1.8	0.5
		High / Low / High	18	16.2	4.3
High / High / Low		33	29.7	7.8	
High / High / High		3	2.7	0.7	
Girls	Overt	Low / Low / Low	4	3.3	0.9
		Low / Low / High	44	36.4	10.4
		Low / High / Low	5	4.1	1.2
		Low / High / High	6	5.0	1.4
		High / Low / Low	4	3.3	0.9
		High / Low / High	8	6.6	1.9
		High / High / Low	50	41.3	11.8
		High / High / High	0	0.0	0.0
	Relational	Low / Low / Low	2	1.7	0.5
		Low / Low / High	37	31.1	8.8
		Low / High / Low	9	7.6	2.1
		Low / High / High	6	5.0	1.4
		High / Low / Low	5	4.2	1.2
		High / Low / High	14	11.8	3.3
High / High / Low		46	38.7	10.9	
High / High / High		0	0.0	0.0	

For boys, MANOVAs did not reveal multivariate main effects of group status (i.e., Aggression/Rejection/Respect Group) using overt aggression, multiple $F(12, 238) = 1.19, p > .05$, Wilks' Lambda = .86, or relational aggression, multiple $F(12, 251) = 1.33, p > .05$, Wilks' Lambda = .85, for the dependent variables, Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness. Group means and standard deviations on measures for boys are presented in Tables 14 and 15. For girls, MANOVAs did not reveal multivariate main effects of group status (i.e., Aggression/Rejection/Respect Group) using overt aggression, multiple $F(4, 89) = .28, p > .05$, Wilks' Lambda = .99, or relational aggression, multiple $F(8, 182) = .93, p > .05$, Wilks' Lambda = .92, for the dependent variables, Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness. In summary, no main effects were identified for traditional Aggression/Rejection/Respect groups regardless of gender or aggression type (i.e., overt or relational). Group means and standard deviations on measures for girls are presented in Tables 16 and 17.

Table 14

Means and Standard Deviations (SD) for Boys using Overt Aggression/Rejection/Respect Groups (n = 109).

Group (^a / ^b / ^c)	Measures			
	Global Competence	Perception of Peers	Loneliness	Social Competence
Low / Low / Low	.08 (.53)	.53 (.34)	-.19 (.18)	.15(1.02)
Low / Low / High	-.00(1.02)	-.02(1.13)	-.17 (.91)	.21 (.94)
Low / High / Low	-.08 (.93)	-.28 (.95)	.32 (.76)	-.32(1.13)
Low / High / High	.55(1.87)	-.03(1.55)	1.00(1.12)	-1.17 (.80)
High / Low / Low	.88 (.37)	-.56 (.38)	-.80 (.70)	1.04 (.68)
High / Low / High	-.39(1.33)	-.28(1.17)	-.15 (.98)	.07 (.79)
High / High / Low	-.20(1.05)	-.25(1.10)	.58(1.44)	-.58(1.31)
High / High / High	-1.05 (.71)	-.91 (.73)	.79 (.72)	-.32 (.98)

Note. High versus low group status is organized and presented by aggression/rejection/respect levels.

^a = Aggression level (high or low), ^b = Rejection level (high or low), ^c = Respect level (high or low)

Table 15

Means and Standard Deviations (SD) for Boys using Relational Aggression/Rejection/Respect Groups (n = 111).

Group (^a / ^b / ^c)	Measures			
	Global Competence	Perception of Peers	Loneliness	Social Competence
Low / Low / Low	.66(NA)	.77(NA)	-.97(NA)	1.62(NA)
Low / Low / High	.20 (.98)	.01(1.24)	-.10 (.88)	.04(1.01)
Low / High / Low	-.06(1.27)	-.16 (.87)	.29(1.10)	-.45(1.06)
Low / High / High	.09 (.73)	.04(1.89)	.10 (.40)	-.29 (.31)
High / Low / Low	-1.19(2.41)	-.14 (.99)	-1.00 (.30)	-.32(2.02)
High / Low / High	-.05(1.06)	-.17(1.14)	-.17 (.59)	.32 (.65)
High / High / Low	-.39(1.08)	-.30(1.03)	.52(1.36)	-.46(1.25)
High / High / High	-.08 (.56)	-.98 (.87)	.86 (.33)	-.67 (.31)

Note. High versus low group status is organized and presented by aggression/rejection/respect levels.

^a = Aggression level (high or low), ^b = Rejection level (high or low), ^c = Respect level (high or low)

NA = SD is not available with one person in the group

Table 16

Means and Standard Deviations (SD) for Girls using Overt Aggression/Rejection/Respect Groups (n = 121).

Group (^a / ^b / ^c)	Measures			
	Global Competence	Perception of Peers	Loneliness	Social Competence
Low / Low / Low	.14(1.04)	.04 (.71)	.11(1.42)	.10(1.37)
Low / Low / High	.01 (.94)	.14 (.88)	-.09 (.83)	.17 (.74)
Low / High / Low	.38 (.75)	-.66 (.67)	.04 (.58)	-.67 (.66)
Low / High / High	.06 (.64)	-.12 (.70)	.07(1.60)	.12 (.93)
High / Low / Low	.86 (.51)	.95(1.11)	-.84 (.77)	1.05 (.97)
High / Low / High	.13 (.54)	.51 (.55)	.02(1.35)	.22(1.14)
High / High / Low	-.03(1.15)	.08(1.16)	.08 (.99)	.00(1.04)
High / High / High	N/A	N/A	N/A	N/A

Note. High versus low group status is organized and presented by aggression/rejection/respect levels.

^a = Aggression level (high or low), ^b = Rejection level (high or low), ^c = Respect level (high or low).

High/high/high had zero (0) group members.

Table 17

Means and Standard Deviations (SD) for Girls using Relational Aggression/Rejection/Respect Groups (n = 119).

Group (^a / ^b / ^c)	Measures			
	Global Competence	Perception of Peers	Loneliness	Social Competence
Low / Low / Low	.84 (.14)	.50 (.02)	-.28 (.40)	-.59 (.22)
Low / Low / High	-.21 (.94)	.26 (.87)	-.12 (.94)	.16 (.84)
Low / High / Low	-.21 (.42)	-.27 (.67)	-.13 (.91)	.09 (.72)
Low / High / High	-.13 (.97)	.26 (.65)	-.00 (.90)	-.10(1.02)
High / Low / Low	.71 (.54)	.56(1.29)	-.89 (.42)	1.30 (.45)
High / Low / High	.42 (.47)	.30 (.70)	-.14(1.11)	.32 (.94)
High / High / Low	.02(1.13)	.02(1.10)	.06 (.99)	.08(1.05)
High / High / High	N/A	N/A	N/A	N/A

Note. High versus low group status is organized and presented by aggression/rejection/respect levels.

^a = Aggression level (high or low), ^b = Rejection level (high or low), ^c = Respect level (high or low)

High/high/high had zero (0) group members.

Data-driven grouping method. A second major set of analyses was conducted using latent variable mixture modeling (LVMM) to determine groups based on aggression and rejection characteristics of children. The data-driven analyses used each participant's scores to determine "naturally" existing profiles for the sample of children. As discussed by Muthén and Muthén (1998-2007), LVMM is a statistical method used to identify classes, or groups of participants, by drawing common profiles from shared patterns of variable scores. Each class is identified by a particular profile (or combination) of scores on different study measures. Determining the appropriate model with the correct number of classes is a critical and inexact process that requires the

consideration of several fit indexes and other data (e.g., class size). It is through LVMM that researchers can more accurately determine the nature of subgroups within their sample.

In the data-driven analyses, groups (classes) were first generated using two scores per participant (i.e., aggression and rejection), and later groups were derived using three scores (i.e., aggression, rejection, and respect). The same participants used for the traditional analyses were also used for the data-driven analyses (LVMM); however, variables in the LVMM were left continuous rather than converting each score to a high or low group status.

LVMM's were performed using the statistics package Mplus (Muthén & Muthén, 1998-2007). Different models were tested for goodness of fit and compared to each other. Initially when conducting an LVMM, separate models are specified by altering the number of classes/groups for each model. In the current study, each participant's rejection and aggression z-scores were entered into several models, and each model's goodness of fit was assessed. To determine goodness of fit, the fit indexes for each model (i.e., Log-likelihood, Akaike information criteria [AIC], Bayesian information criteria [BIC], and sample-size adjusted BIC [ABIC]) and Entropy were compared to those of other models. Specifically, better fitting models have a comparably smaller AIC and BIC, and greater Log-likelihood (e.g., see Schwartz, 1978; Uher et al., 2009) and Entropy (e.g., see Celeux & Soromenho, 1996).

Data-driven classes are determined conjunctively in two ways; statistically and logically. Statistical determination is achieved by comparing fit statistics between

models and selecting models with ample participants per group/class. In the current study, a minimum arbitrary number of 10 participants per class was required to constitute a group. The cut point of 10 participants was always less than 10% of the sample and was believed to be a reasonable requirement for a small group to exist within the current sample. Models with groups of less than 10 participants were not selected for subsequent analyses.

In addition to statistical analyses, appropriate groups are also determined logically in an LVMM. Nonsensical groupings are likely to be avoided and discarded when identified. For example, the point of the current study's LVMM was to denote common and logical profiles of children. Furthermore, when confronted with equally logical models the *lex parsimoniae* (law of parsimony or Occum's Razor) may guide decision-making. As such, the simplest, most parsimonious, model is likely the best one. All LVMM models in the current study were determined by the aforementioned statistical and theoretical procedures.

Data-driven aggression/rejection groupings. Group/class names were implemented as descriptors for each group's mean scores relative to the other groups' mean scores on rejection and aggression measures (e.g., group name of "Low/Low" for a low score on aggression and low score on rejection). Names were subjectively determined by visual comparison of groupings displayed on this study's LVMM figures.

For boys, a three-class model was determined when utilizing overt aggression and rejection scores (Figure 1). All fit indexes for the three-class model ($Log = -445$, $AIC = 910$, $BIC = 939$, $ABIC = 907$, $Entropy = .886$) were improved from the two-class solution

($Log = -461$, $AIC = 936$, $BIC = 956$, $ABIC = 934$, $Entropy = .879$), while the possible four-class solution yielded one group with only two participants. Approximately 64.5% ($n = 84$) of the sample were in the Low/Low group, 23.0% ($n = 31$) were in the Moderate/Moderate group, and 12.5% ($n = 17$) were in the High/High group.

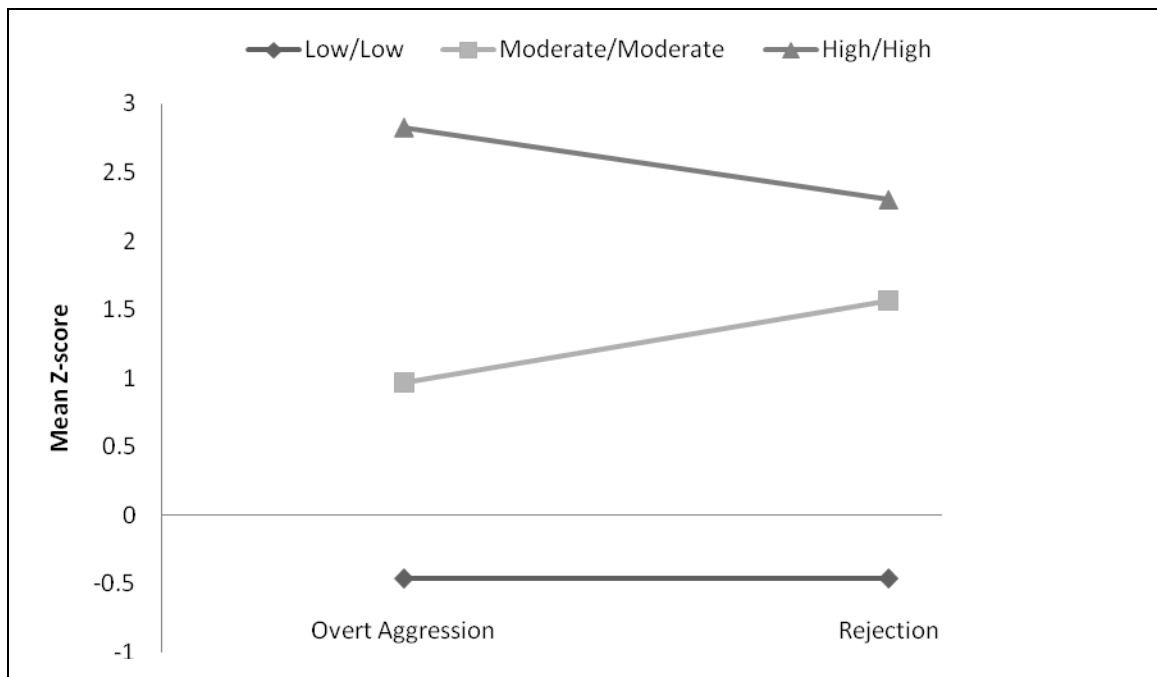


Figure 1. Boys' 3-class model solution based on overt aggression and rejection.

When relational aggression and rejection were considered, a three-class model was determined for boys (Figure 2). With one exception ($Entropy = .853$), most fit indexes for the three-class model ($Log = -432$, $AIC = 885$, $BIC = 913$, $ABIC = 882$) were improved from the two-class model ($Log = -442$, $AIC = 898$, $BIC = 918$, $ABIC = 896$, $Entropy = .876$). A possible four-class model solution revealed one group with zero (0) members. Approximately 71.9% ($n = 95$) of the sample were in the Low/Low group,

18.9% ($n = 24$) were in the Moderate/High group, and 9.2% ($n = 11$) were in the High/High group.

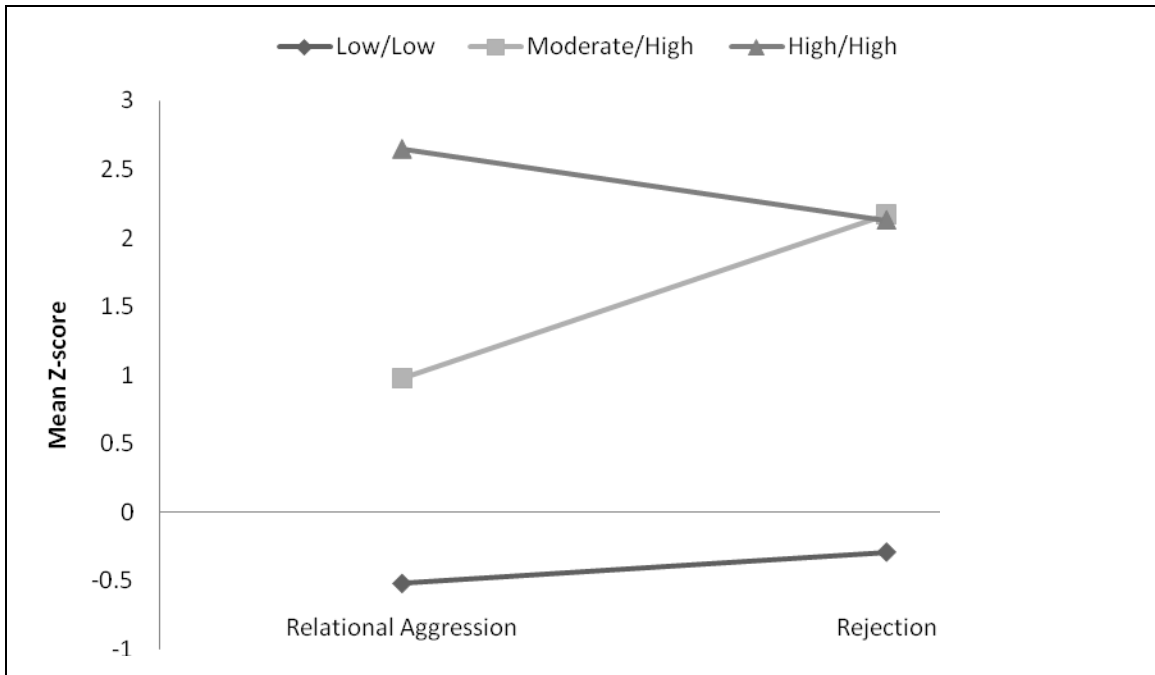


Figure 2. Boys' 3-class model solution for relational aggression and rejection.

For girls, a two-class model was determined when utilizing overt aggression and rejection scores (Figure 3). All fit indexes for the two-class model ($Log = -415$, $AIC = 850$, $BIC = 880$, $ABIC = 848$, $Entropy = .923$) were acceptable, while the possible three-class solution yielded one group with only five participants and the possible four-class solution yielded one group with zero (0) participants. Approximately 66.8% ($n = 97$) of the sample were in the Low/Low group and 33.2% ($n = 49$) were in the High/High group.

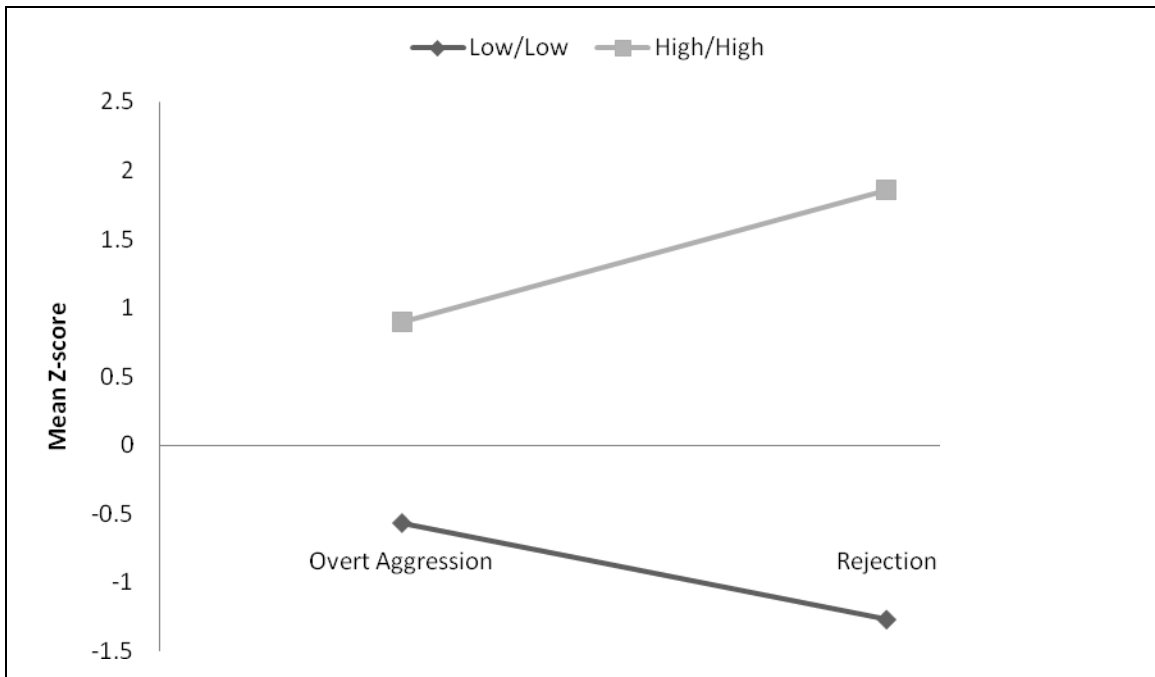


Figure 3. Girls' 2-class model solution for overt aggression and rejection.

When considering relational aggression and rejection for girls, a three-class model was determined (Figure 4). All fit indexes for the three-class model ($Log = -458$, $AIC = 937$, $BIC = 967$, $ABIC = 935$, $Entropy = .839$) were improved from the two-class model ($Log = -472$, $AIC = 958$, $BIC = 978$, $ABIC = 956$, $Entropy = .784$). A possible four-class model solution revealed one group with zero (0) members. Approximately 56.4% ($n = 80$) of the sample were in the Low/Low group, 34.3% ($n = 48$) were in the Moderate/Moderate group, and 9.4% ($n = 13$) were in the High/High group.

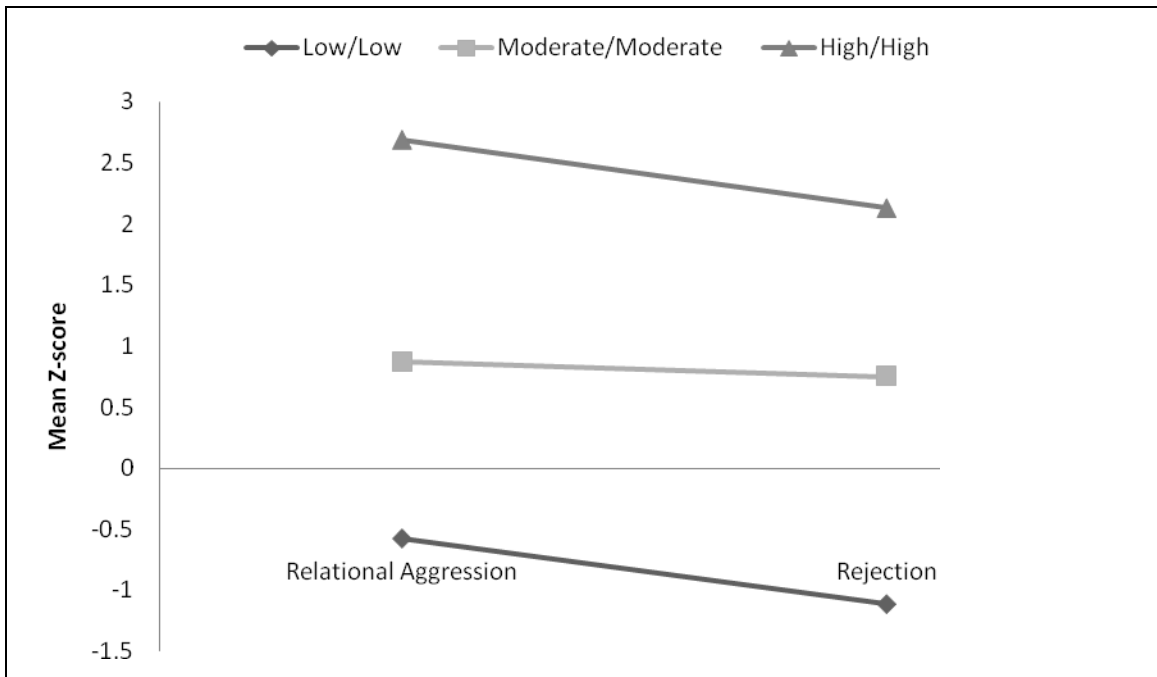


Figure 4. Girls' 3-class model solution for relational aggression and rejection.

Descriptive group statistics from the aforementioned data-driven (LVMM) analyses are presented in Table 18. Given that different groups resulted for boys and girls, subsequent analyses were conducted separately by gender. A total of four MANOVAs were conducted representing the factorial combination of gender and type of aggression, for the following dependent variables: Peer Nominations for Respect, Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness.

Table 18

Data-driven (Latent Variable Mixture Model) Group Characteristics.

Gender	Aggression Type	Group		<i>n</i>	% of Total Sample	
		<i>Aggression/Rejection</i>			%	
Boys	Overt	Low / Low		84	63.2	41.0
		Moderate/ Moderate		32	24.1	15.6
		High / High		17	12.8	8.3
	Relational	Low / Low		95	73.1	46.3
		Moderate/ High		24	18.5	11.7
		High / High		11	8.5	5.4
Girls	Overt	Low / Low		97	66.4	44.7
		High / High		49	33.6	22.6
	Relational	Low / Low		80	56.7	36.9
		Moderate/ Moderate		48	34.0	22.1
		High / High		13	9.2	6.0

Boys' data-driven aggression/rejection analysis. A MANOVA using overt aggression identified a multivariate main effect of Aggression/Rejection Group status, multiple $F(10, 252) = 3.72, p < .001$, Wilks' Lambda = .76, for the outcome variables: Peer Nominations for Respect, Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness.

Univariate follow-ups for Aggression/Rejection groups indicated significant effects for Peer Nominations for Respect, $F(2, 130) = 11.892, p < .001$, Self-Perceived Global Competence, $F(2, 130) = 3.39, p < .05$, and Self-Perceptions of Loneliness $F(2, 130) = 3.06, p = .05$. Tukey's post hoc tests were conducted to specify individual group differences. Boys in the Low/Low group had significantly higher Respect scores than the Moderate/Moderate and High/High groups, which did not differ from the other

(Low/Low > Moderate/Moderate = High/High). Boys in the Low/Low group had higher scores on Self-Perceived Global Competence than the Moderate/Moderate and High/High groups, while the Moderate/Moderate and High/High groups did not differ: Low/Low > Moderate/Moderate = High/High. Similarly, boys in the Low/Low group had lower scores on Self-Perceptions of Loneliness than children in the Moderate/Moderate and High/High groups who did not differ (Low/Low < Moderate/Moderate = High/High). Means and standard deviations for these effects may be found in Table 19 and post hoc results are found in Table 20.

Table 19

Boys' Means and Standard Deviations (SD) for Data-Driven Groups using Overt Aggression/Rejection (n = 133).

Group <i>Aggression/Rejection</i>	Measures				
	Global Competence	Perception of Peers	Loneliness	Social Competence	Respect
Low / Low	.03(1.06)	-.04(1.05)	.05(1.00)	-.10(1.07)	.07 (.89)
Moderate / Moderate	-.06(1.08)	-.42(1.18)	.21(1.30)	-.21(1.29)	-.65(1.02)
High / High	-.70(1.08)	-.24(1.07)	.79(1.29)	-.53(1.03)	-.91(1.00)

Table 20

Tukey-Kramer Comparisons of Boys' Overt Aggression/Rejection (Data-Driven) Groups and Study Measures.

Groupings by Latent Variable Mixture Model (LVMM)

Study Variable	Group (I) <i>Aggression/Rejection</i>	Group (J) <i>Aggression/Rejection</i>	Mean (I-J) Difference
Global Competence	Low / Low	Moderate/ Moderate	.0995
		High / High	.7392*
	Moderate/ Moderate	High / High	-.66397
Loneliness	Low / Low	Moderate/ Moderate	-.1611
		High / High	-.7330*
	Moderate/ Moderate	High / High	-.5719
Respect	Low / Low	Moderate/ Moderate	.7200*
		High / High	.9733*
	Moderate/ Moderate	High / High	.2533

* $p < .05$.

A MANOVA using relational aggression identified a multivariate main effect of Aggression/Rejection Group status, multiple $F(10, 246) = 3.30, p < .001$, Wilks' Lambda = .78, for the outcome variables: Peer Nominations for Respect, Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness.

Univariate follow-ups for Aggression/Rejection groups indicated significant effects for Peer Nominations for Respect, $F(2, 127) = 14.12, p < .001$. Tukey's post hoc tests were conducted to specify individual group differences. Boys in the Low/Low group had significantly higher Respect scores than the Moderate/High and High/High

groups, which did not differ (Low/Low > Moderate/High = High/High). Means and standard deviations for these effects may be found in Table 21 and post hoc results are found in Table 22.

Table 21

Boys' Means and Standard Deviations (SD) for Data-Driven Groups using Relational Aggression/Rejection (n = 130).

Group <i>Aggression/Rejection</i>	Measures				
	Global Competence	Perception of Peers	Loneliness	Social Competence	Respect
Low / Low	.00(1.06)	-.11(1.08)	.08 (.97)	-.08 (.98)	.06 (.86)
Moderate/ High	-.34(1.21)	-.12(1.28)	.55(1.39)	-.37(1.28)	-.90(1.05)
High / High	-.04(1.09)	-.47 (.86)	-.14 (.79)	-.30(1.28)	-.90(1.03)

Table 22

Tukey-Kramer Comparisons of Boys' Relational Aggression/Rejection (Data-Driven) Groups and Study Measures.

Groupings by Latent Variable Mixture Model (LVMM)			
Study Variable	Group (I) <i>Aggression/Rejection</i>	Group (J) <i>Aggression/Rejection</i>	Mean (I-J) Difference
Respect	Low / Low	Moderate/ High	.9596*
		High / High	.9563*
	Moderate/ High	High / High	-.0033

* $p < .05$.

Summary of boys' data-driven aggression/rejection analyses. Main effects were identified for Aggression/Rejection Group when using either type of aggression (i.e., overt or relational). For both overt and relational types of aggression, significant Aggression/Rejection Group differences were identified for Peer Nominations for Respect. Aggression/Rejection Group differences were identified for Self-Perceived Global Competence and Self-Perceptions of Loneliness only with overt aggression. In general, the Low/Low groups consistently displayed more favorable outcomes than other groups. Boys in the Low/Low groups had higher scores on Peer Nominations for Respect than other groups, and with overt aggression the Low/Low group had higher Self-Perceived Global Competence and lower Self-Perceptions of Loneliness.

Girls' data-driven aggression/rejection analysis. A MANOVA using overt aggression identified a multivariate main effect of Aggression/Rejection Group status, multiple $F(5, 140) = 30.49, p < .001$, Wilks' Lambda = .48, for the outcome variables: Peer Nominations for Respect, Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness. Univariate follow-ups for Aggression/Rejection groups indicated significant effects for Peer Nominations for Respect, $F(1, 144) = 149.200, p < .001$. Girls in the Low/Low group had significantly higher Respect scores than girls in the High/High group (Low/Low > High/High). Means and standard deviations for these effects may be found in Table 23.

Table 23

Girls' Means and Standard Deviations (SD) for Data-Driven Groups using Overt Aggression/Rejection (n = 146).

Group <i>Aggression/Rejection</i>		Measures				
		Global Competence	Perception of Peers	Loneliness	Social Competence	Respect
Low	/ Low	.03 (.93)	.19 (.89)	-.13 (.94)	.15 (.93)	.71 (.81)
High	/ High	.02(1.10)	.01(1.09)	.06 (.96)	.04(1.01)	-.85(.52)

A MANOVA using relational aggression identified a multivariate main effect of Aggression/Rejection Group status, multiple $F(10, 268) = 7.43, p < .001$, Wilks' Lambda = .61, for the outcome variables: Peer Nominations for Respect, Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness. Univariate follow-ups for Aggression/Rejection groups indicated significant effects for Peer Nominations for Respect, $F(2, 138) = 38.828, p < .001$. Girls in the Low/Low group had significantly higher Respect scores than girls in the Moderate/Moderate and High/High groups, which did not differ (Low/Low > Moderate/Moderate = High/High). Means and standard deviations for these effects may be found in Table 24 and post hoc results are found in Table 25.

Table 24

Girls' Means and Standard Deviations (SD) for Data-Driven Groups using Relational Aggression/Rejection (n = 141).

Group <i>Aggression/Rejection</i>	Measures				
	Global Competence	Perception of Peers	Loneliness	Social Competence	Respect
Low / Low	-.02 (.89)	.18 (.79)	-.13 (.87)	.15 (.84)	.70(.86)
Moderate/ Moderate	-.00(1.02)	.24(1.08)	-.03(1.04)	.19 (.97)	-.40(.72)
High / High	.27(1.12)	-.33 (.98)	-.02 (.79)	.07(1.23)	-.83(.81)

Table 25

Tukey-Kramer Comparisons of Girls' Relational Aggression/Rejection (Data-Driven) Groups and Study Measures.

Groupings by Latent Variable Mixture Model (LVMM)

Study Variable	Group (I) <i>Aggression/Rejection</i>	Group (J) <i>Aggression/Rejection</i>	Mean (I-J) Difference
Respect	Low / Low	Moderate/ Moderate	1.1028*
		High / High	1.5355*
	Moderate/ Moderate	High / High	.4327

* $p < .05$.

Summary of girls' data-driven aggression/rejection analyses. Main effects of Aggression/Rejection Group were identified for both overt and relational aggression. Significant differences were identified for Peer Nominations for Respect, where the Low/Low groups consistently yielded higher scores than other groups.

Data-driven approach: Aggression, rejection, and respect groupings. Alternative data-driven groups were then constructed with the inclusion of the respect variable using LVMM in the same manner described previously. Groups at this point were determined naturally by identifying participants that shared similar scores for rejection, aggression, and respect. Again, group name descriptors were implemented for each group's mean scores relative to the other groups' mean scores, and are sequentially listed by aggression, rejection, and respect scores (e.g., "Low/Low/High" for a low score on aggression, low score on rejection, and high score on respect). The number of groups varied across samples by gender and aggression type.

For boys, a three-class model was determined when utilizing overt aggression, rejection, and respect scores (Figure 5). All fit indexes for the three-class model ($Log = -593$, $AIC = 1215$, $BIC = 1256$, $ABIC = 1211$, $Entropy = .937$) were improved from the two-class solution ($Log = -627$, $AIC = 1275$, $BIC = 1304$, $ABIC = 1272$, $Entropy = .804$). The possible four-class solution yielded one group with only three participants. Approximately 47.0% ($n = 63$) of the sample were in the Low/Low/High group, 39.0% ($n = 51$) were in the Low/Moderate/Moderate group, and 14.0% ($n = 19$) were in the High/High/Low group.

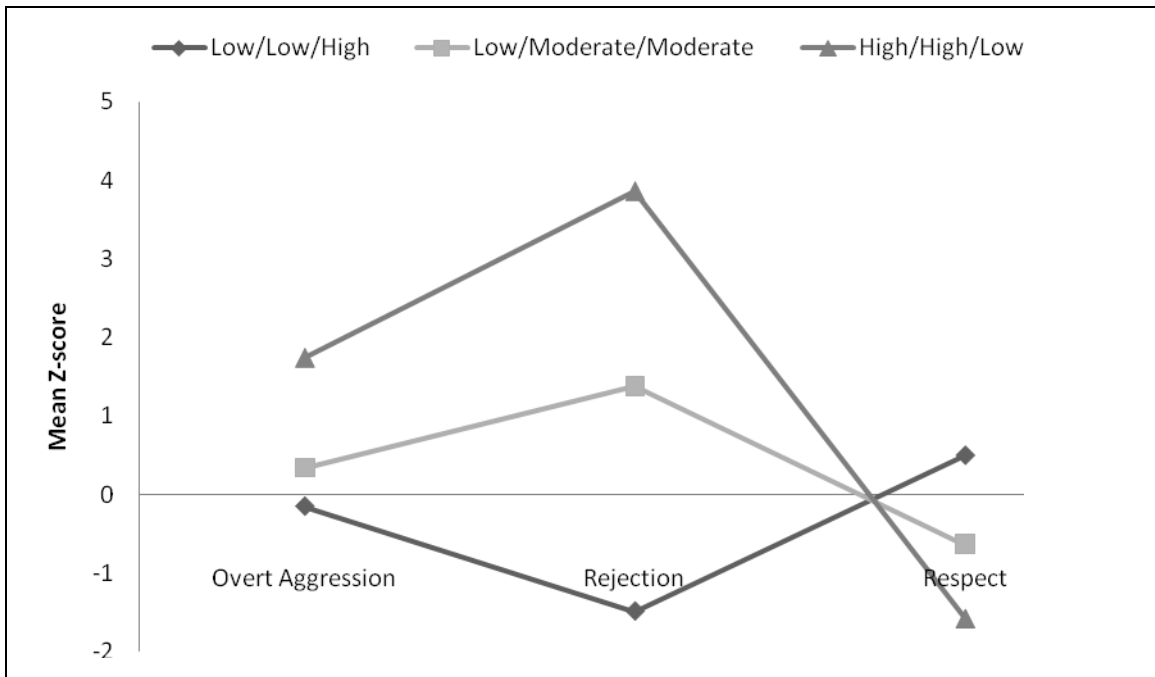


Figure 5. Boys' 3-class model solution based on overt aggression, rejection, and respect.

With relational aggression, rejection, and respect, a three-class model was determined for boys (Figure 6). All fit indexes for the three-class model ($Log = -560$, $AIC = 1148$, $BIC = 1188$, $ABIC = 1144$, $Entropy = .928$) were improved from the two-class model ($Log = -591$, $AIC = 1202$, $BIC = 1230$, $ABIC = 1199$, $Entropy = .843$). A possible four-class model solution revealed some mild improvements ($Log = -552$, $AIC = 1140$, $ABIC = 1134$) and some indexes failed to improve ($BIC = 1191$, $Entropy = .815$). With additional model consideration, *lex parsimoniae* suggests the simpler, three-class model is the best fit. Approximately 47.5% ($n = 62$) of the sample were in the Low/Low/High group, 39.2% ($n = 51$) were in the Low/Moderate/Moderate group, and 13.2% ($n = 17$) were in the High/High/Low group.

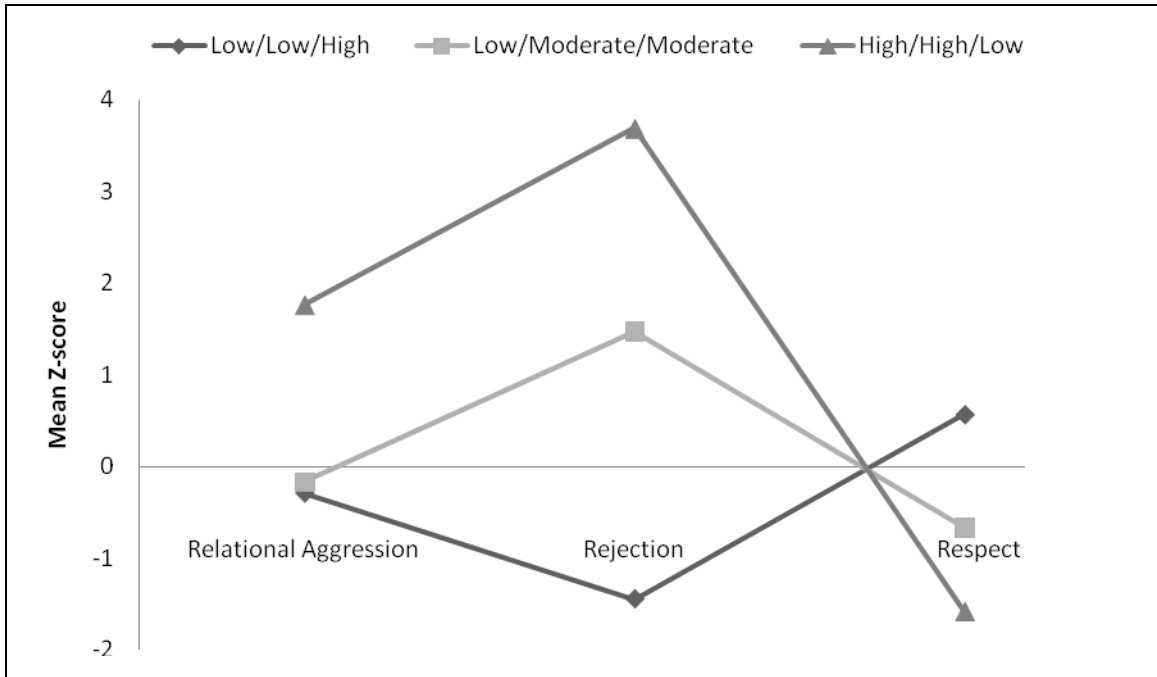


Figure 6. Boys' 3-class model solution for relational aggression, rejection, and respect.

For girls, a two-class model was determined when utilizing overt aggression, rejection, and respect scores (Figure 7). All fit indexes for the two-class model ($Log = -608$, $AIC = 1236$, $BIC = 1266$, $ABIC = 1234$, $Entropy = .909$) were acceptable, while both the possible three-class and four-class solutions each yielded one group with only five participants. Approximately 62.7% ($n = 91$) of the sample were in the Low/Low/High group and 37.3% ($n = 55$) were in the High/High/Low group.

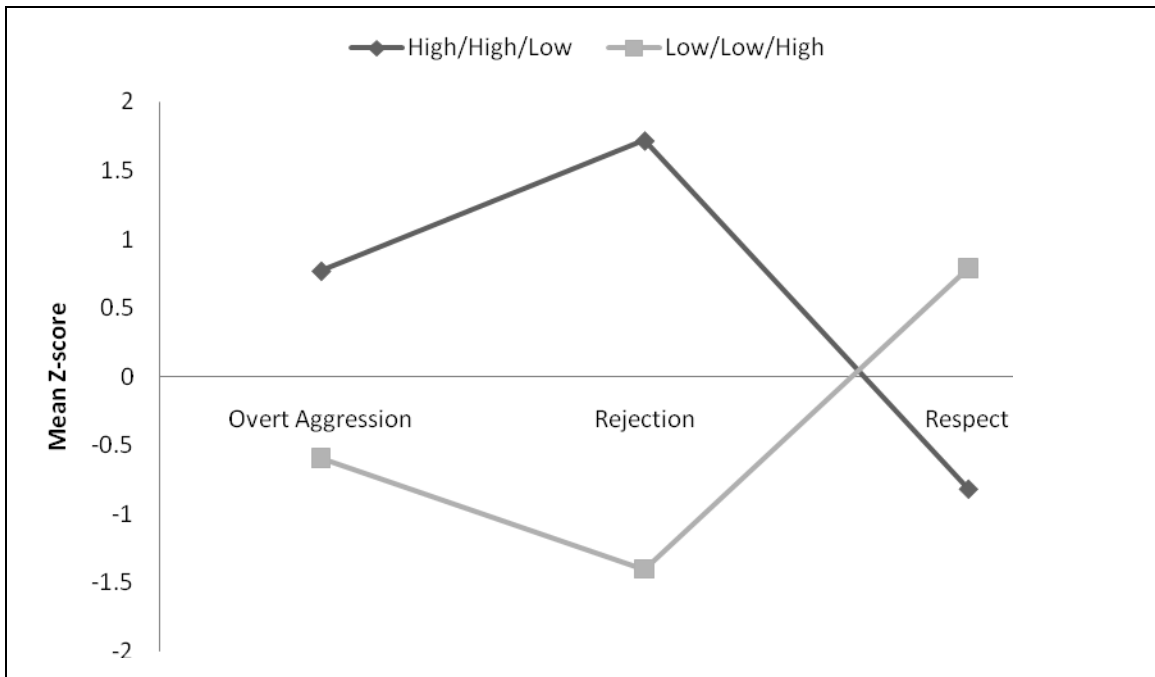


Figure 7. Girls' 2-class model solution for overt aggression, rejection, and respect.

With relational aggression, rejection, and respect for girls, a three-class model was determined (Figure 8). Fit indexes for the three-class model ($Log = -606$, $AIC = 1240$, $BIC = 1281$, $ABIC = 1237$), with one exception ($Entropy = .827$), were improved from the two-class model ($Log = -622$, $AIC = 1264$, $BIC = 1294$, $ABIC = 1262$, $Entropy = .865$). Fit indexes for a possible four-class model solution revealed some mild improvements ($Log = -600$, $AIC = 1237$, $ABIC = 1233$), while some failed to improve ($BIC = 1290$, $Entropy = .787$). Approximately 51.5% ($n = 70$) of the sample were in the Low/Low/High group, 35.3% ($n = 52$) were in the Moderate/Moderate/Moderate group, and 13.2% ($n = 19$) were in the High/High/Low group.

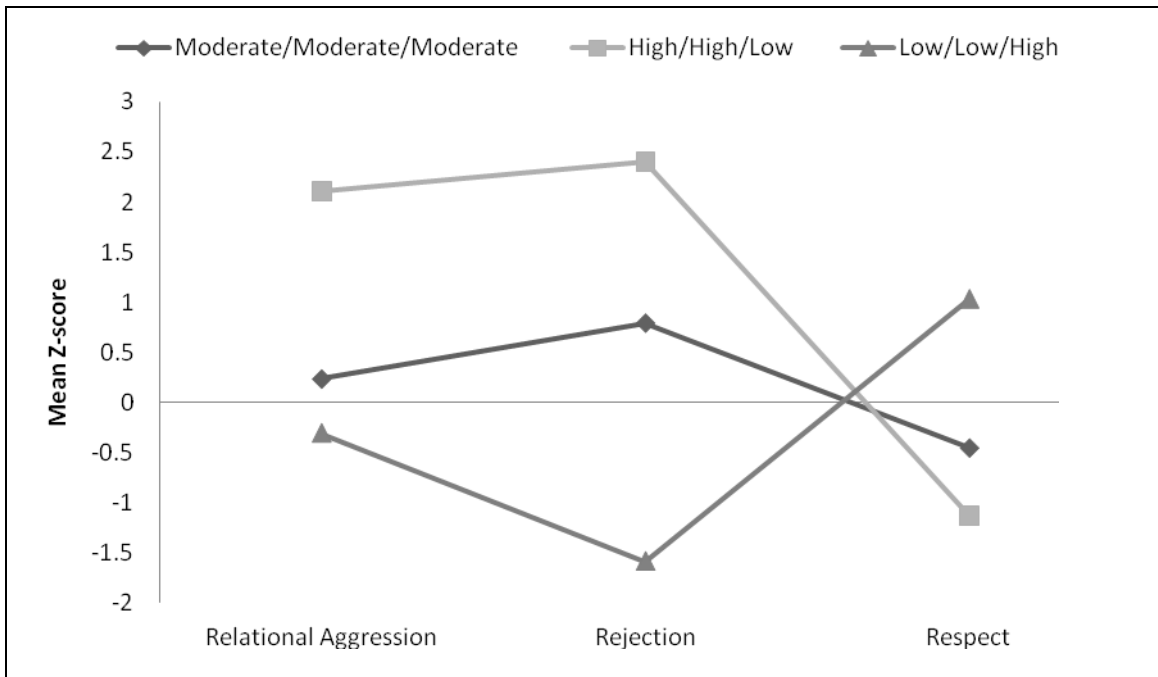


Figure 8. Girls' 3-class model solution for relational aggression, rejection, and respect.

Table 26 displays the LVMM group characteristics for those derived from aggression, rejection, and respect. Given that different groups resulted for boys and girls, subsequent analyses were conducted separately by gender. A total of four MANOVAs were conducted representing the factorial combination of gender and type of aggression, for the following dependent variables: Peer Nominations for Respect, Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness.

Table 26

Data-Driven (Latent Variable Mixture Model) Group Characteristics, Respect Included.

Gender	Aggression Type	Group				<i>n</i>	%	% of Total Sample	
		<i>Aggression/Rejection/Respect</i>							
Boys	Overt	Low	/	Low	/	High	63	47.4	30.7
		Low	/	Moderate	/	Moderate	51	38.3	24.9
		High	/	High	/	Low	19	14.3	9.3
	Relational	Low	/	Low	/	High	62	47.7	30.2
		Low	/	Moderate	/	Moderate	51	39.2	24.9
		High	/	High	/	Low	17	13.1	8.3
Girls	Overt	Low	/	Low	/	High	91	62.7	41.9
		High	/	High	/	Low	55	37.3	25.3
	Relational	Moderate	/	Moderate	/	Moderate	52	35.3	24.0
		High	/	High	/	Low	19	13.2	8.8
		Low	/	Low	/	High	70	51.5	32.3

Boys' data-driven aggression/rejection/respect analysis. A MANOVA using overt aggression identified a multivariate main effect of Aggression/Rejection Group status, multiple $F(8, 254) = 4.47, p < .001$, Wilks' Lambda = .77, for the outcome variables: Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness.

Univariate follow-ups for Aggression/Rejection/Respect groups indicated significant effects for Self-Perceived Social Competence, $F(2, 130) = 11.19, p < .001$, and Self-Perceptions of Loneliness $F(2, 130) = 15.86, p < .001$. Tukey's post hoc tests were conducted to specify individual group differences. Boys in the Low/Low/High group had significantly higher Self-Perceived Social Competence scores than the

Low/Moderate/Moderate and High/High/Low groups, which did not differ (Low/Low/High > Low/Moderate/Moderate = High/High/Low). Regarding Self-Perceptions of Loneliness, boys in the Low/Low/High and Low/Moderate/Moderate groups did not differ, but had significantly lower scores than boys in the High/High/Low group (i.e., Low/Low/High = Low/Moderate/Moderate > High/High/Low). Means and standard deviations for these effects may be found in Table 27 and post hoc results are found in Table 28.

Table 27

Boys' Means and Standard Deviations (SD) using Data-Driven Overt Aggression/Rejection/Respect Groups (n = 133).

Group (^a / ^b / ^c)	Measures			
	Global Competence	Perception of Peers	Loneliness	Social Competence
Low / Low / High	.10(1.08)	-.04(1.15)	-.16 (.89)	.21 (.90)
Low / Moderate/Moderate	-.16(1.01)	-.12 (.93)	.17(1.02)	-.35(1.11)
High / High / Low	-.50(1.22)	-.62(1.20)	1.35(1.41)	-1.01(1.27)

Note. High versus low group status is organized and presented by aggression/rejection/respect levels.

^a = Aggression level (high, moderate, or low), ^b = Rejection level (high, moderate, or low), ^c = Respect level (high, moderate, or low)

Table 28

Tukey-Kramer Comparisons of Boys' Overt Aggression/Rejection/Respect (Data-Driven) Groups and Study Measures.

Groupings by Latent Variable Mixture Model (LVMM)

Study Variable	(I) Group (^a / ^b / ^c)	(J) Group (^a / ^b / ^c)	Mean (I-J) Difference
Loneliness	Low / Low / High	Low /Moderate/Moderate	-.3304
		High / High / Low	-1.5092*
	Low /Moderate/Moderate	High / High / Low	-1.1787*
Social			
Competence	Low / Low / High	Low /Moderate/Moderate	.5637*
		High / High / Low	1.2245*
	Low /Moderate/Moderate	High / High / Low	.6608

^a = Aggression level (high, moderate, or low), ^b = Rejection level (high, moderate, or low), ^c = Respect level (high, moderate, or low)

* $p < .05$.

For boys, a MANOVA using relational aggression did not find a multivariate main effect of group status (i.e., Aggression/Rejection/Respect Group), multiple $F(8, 248) = 1.53, p > .05$, Wilks' Lambda = .91, for the dependent variables, Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness. Means and standard deviations for these effects may be found in Table 29.

Table 29

Boys' Means and Standard Deviations (SD) for Data-Driven Relational Aggression/Rejection/Respect Groups (n = 130).

Group (^a / ^b / ^c)	Measures			
	Global Competence	Perception of Peers	Loneliness	Social Competence
Low / Low / High	.03(1.09)	-.05(1.22)	-.07 (.88)	.14 (.91)
Low / Moderate/Moderate	-.12(1.11)	-.13 (.93)	.37(1.15)	-.43(1.09)
High / High / Low	-.22(1.09)	-.52(1.12)	.26(1.30)	-.37(1.28)

Note. High versus low group status is organized and presented by aggression/rejection/respect levels.

^a = Aggression level (high, moderate, or low), ^b = Rejection level (high, moderate, or low), ^c = Respect level (high, moderate, or low)

Summary of boys' data-driven aggression/rejection/respect analyses. A main effect was only identified for Aggression/Rejection/Respect Group when using overt aggression. Significant Aggression/Rejection/Respect Group differences were identified for Self-Perceived Social Competence and Self-Perceptions of Loneliness. Boys in the Low/Low/High group displayed more favorable outcomes than boys in the High/High/Low group. Specifically, the Low/Low/High group had higher scores on Self-Perceived Social Competence than other groups, while the Low/Low/High and Low/Moderate/Moderate groups did not differ and had lower scores on Self-Perceptions of Loneliness. No main effect was found for boys using relational aggression.

Girls' data-driven aggression/rejection/respect analysis. MANOVAs did not find multivariate main effects of group status (i.e., Aggression/Rejection/Respect Group) using overt aggression, multiple $F(4, 141) = .83, p > .05$, Wilks' Lambda = .98, or

relational aggression, multiple $F(8, 248) = 1.53, p > .05$, Wilks' Lambda = .91, for the outcome variables: Self-Perceived Social Competence, Self-Perceived Global Competence, Overall Peer Ratings Score, and Self-Perceptions of Loneliness. Means and standard deviations for these effects may be found in Tables 30 and 31. In summary, no main effects were identified for data-driven Aggression/Rejection/Respect groups for girls regardless aggression type (i.e., overt or relational).

Table 30

Girls' Means and Standard Deviations (SD) for Data-Driven Overt Aggression/Rejection/Respect Groups (n = 146).

Group (^a / ^b / ^c)	Measures			
	Self-Perception	Perception of Peers	Loneliness	Social Competence
Low / Low / High	.06 (.89)	.18 (.85)	-.16 (.92)	.19 (.91)
High / High / Low	-.02(1.14)	.04(1.12)	.09 (.98)	-.01(1.03)

Note. High versus low group status is organized and presented by aggression/rejection/respect levels.

^a = Aggression level (high, moderate, or low), ^b = Rejection level (high, moderate, or low), ^c = Respect level (high, moderate, or low)

Table 31

Girls' Means and Standard Deviations (SD) for Data-Driven Relational Aggression/Rejection/Respect Groups (n = 141).

Group (^a / ^b / ^c)	Measures			
	Self-Perception	Perception of Peers	Loneliness	Social Competence
Moderate/Moderate/Moderate	-.12(1.02)	.01 (.93)	-.01 (.03)	-.01 (.95)
High / High / Low	.30(1.08)	-.08(1.22)	-.11 (.99)	.26(1.07)
Low / Low / High	.04 (.85)	.32 (.80)	-.14 (.93)	.25 (.85)

Note. High versus low group status is organized and presented by aggression/rejection/respect levels.

^a = Aggression level (high, moderate, or low), ^b = Rejection level (high, moderate, or low), ^c = Respect level (high, moderate, or low)

Discussion

An extensive literature documents the negative social consequences of being rejected by peers. An equally extensive literature documents the negative social consequences of exhibiting aggressive behavior. Furthermore, the combination of being rejected and being aggressive carries an even greater probability of bad consequences than being just one. The present research adds to this research in two ways. First, the present research considered the reasonable possibility that a positive social characteristic, being respected by peers, might mitigate the consequences of peer rejection and/or aggression. Second, the present research evaluated models of these effects generated by a traditional versus data-driven approach.

Differences in psychosocial outcome measures were observed between groups of children. For both traditional and data-driven analyses, group differences were identified

for respect nominations regardless of sex or aggression type. Significant traditional group variations were most commonly observed for levels of loneliness and social competence, and interestingly respect presented similar moderating effects on these outcomes for boys and girls. For both overt and relational aggression, boy and girl traditional groups differed in levels of loneliness and social competence when respect was excluded, though these differences did not appear with the inclusion of respect. Data-driven groups displayed different outcomes based on gender, type of aggression, and the inclusion/exclusion of respect as a grouping factor. For overt aggression in boys, groups differed in levels of loneliness and global competence when respect was excluded from grouping characteristics. However, with the inclusion of respect these groups still differed in levels of loneliness, but, alternatively, they also differed in levels of social competence. Data-driven group differences did not appear for boys when considering relational aggression, with and without respect as a grouping variable. Similarly for girls' data-driven groups, no differences were identified using overt or relational aggression, regardless of the inclusion of respect as a grouping characteristic. These results suggest that although Aggression/Rejection groups consistently differ in levels of respect, the inclusion of respect as a grouping variable did not seem to facilitate the identification of other unique group psychosocial characteristics. It is unclear how the different methods of grouping (i.e., traditional and data-driven) may have affected the data, but nonetheless it is important for researchers to consider both grouping methods when evaluating group characteristics.

As predicted, results of the eight latent variable mixture models (LVMM's) confirmed distinct groups of children within the current non-clinical sample, based on aggression and rejection, and also with the addition of respect nominations. Two to three distinct group profiles emerged for each LVMM, which suggests that naturally occurring classes of children do commonly exist when considering these particular grouping variables. Universally, two particular profiles of children always emerged together for all analyses. When respect was not included, a group of low aggression and low rejection children was always present as was a group of high aggression and high rejection. When including respect, the same groups emerged with high respect in the first group and low respect in the second group, respectively. A third group of moderate aggression and moderate rejection was identified for overt aggression in boys and relational aggression in girls (respect not included). Given this third distinct group of moderate characteristics, it is possible that boys and girls engage in more complex social interactions when involved in particular types of aggression. Specifically, social complexities may be more common when boys are involved in various overtly aggressive behaviors and when girls are implicated in relationally aggressive interactions. Further, group respect levels varied explicitly as a function of rejection level, in a typically inverse arrangement. As such, each group's respect level was; high when rejection was low, low when rejection was high, or moderate when rejection was moderate. Future research may explore such groupings for qualitative and functional differences in aggression use, additional group characteristics, and/or other psychosocial outcomes.

As expected, children who were high on both aggression and rejection experienced greater social competence problems than other groups, and greater respect nominations for this group would not improve measured outcomes. Girls who were low on aggression (overt and relational) and rejection were typically more respected than those who were high on only rejection or high on both (aggression and rejection). Boys' scores for overt aggression indicated that those who were low on both aggression and rejection or were high only on aggression had greater levels of respect and social competence, and lower loneliness, than the other groups. In consideration of this, girls and boys were generally more respected when they experienced low levels of rejection, regardless of type or level of aggression. Regarding respect's influence on outcomes for groups of children high on both aggression and rejection, limited evidence was found. No groups in the study were inclusively all high or low on all three grouping variables (e.g., high aggression, high rejection, high respect). As such, it is plausible that respect may not affect outcomes for children who are relatively high in aggression and rejection, since these children may rarely have the experience of being highly respected. To summarize, respect did not appear to buffer the negative effects of being high on both aggression and rejection, given that children who were in the Aggressive/Rejected group did not ever have a high level of respect nominations.

The traditional group analyses suggested that girls high only in overt aggression were significantly more respected than girls who were high only on rejection or both (overt aggression and rejection), but were also less respected than girls low in both. Because this was a non-clinical sample, it is clear that even small amounts of overt

aggression are distinguishable through socio-behavioral profiles (e.g., aggression, rejection, and respect) and have variable psychosocial outcomes. Findings suggested that data-driven group profiles for girls high only in overt aggression may not commonly exist, but traditional group evidence suggested even low levels of overt aggression in girls were related to worse psychosocial outcomes (i.e., fewer respect nominations).

Given the exploratory nature of the LVMM generated groupings it was important to provide descriptions of the groupings, discuss differences between grouping methods and outcomes, and observe any gender differences. Differences emerged between both grouping method and gender. For traditional groupings, group differences in both loneliness and social acceptance were observed for children when considering both overt and relational aggression, but only with the exclusion of respect as a grouping variable. For data-driven groupings, boys with relatively high overt aggression and high rejection reported higher global competence and lower loneliness than other groups, while girls' groups did not show differences in outcome variables (with the exception of respect level). When considering respect as a grouping variable, boys with relatively high overt aggression, high rejection, and low respect were reportedly lonelier and less socially competent than children with low levels of overt aggression, low rejection, and high respect. Girls' equivalent data-driven groups generally did not show group differences (with the exception of respect level).

Interestingly, self-perceptions and one's perception of peers did not appear to vary between groups of children. That is, in the current study children's global competence and general perception of their peers were not typically affected by their group

placement, if at all. For example, children who were relatively high on both aggression and rejection generally showed no differences in their perceptions when compared to children low on both aggression and rejection. It cannot be concluded that such group differences do not exist, but rather they were not identified in the current study. It is possible that group differences were not able to be detected in this sample of children who generally experience mild levels of peer adversity (e.g., aggression and rejection). Alternative measures of perception should be implemented in future research to provide breadth in the measurement of these constructs.

In light of the aforementioned findings, it is important to consider that these results described a sample of non-clinical children and revealed distinct groups with generally low levels of negative attributes (i.e., aggression and rejection). Potential groups of children with more extreme attributes were not identified within the current study, as their number is likely to be few and they would have been incorporated in a much larger and more common group of children. However, current findings suggest that mild rejection levels may be more important than mild aggressive behaviors in predicting psychosocial outcomes in normal populations, especially when considering respect. To study more extreme attributes in children, researchers will want to recruit a larger sample and more clinically appropriate sample.

Future research using prospective designs should consider using separate samples for each method of grouping to directly compare group outcomes across grouping methods. For example, a traditional High/High group could be directly, statistically compared to a data-driven High/High group. Researchers may attempt to answer whether

specific traditional groups are qualitatively different than their respective, corresponding data-driven groups. Direct comparisons across methods would allow for a better understanding of how similar groups might differ through different means of group assignment. At best, the current study provides evidence that the different methods of group generation tended to result in both similarities and differences on outcome measures.

Over time, children's profiles and outcomes may change systematically. For example, if the importance of peer relationships increases through childhood, we might expect rejection to have increasingly detrimental effects on children as they get older. The current study was limited to concurrent relations between variables, though temporal relationships of interest may be pursued through future longitudinal studies.

In conclusion, the present study revealed distinct groups of children. Results highlighted worse psychosocial outcomes for groups high in both aggression and rejection, while rejection level (over and above aggression level) consistently (and inversely) predicted respect level. The inclusion of respect as a grouping variable did not appear to aid in identifying other psychosocial group characteristics, yet it allowed for the identification of unique traditional and data-driven groups. As such, when aggression and rejection groupings are considered, respect by peers hinders or muddles the identification of group differences on outcome measures. These findings highlight the importance of identifying groups or subtypes of children with measures of aggression and rejection. Further, groups should be derived differently, such as traditional and data-driven in the current study, to promote diversity in methodology. In sum, children who

are aggressive and rejected have worse psychosocial outcomes, but not when considering respect nominations, and the study of such subgroups, in addition to whole sample effects, through various grouping methods and analyses is crucial to understanding psychosocial processes in children.

References

- Ambert, A.-M. (1994). A quality study of peer abuse and its effects: Theoretical and empirical implications. *Journal of Marriage and the Family*, *56*, 119-130.
- Asher, S. R., Hymel, S., & Renshaw, P. D. (1984). Loneliness in children. *Child Development*, *55*, 1456-1464.
- Bierman, K. L. (2004). *Peer Rejection: Developmental Processes and Intervention Strategies*. New York: The Guilford Press.
- Bierman, K. L., Smoot, D. L., & Aumiller, K. (1993). Characteristics of aggressive-rejected, aggressive (nonrejected), and rejected (nonaggressive) boys. *Child Development*, *64*, 139-151.
- Bierman, K. L., & Wargo, J. B. (1995). Predicting the longitudinal course associated with aggressive-rejected, aggressive (nonrejected), and rejected (nonaggressive) status. *Development and Psychopathology*, *7*, 669-682.
- Buhrmester, D., & Furman, W. (1987). The development of companionship and intimacy. *Child Development*, *58*, 1101-1113.
- Celeux, G., & Soromenho, G. (1996). An entropy criterion for assessing the number of clusters in a mixture model. *Journal of Classification*, *13*, 195-212.
- Chen, X., He, Y., & Li, D. (2004). Self-perceptions of social competence and self-worth in Chinese children: Relations with social and school performance. *Social Development*, *13*, 570-589.
- Cillessen, A. H., van IJzendoorn, H. W., van Lieshout, C. F., & Hartup, W. W. (1992). Heterogeneity among peer-rejected boys: Subtypes and stabilities. *Child Development*, *63*, 893-905.
- Cohen, R., Hsueh, Y., Zhou, Z., Hancock, M., & Floyd, R. (2006). Respect, liking, and peer social competence in China and the United States. *New Directions for Child and Adolescent Development*, *114*, 53-65.
- Coie, J. D., Belding, M., & Underwood, M. (1988). Aggression and peer rejection in childhood. In B. B. Lahey & A. E. Kazdin (Eds.), *Advances in Clinical Child Psychology: Vol. 11* (pp. 125-158). New York, NY: Plenum Press.

- Coie, J., Dodge, K., & Lynam, D. (2006). Aggression and antisocial behavior in youth In N. Eisenberg, W. Damon, R. M. Lerner (Eds.), *Handbook of child psychology: Vol. 3, Social, emotional, and personality* (6th ed., pp. 719-788). Hoboken, NJ: John Wiley & Sons Inc.
- Coie, J.D., Dodge, K.A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology, 18*(4), 557-570.
- Coplan, R. J., Closson, L. M., & Arbeau, K. A. (2007). Gender differences in the behavioral associates of loneliness and social dissatisfaction in kindergarten. *Journal of Child Psychology and Psychiatry, 48*, 988-995.
- Crick, N. R. (1996). The role of overt aggression, relational aggression, and prosocial behavior in children's future social adjustment. *Child Development, 67*, 2317-2327.
- Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological aggression. *Child Development, 66*, 710-722.
- Crick, N. R., & Grotpeter, J. K. (1996). Children's treatment by peers: Victims of relational and overt aggression. *Development and Psychopathology, 8*, 367-380.
- Cullerton-Sen, C., & Crick, N. R. (2005). Understanding the Effects of Physical and Relational Victimization: The Utility of Multiple Perspectives in Predicting Social-Emotional Adjustment. *The School Psychology Review, 34*, 147-160.
- Davidson, L. M., & Demaray, M. K. (2007). Social support as a moderator between victimization and internalizing-externalizing distress from bullying. *School Psychology Review, 36*, 383-405.
- Diamantopoulou, S., Rydell, A.-M., & Henricsson, L. (2008). Can both low and high self-esteem be related to aggression in children? *Social Development, 17*, 682-698.
- Dodge, K.A., & Coie, J.D. (1987). Social-information processing factors in reactive and proactive aggression in children's peer groups. *Journal of Personality and Social Psychology, 53*, 1146-1158.
- Furman, W., & Buhrmester, D. (1992). Age and sex differences in perceptions of networks of personal relationships. *Child Development, 63*, 103-115.
- Harter, S. (1985). The self-perception profile for children: revision of the perceived competence scale for children. Denver: Manual, University of Denver.

- Harter, S. (1990). Issues in the assessment of the self-concept of children and adolescents. In A. La Greca (Ed.), *Childhood assessment: Through the eyes of a child*. Boston, MA: Allyn and Bacon.
- Heilbron, N., & Prinstein, M. J. (2008). A review and reconceptualization of social aggression: Adaptive and maladaptive correlates. *Clinical Child and Family Psychology Review, 11*, 176–217.
- Hsueh, Y., Zhou, Z., Cohen, R., Hundley, R. J., & Deptula, D. P. (2005). Knowing and showing respect: Chinese and U.S. children's understood of respect and its association to their friendships. *Journal of Psychology in Chinese Societies. Special Issue: Language and Cognition, 6*, 229-260.
- Kuryluk, A. (2008). *The Role of Respect in the Relation between Aggression and Popularity*. Unpublished master's thesis, University of Memphis, Memphis, TN.
- Lansford, J. E., Putallaz, M., Grimes, C. L., Schiro-Osman, K. A., Kupersmidt, J. B., & Coie, J. D. (2006). Perceptions of friendship quality and observed behaviors with friends: How do sociometrically rejected, average, and popular girls differ? *Merrill-Palmer Quarterly, 52*, 694-720.
- Ladd, G. W., & Troop-Gordon, W. (2003). The role of chronic peer difficulties of children's psychological adjustment problems. *Child Development, 74*, 1344-1367.
- Laursen, B., & Hoff, E. (2006). Person-centered and variable-centered approaches to longitudinal data. *Merrill-Palmer Quarterly, 52*, 377-389.
- Masten, A.S., Morison, P., & Pellegrini, D.S. (1985). A Revised Class Play Method of peer assessment. *Developmental Psychology, 21*, 523-533.
- Miller-Johnson, S., Coie, J. D., Maumary-Gremaud, A., & Bierman, K. (2002). Peer rejection and aggression and early starter models of conduct disorder. *Journal of Abnormal Child Psychology, 30*, 217-230.
- Muthén, L.K., & Muthén, B.O. (1998-2007). *Mplus User's Guide*. Fifth Edition. Los Angeles, CA: Muthén & Muthén.
- Newcomb, A. F., Bukowski, W. M., & Pattee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average sociometric status. *Psychological Bulletin, 113*, 99-128.
- Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological Bulletin, 102*, 357-389.

- Pedersen, S., Vitaro, F., Barker, E. D., & Borge, A. I. H. (2007). The timing of middle-childhood peer rejection and friendship: Linking early behavior to early-adolescent adjustment. *Child Development, 78*, 1037-1051.
- Rubin, K. H., Bukowski, W. M., & Parker, J. G. (2006). Peer interactions, relationships, and groups. In N. Eisenberg, W. Damon, R. M. Lerner (Eds.), *Handbook of child psychology: Vol. 3, Social, emotional, and personality* (6th ed., pp. 571-645). Hoboken, NJ: John Wiley & Sons Inc.
- Salmivalli, C., & Issacs, J. (2005). Prospective relations among victimization, rejection, friendlessness, and children's self- and peer-perceptions. *Child Development, 76*, 1161-1171.
- Schwartz, G. (1978). Estimating the dimension of a model. *The Annals of Statistics, 5*, 461-464.
- Shevlin, M., Adamson, G., & Collins, K. (2003). The Self-Perception Profile for Children (SPPC): A multiple-indicator multiple-wave analysis using LISREL. *Personality and Individual Differences, 35*, 1993-2005.
- Sundermier Clark, M. (2007). Predictors of social competence in middle childhood: Discriminating between peer status groups. *Dissertation Abstracts International Section A: Humanities and Social Sciences, 68*(4-A), 1330.
- Uher, R., Muthén, B., Souery, D., Mors, O., Jaracz, J., Placentino, A. et al. (2009). Trajectories of change in depression severity during treatment with antidepressants. *Psychological Medicine, 29*, 1-11.
- Vaillancourt, T. (2005). Indirect aggression among humans: Social construct or evolutionary adaptation? In R. Tremblay, W. Hartup, and J. Archer (Eds.), *Developmental origins of aggression* (pp. 158-177). New York: Guilford Press.
- Verschueren, K., & Marcoen, A. (2002). Perceptions of self and relationship with parents in aggressive and nonaggressive rejected children. *Journal of School Psychology, 40*, 501-522.
- Volling, B. L., MacKinnon-Lewis, C., Rabiner, D., & Baradaran, L. P. (1993). Children's social competence and sociometric status: Further exploration of aggression, social withdrawal, and peer rejection. *Development and Psychopathology, 5*, 459-483.

Wood, J., Emmerson, N. A., & Cowan, P. A. (2004). Is early attachment security carried forward into relationships with preschool peers? *British Journal of Developmental Psychology*, 22, 245-253.

Xu, Y., & Zhang, Z. (2008). Distinguishing proactive and reactive aggression in Chinese children. *Journal of Abnormal Psychology*, 36, 539-552.