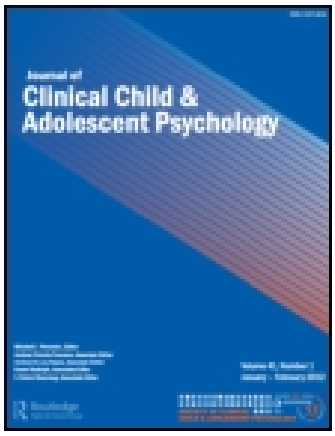

Journal of Clinical Child & Adolescent Psychology
Publication details, including instructions for authors and subscription information:
http://www.tandfonline.com/loi/hcap20

Use of Latent Profile Analysis to Assess the Validity of a Peer-Rejected Group of Children

Julie A. Hubbard [a], Marissa A. Smith [a] & Ronnie M. Rubin [b]
[a] Department of Psychology, University of Delaware
[b] Philadelphia, PA
Published online: 09 Jun 2013.

Journal of Clinical Child & Adolescent Psychology, 42(6), 843–854, 2013

ISSN: 1537-4416 print/1537-4424 online
DOI: 10.1080/15374416.2013.804410

Use of Latent Profile Analysis to Assess the Validity of a Peer-Rejected Group of Children

Julie A. Hubbard and Marissa A. Smith
Department of Psychology, University of Delaware

Ronnie M. Rubin
Philadelphia, PA

The goal of this article was to validate the existence and qualities of a peer-rejected group of children using latent profile analysis (LPA). Two separate racially/ethnically diverse samples (Study 1: $N = 2{,}052$ second graders; Study 2: $N = 594$ fourth and fifth graders) completed peer nominations of liking and disliking, from which we calculated Social Preference and Social Impact scores. These scores served as indicators in the LPAs to form LPA groups. In addition, we collected self-, teacher-, and peer-report report data on aggression, depressive symptoms, peer victimization, and social competence. In each sample, an LPA group emerged in which most children were classified as rejected using the Coie, Dodge, and Coppotelli (1982; CDC) approach (Study 1: 95%; Study 2: 86%). However, in both samples, only a minority of children classified as rejected using the CDC approach fell into this LPA group (Study 1: 46%; Study 2: 36%). The LPA group that mirrored the CDC rejected group received more maladjusted scores than all other LPA groups on aggression, depressive symptoms, peer victimization, and social competence. Furthermore, when compared to children classified as rejected using only the CDC approach, children classified as rejected under both the LPA and CDC approaches were more maladjusted in terms of all sociometric and socioemotional variables. LPA analyses across two developmental levels validated the existence of an empirically derived group of children who overlapped closely with the CDC rejected group. However, this group was considerably smaller and more maladjusted than the CDC rejected group.

Developmental psychologists and peer relations researchers have relied heavily on sociometric methods to understand children's social development, peer interactions, and psychological adjustment. These methods are rooted in Moreno's (1934) model of sociometric judgment. Since the introduction of this foundational model, sociometric techniques have undergone several iterations (e.g., Bronfenbrenner, 1945; Peery, 1979), eventually leading to the development of the Coie, Dodge, and Coppotelli (CDC; 1982) system that is still the most prevalent today. In this system, researchers collect peer nominations of liking and disliking and use these nomination data to create continuous variables of social preference (SP) and social impact (SI). Next, they use cutoff scores to classify children into five sociometric status groups (popular, rejected, neglected, controversial, and average).

Over the past decade or two, investigations of popular, neglected, and controversial children have dwindled because these groups are not as stable or as consistently associated with negative characteristics or outcomes as rejected children (Prinstein, Rancourt, Guerry, & Browne, 2009). However, a focus on the peer-rejected group (characterized by low SP and high SI) persists,

This project was supported by grant number MH57788 from the National Institute of Mental Health. We thank the children, parents, teachers, and principals who made this project possible.

Correspondence should be addressed to Julie A. Hubbard, Department of Psychology, University of Delaware, Newark, DE 19716. E-mail: jhubbard@psych.udel.edu

largely due to a wealth of previous research that has found these children to be quite maladjusted across concurrent behavioral, social-cognitive, and emotional domains, as well as in terms of long-term outcomes. For example, rejected children are more likely than other children to engage in aggressive behaviors toward peers, withdraw from interactions with peers, be victimized by peers, evidence poorer social competence and social skills, and display depressed mood (e.g., Boivin, Poulin, & Vitaro, 1994; Coie & Dodge, 1998; Coie, Terry, Lenox, Lochman, & Hyman, 1995; Hammen & Rudolph, 2003; Khatri, Kupersmidt, & Patterson, 2000; Miller-Johnson, Coie, Maumary-Gremaud, Bierman, & Conduct Problems Prevention Research Group, 2002; Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006).

However, some researchers have questioned the validity of this group of rejected children because the CDC system used to identify rejected children in the bulk of studies has several limitations. First, the sociometric groups formed by the CDC method are essentially artificial (Cillessen & Bukowski, 2000), because these groups are based on subjective cutoff scores for SP and SI that do not correspond to underlying psychological constructs (Thompson & Powell, 1951). In addition, the CDC method parses the continuous variables of SP and SI to create distinct groups, which diminishes the sensitivity of these underlying variables (Cillessen & Bukowski, 2000).

Many researchers have addressed these limitations by moving to the use of continuous SP scores as an index of peer rejection, and this approach has many advantages. At the same time, it would be valuable if we could gather evidence in support of the validity of the peer-rejected group as identified using the CDC system. Much of the foundational research in the peer relations field is built around understanding and developing interventions for these children. The overarching aim of the current study was to assess the validity of this body of research by evaluating whether a group of rejected children emerges when a more empirical approach is used to classify children into sociometric status categories. If an empirical approach does indeed reveal a group of rejected children that maps closely onto the CDC rejected group, these findings would address criticisms of the CDC approach as a means of identifying rejected children. Moreover, results would allow us to maintain confidence in previous research on rejected children identified using the CDC approach. Conversely, if the findings of the current study were to suggest that a distinct rejected group does not emerge empirically, or that an empirically derived rejected group differs substantially from the CDC rejected group, such results could have important implications for the trajectory of future basic and applied research on children's peer rejection.

Fairly recently, empirical procedures have emerged that allow us to determine how individuals best cluster into groups. Latent profile analysis (LPA) is one such statistical advance; this approach identifies the smallest number of latent groups required to account for the distribution of individuals across indicators (McCutcheon, 1987; Walrath et al., 2004). LPA is a type of latent class analysis (LCA) in which all indicators are continuous. LCA and LPA are considered improvements over cluster analysis because the number of groups that best fits the data is determined statistically rather than subjectively (Pastor, Barron, Miller, & Davis, 2007). Furthermore, this approach provides data on the probability that each individual is a member of each group, allowing for the evaluation of how well the model classifies individuals (McLachlan & Peel, 2000; Whiteman & Loken, 2006).

Admittedly, LPA analyses are not a practical solution to the formation of sociometric status groups in routine studies of children's peer relations. These analyses are complex to conduct and are sample specific in that they yield groups that differ at least slightly from study to study. For these reasons, we are not suggesting that peer relations researchers move toward the routine use of LPA to identify rejected children. However, LPA is a useful technique for validating the existence and characteristics of a group of children who are strongly disliked by their peers.

The goals of the current study were fivefold. Our first goal was to determine whether a group of rejected children (those with low SP and high SI) emerged when we used LPA to cluster children into groups based on SP and SI scores. Our second goal was to assess how this LPA rejected group mapped onto the CDC rejected group. Our third goal was to examine the characteristics of children in this LPA rejected group; we were especially interested to determine whether this group differed from other LPA groups on aggression, depressive symptoms, peer victimization, and social competence. Our fourth goal was to compare two groups of children: (a) those classified as rejected using both the CDC and LPA approaches, and (b) those classified as rejected using the CDC approach but not the LPA approach. Our hypothesis was that that the first group would display greater maladjustment than the second group. Our final goal was to address these questions in two samples of children, a second-grade sample and a fourth- and fifth-grade sample. These two age groups were chosen because they represent a developmental continuum across which peer rejection emerges and solidifies (Bierman, 2004). If a rejected group emerged at both developmental levels through LPA, these findings would further solidify our confidence in the existence and importance of this group.

METHOD

In Study 1, 2,052 second-grade children completed peer nominations of liking, disliking, and aggression. In Study 2, 594 fourth- and fifth-grade children completed peer nominations of liking and disliking; in addition, children, teachers, and peers completed measures of aggression, depressive symptoms, peer victimization, and social competence.

STUDY 1

Participants

Participants included all children with parental permission and child assent in 134 second-grade classrooms in one parochial (17%) and four public (51%, 19%, 10%, and 3%) school districts that included both urban and suburban communities in a mid-Atlantic state ($N = 2{,}052$). Fifty percent of participants were female. Children were approximately 8 years old. The racial/ethnic breakdown of the sample was 70% European American, 22% African American, 6% Hispanic American, 1% Asian American, and 1% Other. Approximately 35% of children were classified as low income and qualified for free/reduced-price lunch. Teachers distributed parental permission forms for children to take home and return; in addition, children completed a child assent form on the day of data collection. The average classroom participation rate was 69%, with a range from 40% to 93%.

Data Collection Procedures and Measures

Approximately six interviewers conducted 1-hr visits in each classroom to collect peer-report data. We interviewed each child privately and individually for approximately 15 min to collect the measures described next. We compensated participating classrooms with $100 to use for supplies or activities.

Peer nominations of liking and disliking. We asked children to name an unlimited number of classmates whom they "like a lot." Next, we asked them to name an unlimited number of children in their classroom whom "you don't like very much" (children generated names spontaneously, without the aid of pictures or rosters). We summed and standardized the numbers of liking and disliking nominations received by each child within each classroom. We calculated SP as the standardized difference between liking and disliking scores and SI as the standardized sum of liking and disliking scores.

Peer nominations of aggression. We asked children to nominate classmates for these items: "Who starts fights?" "Who yells and calls other kids mean names?" and "Who hits and pushes other kids?" We summed, standardized within classroom, and averaged the number of nominations each child received on each item. These calculations resulted in a continuous score for Peer-Report (PR) Aggression for each child (Cronbach's $\alpha = .91$).

The peer nominations used throughout both Studies 1 and 2 are well-established and considered the "gold standard" in the field (e.g., Coie & Dodge, 1983; Coie et al., 1982; Crick & Grotpeter, 1995; Ladd & Kochenderfer-Ladd, 2002; Lefkowitz & Tesiny, 1980, 1984, 1985; Masten, Morison, & Pellegrini, 1985; Parker & Asher, 1993). Their strong psychometric properties are based on the aggregation of data across multiple raters.

STUDY 2

Participants

Participants consisted of all children with parental permission and child assent ($N = 594$) in 40 fourth- and fifth-grade classrooms in one public school district that included both urban and suburban communities in a mid-Atlantic state (the same district that composed 51% of the Study 1 sample). Fifty-two percent of participants were female. The average age of participants was 10.5 years (range = 9.0–13.3 years). Thirty-three percent of parents identified their child's race as European American, 36% as African American, 21% as Hispanic American, 2% as Asian American, 6% as Mixed Race, and 2% as Other. Approximately 35% of children were classified as low income and qualified for free/reduced-price lunch. Teachers distributed parental permission forms for children to take home and return; in addition, children completed a child assent form on the day of data collection. The average classroom participation rate was 67%, with a range from 41% to 87%.

Data Collection Procedures

An experimenter and approximately four undergraduate assistants conducted 1-hr visits to each classroom to collect self- and peer-report data. The experimenter group-administered paper-and-pencil measures to participating children. Undergraduate assistants circulated throughout the room to ensure that children stayed on track, answer children's questions, and maintain privacy. In addition, other assistants worked individually and privately with any children who required reading assistance to complete the measures validly, as

determined beforehand through consultation with the teacher or as needed.

During the classroom visits, teachers received a packet of measures for each participating child. We collected teachers' completed packets approximately 2 weeks later. Classrooms were compensated with $40 to use on supplies or activities.

Measures

Peer nominations of liking and disliking. Children nominated classmates whom they "like a lot" and "don't like very much." As was the case for all peer nomination items described next, we presented each nomination item on the top of a separate page, followed by a list of the child's classmates. Children circled the names of an unlimited number of classmates who fit each description. We calculated SP and SI scores as described previously for Study 1.

Aggression. We assessed aggression through self-, teacher-, and peer-report. Children completed the Aggressive Behaviors Scale of the Youth Self Report (Achenbach, 1991). The Youth Self Report is a widely used and well-validated instrument (Achenbach, 1991). We shortened the measure from 19 to 10 items based on the items considered most developmentally appropriate for fourth and fifth graders, as the measure originally was developed for slightly older children (11–18 years). Previous studies have also used the Aggressive Behaviors Scale with younger children (Kupersmidt & Patterson, 1991; Leary & Katz, 2005). Children rated their own behavior over the past 6 months on a scale of 1 (*not true*) to 3 (*very true or often true*). In the current study, Cronbach's alpha was .74. As was the case for all self- and teacher-report measures described next, we reverse-scored items if necessary and then averaged across items. This measure resulted in a variable labeled Self-Report (SR) Aggression.

Teachers completed the 14-item Aggression Scale of the Teacher Rating Scales (TRS) for Children (ages 6–11) of the Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 1992). The scale has demonstrated strong test–retest reliability, with 2- to 8-week correlations averaging .91, and it correlates highly with other measures of aggression (Reynolds & Kamphaus, 1992). For each item, teachers rated each child's behavior over the past 6 months using a scale ranging from 1 (*never*) to 4 (*always*). Cronbach's alpha was .96 in the current study. This measure resulted in a variable labeled Teacher-Report (TR) Aggression.

Peers nominated classmates who "hit, kick, or push other kids," "yell at or call other kids mean names," and "start fights." As was the case for all peer nominations described next, we standardized the number of nominations each child received for each item within classroom and then summed and restandardized these scores within class to yield a variable labeled PR Aggression (Cronbach's $\alpha = .93$).

Depressive symptoms. We assessed depressive symptoms through self-, teacher-, and peer-report. Children completed the Children's Depression Inventory–Short Version (CDI; Kovacs, 2001). The CDI-S is a 10-item measure that correlates highly ($r = .89$) with the 27-item full CDI and yields results that are generally comparable to the full CDI (Kovacs, 2001). The measure has strong predictive, convergent, and construct validity (e.g., Kovacs, 2001; Mattison, Handford, Kales, Goodman, & McLaughlin, 1990; Saylor, Finch, Spirito, & Bennet, 1984; Worchel, 1990). For each item, children selected one of three statements indicating how they felt over the past 2 weeks, with 1 representing a low level of depressive symptoms and 3 representing a high level of depressive symptoms. In the current study, Cronbach's alpha was .76. This measure resulted in a variable labeled SR Depressive Symptoms.

Teachers completed the nine-item Depression Scale of the TRS for Children (ages 6–11) of the BASC (Reynolds & Kamphaus, 1992). One item referring to suicidal ideation was removed. The scale has demonstrated strong test–retest reliability, with 2- to 8-week correlations of .82, and it correlates highly with other measures of depression (Reynolds & Kamphaus, 1992). For each item, teachers rated each child's behavior over the past 6 months using a scale ranging from 1 (*never*) to 4 (*always*). In the current study, the Cronbach's alpha was .87. This measure resulted in a variable labeled TR Depressive Symptoms.

Peers nominated classmates who "look sad a lot" and "cry a lot." These items yielded a variable labeled PR Depressive Symptoms (Cronbach's $\alpha = .65$).

Peer victimization. We assessed peer victimization through self-, teacher-, and peer-report. Children completed the six-item Peer Victimization Scale (Austin & Joseph, 1996). Higher scores on this measure are associated with higher levels of peer-reported victimization, lower global self-worth, and more symptoms of depression (Callaghan & Joseph, 1995; Neary & Joseph, 1994). Children rated the extent to which items were true for them on a 4-point Likert scale ranging from 1 (*really not true for me*) to 4 (*really true for me*). In the current study, Cronbach's alpha was .84. This measure resulted in the variable SR Peer Victimization.

Teachers completed a seven-item measure created by merging two previous measures of peer victimization by Ladd and Kochenderfer-Ladd (2002) and Perry, Kusel,

and Perry (1988). The Ladd and Kochenderfer-Ladd measure has demonstrated good internal consistency (.79–.90) and acceptable temporal stability (.30–.46) across second to fourth grade. We adapted the Perry et al. measure from their well-validated peer-report scale of peer victimization. For each item, teachers rated each child's behavior over the past 6 months using a scale ranging from 1 (*never*) to 4 (*always*). In the current study, Cronbach's alpha was .93. This measure resulted in the variable TR Peer Victimization.

Children nominated classmates who "get hit, kicked or pushed by other kids" and "get teased, called names or made fun of by other kids." These items yielded a variable labeled PR Peer Victimization (Cronbach's $\alpha = .74$).

Social competence, social skills, and number of friends. We assessed social competence through self-, teacher-, and peer-report. Children completed the six-item Social Competence Scale of Harter's Self-Perception Profile for Children (Harter, 1985). Test–retest reliability for the measure ranges from .75 to .87 (Harter, 1982; Hymel, LeMare, Ditner, & Woody, 1999). The scale correlates with other measures of children's social competence (Hymel et al., 1999). In the current study, Cronbach's alpha was .73. Children rated the extent to which items were true for them on a 4-point Likert scale ranging from 1 (*really not true for me*) to 4 (*really true for me*). The measure resulted in the variable SR Social Competence.

Teachers completed the three-item Social Competence Scale of the Teacher Rating Scale of Child's Actual Behavior (Harter, 1985). This measure has shown adequate test–retest reliability (Cole, Jacquez, & Maschman, 2001; Cole, Martin, Powers, & Truglio, 1996). The TRS included three items presented in the same format as the child scale. In the current study, Cronbach's alpha was .94. The measure resulted in the variable TR Social Competence.

Teachers also completed the 12-item Social Skills Scale of the TRS for Children (ages 6–11) of the BASC (Reynolds & Kamphaus, 1992). This scale has demonstrated adequate test–retest reliability, with 2- to 8-week correlations of .90, and has been shown to correlate highly with other measures of social skills (Reynolds & Kamphaus, 1992). For each item, teachers rated children's behavior over the past 6 months using a scale ranging from 1 (*never*) to 4 (*always*). In the current study, the Cronbach's alpha was .94. The measure resulted in the variable TR Social Skills.

Peers nominated classmates who "make friends easily" and classmates "who are your friends." Two separate variables resulted, PR Social Competence ("makes friends easily") and PR Number of Friends ("who are your friends").

RESULTS

Descriptive Statistics and Preliminary Analyses

Table 1 provides descriptive statistics for each variable in Studies 1 and 2. In terms of bivariate correlations, for Study 1, SP and SI were correlated .00, SP and Aggression were correlated −.52, and SI and Aggression were correlated .44 (for latter two correlations, $p < .01$). Table 2 lists the bivariate correlations among all variables from Study 2.

Classification Into Sociometric Status Categories

We grouped children into sociometric status categories in the two ways described next.

CDC classification method. We classified children into CDC sociometric status groups using the Coie et al. (1982) method. Specifically, we classified children as popular if they received an SP score greater than 1.00, a standardized number of "liked" nominations greater than 0, and a standardized number of "disliked" nominations less than 0. We classified children as rejected if they received an SP score less than −1.00, a standardized number of "liked" nominations less than 0, and a standardized number of "disliked" nominations greater than 0. We classified children as Neglected if

TABLE 1
Descriptive Statistics of Study 1 and Study 2 Variables

	M	*SD*	*Min.*	*Max.*
	Study 1			
Social Preference	0.05	0.97	−3.66	2.61
Social Impact	0.04	0.92	−2.63	2.88
Aggression	−0.01	0.96	−1.38	4.86
	Study 2			
Social Preference	0.04	0.96	−3.26	1.99
Social Impact	−0.09	0.87	−3.73	2.84
SR Aggression	1.36	0.30	1.00	2.90
TR Aggression	1.52	0.59	1.00	3.93
PR Aggression	−0.05	0.90	−1.47	3.82
SR Depressive Symptoms	1.23	0.27	1.00	2.30
TR Depressive Symptoms	1.37	0.42	1.00	3.22
PR Depressive Symptoms	−0.07	0.92	−1.72	4.48
SR Peer Victimization	2.35	0.88	1.00	4.00
TR Peer Victimization	1.37	0.48	1.00	3.57
PR Peer Victimization	−0.05	0.99	−1.68	3.75
SR Social Competence	2.75	0.72	1.00	4.00
TR Social Competence	2.95	0.92	1.00	4.00
TR Social Skills	2.28	0.61	1.00	4.00
PR Social Competence	0.03	0.94	−2.41	2.19
PR Number of Friends	0.01	0.92	−3.10	2.13

Note: Descriptive statistics for teacher-report variables represent raw variables prior to standardization within classroom. SR = Self-Report; TR = Teacher-Report; PR = Peer-Report.

TABLE 2
Study 2 Bivariate Correlations

Variable	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*
1. Social Preference	−.05	−.12**	−.29**	−.31**	−.14**	−.42**	−.40**	−.25**	−.49**	−.55**	.21**	.56**	.38**	.71**	.83**
2. Social Impact	—	.02	.22**	.29**	−.09*	.12**	.04	.04	.10*	.20**	.07	.00	−.06	.12**	.08*
3. SR Aggression		—	.28**	.31**	.39**	.16**	−.01	.23**	.11**	.06	−.15**	−.11**	−.21**	−.11*	−.07
4. TR Aggression			—	.70**	.02	.57**	.07	.14**	.42**	.26**	.07	−.18**	−.44**	−.13**	−.26**
5. PR Aggression				—	−.01	.36**	.03	.15**	.28**	.31**	.08	−.13**	−.41**	−.08*	−.29**
6. SR Depressive Symptoms					—	.08*	.10*	.28**	.07	.09*	−.47**	−.17**	−.10*	−.23**	−.09*
7. TR Depressive Symptoms						—	.44**	.21**	.56**	.39**	−.11**	−.48**	−.35**	−.32**	−.35**
8. PR Depressive Symptoms							—	.11**	.35**	.46**	−.13**	−.44**	−.18**	−.33**	−.38**
9. SR Peer Victimization								—	.19**	.18**	−.49**	−.22**	−.14**	−.26**	−.21**
10. TR Peer Victimization									—	.46**	−.14**	−.53**	−.30**	−.40**	−.42**
11. PR Peer Victimization										—	−.18**	−.45**	−.24**	−.43**	−.47**
12. SR Social Competence											—	.23**	.14**	.29**	.14**
13. TR Social Competence												—	.46**	.58**	.53**
14. TR Social Skills													—	.32**	.33**
15. PR Social Competence														—	.69**
16. PR Number of Friends															—

Note: SR = Self-Report; TR = Teacher-Report; PR = Peer-Report.
$^{*}p < .05$. $^{**}p < .01$.

they received an SI score less than −1.00 and an absolute "liked" score of 0. Finally, we classified children as Controversial if they received an SI score greater than 1.00 and standardized numbers of "liked" and "disliked" nominations that were each greater than 0. We classified all other children as Average.

LPA classification method. We used LPA to determine the number of LPA sociometric status groups that best fit the data and to classify children into these groups. We entered SP and SI scores as indicators in the LPA.

LPA

We conducted LPA using the M*plus* software package (Muthén & Muthén, 1998–2007). LPA models with increasing numbers of groups were fitted to the data. An a priori decision was made to stop testing models with additional groups once at least two of the four fit statistics did not suggest further improvement.

We used several fit statistics to determine the number of groups that best fit the data. The Bayesian Information Criterion (BIC) and the Sample-Size-Adjusted BIC are estimates of model fit; lower numbers represent better-fitting models (Kline, 2005). The Vuong–Lo–Mendell–Rubin likelihood ratio test and the adjusted Lo–Mendell–Rubin likelihood ratio test compare models; significant *p* values suggest that the estimated model fits the data better than a model with one fewer groups (Nylund, Asparouhov, & Muthén, 2007; Walrath et al., 2004).

Study 1 LPA results. Using the a priori decision rule, we ran models with one through seven groups for Study 1. Fit statistics for these seven models are displayed in Table 3. They suggested that a six-group model provides the best fit to the data. The six-group model had the lowest BIC and Sample-Size-Adjusted BIC of all models. The Vuong–Lo–Mendell–Rubin and the adjusted Lo–Mendell–Rubin likelihood ratio tests also suggested that model fit improved as additional groups were added from the one-group model

TABLE 3
Fit Statistics for Latent Profile Analysis Models Representing Increasing Numbers of Groups

No. of Groups	*BIC*	*SSA BIC*	*VLMR p value*	*Adj. LMR p value*
		Study 1		
1	11181	11169	n/a	n/a
2	10860	10838	.0000	.0000
3	10544	10512	.0000	.0000
4	10516	10475	.0001	.0001
5	10485	10434	.0010	.0013
6	10465	10404	.0022	.0028
7	10478	10408	.0768	.0851
		Study 2		
1	3183.110	3170.411	n/a	n/a
2	3143.284	3121.061	.0000	.0000
3	3134.884	3103.137	.0300	.0356
4	3137.406	3096.135	.0069	.0088
5	3148.558	3097.763	.0349	.0402

Note: BIC = Bayesian Information Criterion; SSA BIC = Sample-Size-Adjusted BIC; VLMR = Voung-Lo-Mendell-Rubin Likelihood Ratio Test; Adj. LMR = Lo-Mendell-Rubin Adjusted Likelihood Ratio Test.

TABLE 4
Size, Social Preference, and Social Impact Scores for Each Latent Profile Analysis Sociometric Status Group

Group	*N*	%	*SP*	*SI*
		Study 1		
1	118	9	−0.98	−0.05
2	122	6	−2.18	1.31
3	814	40	0.45	−0.09
4	123	6	−0.65	1.13
5	446	22	−0.23	−1.01
6	359	17	1.09	0.83
		Study 2		
1	43	7	−0.071	−1.456
2	82	14	−1.517	0.451
3	190	32	0.691	0.27
4	279	47	0.089	−0.255

Note: For Study 1, the social preference (SP) means are all significantly different from one another at $p < .05$, and the social impact (SI) means are all significantly different from one another at $p < .05$. For Study 2, the SI means are all significantly different from one another at $p < .05$. The SP scores are all significantly different from one another at $p < .05$, except that the scores for Groups 1 and 4 do not differ.

through the six-group model; however, the seven-group model did not fit the data as well as the six-group model. The sizes of these six groups, along with their mean SP and SI scores, are given in Table 4.

M*plus* output includes scores for the conditional probability that each child is a member of each of the six LPA groups. For the purposes of group comparison and external validation, we assigned children to the group for which they had the highest conditional probability. The average highest conditional probability score was .76 ($SD = 0.16$; range =.34–1.00).

Study 2 LPA results. Using the same a priori decision rule, we ran models with one through five groups for Study 2. Fit statistics for these five models are displayed in Table 3. These fit statistics suggested that a four-group model provides the best fit to the data, although convergence across fit statistics was not as clean as in Study 1. The four-group model had the lowest Sample-Size-Adjusted BIC of all five models. Although the BIC was lowest for the three-group model, this statistic increased only slightly for the four-group model. Finally, the Vuong–Lo–Mendell–Rubin and the adjusted Lo–Mendell–Rubin likelihood ratio tests were significant for groups of all sizes, suggesting that model fit continued to improve as more groups were added. However, p values for these two statistics suggested that improvement in model fit was greater when comparing a four-group model to a three-group model than when comparing a five-group model to a four-group model. Taken together, these results indicate that a four-group model is the best fit for these data. The sizes of these four groups, along with their mean SP and SI scores, are given in Table 4. The average highest conditional probability score for classification into the four LPA groups was .79 ($SD = 0.17$; range = .38–1.00).

Comparison of CDC Groups and LPA Groups

We compared the CDC groups to the LPA groups using simple cross-tabulations conducted separately for Studies 1 and 2. Results of these cross-tabulations are presented in Table 5. For both studies, an LPA group (Group 2) emerged in which most of the children in the group were classified as rejected using the CDC approach (95% for Study 1; 86% for Study 2). However, in both studies, only a minority of the children classified as rejected using the CDC approach fell into LPA group 2 (46% for Study 1; 36% for Study 2).

TABLE 5
Crosstabulation Comparison of CDC and LPA Sociometric Status Groups

	LPA Groups					
CDC Groups	*1*	*2*	*3*	*4*	*5*	*6*
			Study 1			
Average	94 (50%)	0	725 (89%)	35 (28%)	188 (42%)	75 (21%)
Controversial	0	6 (5%)	2 (<1%)	63 (51%)	0	53 (15%)
Neglected	0	0	7 (1%)	0	243 (54%)	0
Popular	0	0	80 (10%)	0	0	231 (64%)
Rejected	94 (50%)	116 (95%)	0	25 (20%)	15 (3%)	0
			Study 2			
Average	22 (25%)	3 (8%)	203 (65%)	99 (63%)	—	—
Controversial	0	0	7 (2%)	9 (6%)	—	—
Neglected	64 (72%)	1 (3%)	8 (3%)	4 (2%)	—	—
Popular	2 (2%)	1 (3%)	82 (26%)	4 (2%)	—	—
Rejected	1 (1%)	31 (86%)	11 (4%)	42 (27%)	—	—

Note. Within each column, numbers in parentheses represent the percentage of children within a latent profile analysis (LPA) group who are classified into each Coie, Dodge, and Coppotelli (1982; CDC) group.

Comparison of LPA Group 2 to Remaining LPA Groups on Aggression, Depressive Symptoms, Peer Rejection, and Social Competence

Study 1. For Study 1, we compared the six LPA groups on PR Aggression, $F(5, 2046) = 261.82$, $p < .001$, $\eta_p^2 = .39$. We followed up with post hoc comparisons using Bonferroni corrections of Group 2 versus the other LPA groups. Peers considered the children in Group 2 ($M = 1.88$) to be more aggressive than children in any other LPA group (Group 4 $M = 1.04$, Group 1 $M = .40$, Group 6 $M = -.17$, Group 3 $M = -.31$, Group 5 $M = -.32$; all comparisons to Group 2 significantly different at $p < .05$).

Study 2. For Study 2, we compared the four LPA groups on all variables (see Table 6), and again followed up with post hoc comparisons using Bonferroni corrections of Group 2 versus the other LPA groups. Few differences emerged for self-report variables. However, Group 2 emerged as the most maladjusted across teacher- and peer-report variables. This group received higher scores than all other groups on TR Depressive Symptoms, PR Depressive Symptoms, TR Peer Victimization, and PR Peer Victimization, and lower scores than all other groups on TR Social Competence, TR Social Skills, PR Social Competence, and PR Number of Friends. Group 2 did not differ from Group 4 on TR Aggression and PR Aggression, but they were rated as higher on these variables than Groups 1 and 3.

TABLE 6
Study 2: Means and Differences in Aggression, Depressive Symptoms, Peer Victimization, and Social Competence Across the Four Latent Profile Analysis Sociometric Status Groups

Group	*1*	*2*	*3*	*4*	*F value*	η_p^2
SR Aggress	1.35_a	1.40_a	1.34_a	1.40_a	1.49	.01
TR Aggress	-0.14_a	$.58_b$	$-.16_a$	$.25_b$	11.84***	.06
PR Aggress	-0.32_a	0.52_b	-0.16_a	0.17_b	12.69***	.06
SR Depress	1.26_a	1.25_a	1.20_a	1.26_a	2.14	.01
TR Depress	$-.11_a$	1.04_b	-0.19_a	0.21_c	23.13***	.11
PR Depress	$-.12_{ab}$	1.16_c	-0.27_a	0.08_b	32.11***	.14
SR Victim	2.16_a	2.90_b	2.24_a	2.55_b	10.92***	.05
TR Victim	-0.16_a	1.32_b	-0.24_a	0.25_c	39.33***	.17
PR Victim	-0.34_a	1.55_b	-0.28_a	0.22_c	55.98***	.22
SR SocCom	2.77_{ab}	2.47_a	2.83_b	2.65_{ab}	4.20**	.02
TR SocCom	0.01_a	-1.3_b	0.31_c	-0.32_d	46.84***	.19
TR SocSkills	-0.12_a	-0.83_b	0.25_c	-0.23_a	21.14***	.10
PR SocCom	-0.24_a	-1.20_b	0.48_c	-0.41_a	82.09***	.29
PR #Friends	-0.15_a	-1.38_b	0.48_c	-0.53_d	117.83***	.38

Note: Different subscripts within rows indicate significant differences between means at $p < .05$. SR = Self-Report; Aggress = Aggression; TR = Teacher-Report; PR = Peer-Report; Depress = Depressive Symptoms; Victim = Peer Victimization; SocCom = Social Competence; SocSkills = Social Skills; #Friends = number of friends.

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

Comparison of CDC/LPA-Rejected and CDC-Only-Rejected Children

Finally, we compared two groups of children: (a) children who fell into both the rejected group using the CDC approach and Group 2 using the LPA approach (here labeled "CDC/LPA-rejected") and (b) children classified as rejected using the CDC approach but who did not fall into Group 2 using the LPA approach (here labeled "CDC-only-rejected"). Of note, these analyses do not include those children classified into the LPA Group 2 but not classified as Rejected using the CDC approach, because they were so few in number. In addition to comparing these groups on the dependent variables included in the previous section, we also compared them on basic sociometric variables for descriptive purposes.

Study 1. For Study 1, peers rated CDC/LPA-rejected children as less liked, more disliked, lower in social preference, higher in social impact, and more aggressive than CDC-only-rejected children (see Table 7).

Study 2. All findings for sociometric variables just reported for Study 1 were replicated for Study 2. In addition, all effects for the teacher- and peer-reported variables suggested that the CDC/LPA-rejected group was more maladjusted than the CDC-only-rejected group across variables assessing aggression, depression, victimization, social competence, social skills, and number of friends. Findings were less consistent for the self-reported variables. Although CDC/LPA-rejected children considered themselves to be more victimized than did CDC-only-rejected children, CDC/LPA-rejected children and CDC-only-rejected children did not consider themselves to differ significantly in terms of aggression. Furthermore, and contrary to expectations, CDC-only-rejected children rated themselves as more depressed and less socially competent than CDC/LPA-rejected children (see Table 7).

DISCUSSION

The goals of the current study were (a) to determine if a group of rejected children emerged when LPA was used to cluster children into groups based on SP and SI scores; (b) to examine how an LPA rejected group mapped onto the CDC rejected group; (c) to investigate whether the LPA rejected group differed from other LPA groups on aggression, depressive symptoms, peer victimization, and social competence; (d) to compare those children classified as rejected using both the CDC and LPA approaches to those children classified

TABLE 7
Means and Differences Between CDC/LPA-Rejected and CDC-Only-Rejected Children on Sociometric Variables, Aggression, Depressive Symptoms, Peer Victimization, and Social Competence

	CDC/LPA-Rejected	*CDC/Only-Rejected*	*F value*	η_p^2
	Study 1			
PR Liking	−1.18	−1.10	299.46***	.23
PR Disliking	2.55	1.18	1428.07***	.58
PR Social Preference	−2.23	−1.35	1082.58***	.51
PR Social Impact	1.29	.06	131.33***	.11
PR Aggress	1.86	.55	371.73***	.27
	Study 2			
PR Liking	−1.78	−1.21	206.96***	.41
PR Disliking	2.15	1.33	370.22***	.56
PR Social Preference	−2.11	−1.41	355.96***	.55
PR Social Impact	.53	.13	11.34***	.04
SR Aggress	1.44	1.40	1.82	.01
TR Aggress	.74	.45	18.28***	.06
PR Aggress	.68	.35	18.89***	.06
SR Depress	1.26	1.31	3.27*	.01
TR Depress	1.29	.59	49.64***	.14
PR Depress	1.27	.33	49.61***	.14
SR Victim	3.03	2.67	15.55***	.05
TR Victim	1.58	.72	82.29***	.22
PR Victim	1.89	.77	127.00***	.30
SR SocCom	2.47	2.44	8.91***	.03
TR SocCom	−1.52	−.81	84.54***	.22
TR SocSkills	−.83	−.32	17.12***	.06
PR SocCom	−1.40	−1.01	108.55***	.27
PR #Friends	−1.70	−1.12	170.32***	.37

Note: PR = Peer-Report; Liking/Disliking = Standardized Number of Liking/Disliking Nominations Received; SR = Self-Report; Aggress = Aggression; TR = Teacher-Report; Depress = Depressive Symptoms; Victim = Peer Victimization; SocCom = Social Competence; SocSkills = Social Skills; #Friends = Number of Friends.
$^{**}p < .01$. $^{***}p < .001$.

as rejected using the CDC approach only; and (e) to address these questions across two samples differing in developmental level.

To accomplish these goals, two groups of racially/ethnically diverse participants completed peer nominations of liking and disliking, from which we calculated scores of SP and SI. We classified children into CDC sociometric status groups using the Coie et al. (1982) approach, and we categorized children into LPA groups using SP and SI scores as indicators. In addition, we collected peer-report data on aggression in Study 1, and we collected teacher-, self-, and peer-report data for aggression, depressive symptoms, peer victimization, and social competence in Study 2.

In both samples, an LPA group emerged that had lower SP scores and higher SI scores than all other LPA groups. In the second-grade sample, this group was one of six LPA sociometric groups, and it included 6% of children, whereas in the fourth- and fifth-grade sample, this group was one of four groups and included 14% of children. These initial findings suggest that LPA indeed produces a cluster of children who are strongly disliked by many of their peers, mirroring the CDC definition of peer rejection.

Next, we examined how the LPA rejected group corresponded to the CDC rejected group. In both samples, the majority of children classified as rejected through LPA was also classified as rejected in the CDC approach (95% for Study 1; 86% for Study 2). However, at both developmental levels, only a minority of children classified as rejected using the CDC approach was also classified as rejected through LPA (46% for Study 1; 36% for Study 2). These results indicate that the LPA rejected group is largely a subset of the CDC rejected group, which also includes many additional children not classified as rejected through LPA.

In both samples, the LPA rejected group was characterized by greater maladjustment than other LPA groups. In the second-grade sample, peers rated the LPA rejected group as more aggressive than all other LPA groups. In the fourth- and fifth-grade sample, teachers and peers rated the LPA rejected group as higher on depressive symptoms and peer victimization and lower on social competence than all other LPA groups. Teachers and peers also rated this group as being higher on aggression than two of the three other groups. These findings suggest that the LPA rejected group resembles the CDC rejected group in their maladjustment across behavioral, social, and emotional functioning. Moreover, these results are consistent with the extensive body of previous research documenting the difficulties that CDC rejected children experience in all of these domains (e.g., Boivin et al., 1994; Coie & Dodge, 1998; Coie et al., 1995; Hammen & Rudolph, 2003; Khatri et al., 2000; Miller-Johnson et al., 2002; Parker et al., 2006).

When we compared those children classified as rejected using both the CDC and LPA approaches to those children classified as rejected using the CDC approach only, the CDC/LPA-rejected group appeared more maladjusted than the CDC-only-rejected group, across both sociometric measures and measures of behavioral, social, and emotional functioning. In both samples, the CDC/LPA-rejected group was less liked, more disliked, lower in SP, and higher in SI than the CDC-only-rejected group. Furthermore, in the second-grade sample, peers considered CDC/LPA-rejected children to be more aggressive than CDC-only-rejected children. Even stronger evidence of the greater maladjustment of the CDC/LPA-rejected group emerged in the fourth- and fifth-grade sample when examining results for both teacher- and peer-rated aggression, depression, victimization, social competence, social skills, and number of friends. Thus, the LPA rejected group appears to be not only a subset of the CDC rejected group but one that is more extreme in terms of both their sociometric

status as well as their behavioral, social, and emotional adaptation.

It is important to note that the results just reviewed emerged consistently across two developmental levels, second grade and fourth and fifth grades. Of note, developmental level was confounded with several differences in the samples and methods used across the two studies. Specifically, the younger sample was both substantially larger and characterized by fewer children who were racial/ethnic minorities than the older sample. In addition, children in the younger sample completed sociometric nominations in an individual interview format, whereas children in the older sample completed their nominations using paper and pencil. In spite of these confounds, findings across both developmental periods were consistent in revealing the existence of an LPA rejected group that represented a more maladjusted subset of the larger CDC rejected group.

Whereas current intervention efforts are often aimed broadly at peer-rejected children (Bierman, 2004), these findings suggest that we may want to consider targeting our most intense efforts at those children who are the most strongly disliked by their peers, as well as the most maladjusted. The fact that this group emerged as empirically distinct from all other groups, across two developmental periods and a range of behavioral and socioemotional constructs, indicates that they may be particularly in need of sustained intervention services to shift to a more positive developmental trajectory.

Of interest, although most study results were quite consistent, findings for self-report measures of aggression, depression, victimization, and social competence were less clear. This was true across both comparisons of the LPA rejected group to other LPA groups and comparisons between CDC/LPA-rejected and CDC-only-rejected children. For example, the LPA rejected group did not differ from other LPA groups on self-reported aggression or depression. Even more surprising, CDC/LPA-rejected children rated themselves as *less* depressed and *more* socially competent than did CDC-only-rejected children. These findings stand in stark contrast to those involving teacher and peer ratings of these same constructs. However, they mesh nicely with previous research suggesting that children who are both peer-rejected and aggressive tend to view themselves with a positive bias, or in a more favorable light than others view them (Brendgen, Vitaro, Turgeon, Poulin, & Wanner, 2004; Hymel, Bowker, & Woody, 1993; Rudolph & Clark, 2001; Zakriski & Coie, 1996). The pattern of findings in the current study indicates that the LPA rejected group most likely comprised children who also experience significant difficulties with aggression. In contrast, previous research suggests that the CDC rejected group is more behaviorally heterogeneous, with some CDC rejected children being characterized primarily by social withdrawal, depression, and/or peer victimization (e.g., Boivin et al., 1994; Parker et al., 2006). Thus, the LPA rejected group's tendency toward unrealistically positive self-appraisals may be responsible for the contradictory findings that emerged here for many self-report variables.

Although the current study was focused on validating a rejected group of children, findings may also provide insight into the use of the CDC approach to identify other sociometric groups. The number of empirical sociometric groups that emerged using LPA (six in Study 1; four in Study 2) was close to the five groups formed through the CDC approach. However, beyond the rejected group, LPA groups did not plot cleanly onto CDC groups, in either the second-grade sample or the fourth- and fifth-grade sample, but instead consisted of combinations of children from different CDC groups. Although these findings will need significant replication, they suggest that traditional sociometric methods do not group children into categories that mirror those that emerge when statistical approaches are used to determine the cleanest divisions among groups of children based on SP and SI.

Although the current study has a number of noteworthy strengths, several limitations should also be noted, some of which suggest important directions for future research. First, the study included only samples from middle childhood, and the findings cannot be generalized beyond this age group. Future investigators should explore LPA sociometric status groups across developmental periods including preschool and adolescence. Second, although we analyzed data from both a second-grade sample and a fourth- and fifth-grade sample, the LPA approach did not allow us to directly compare findings across these two age groups. Future studies will want to explore ways to include comparisons across cross-sectional samples, as well as longitudinal designs, when investigating LPA sociometric status groups. Third, the current study did not include an examination of gender differences or between-classroom differences in the comparison of the CDC and LPA approaches to sociometric classification; future investigations should explore both of these important areas. Fourth, a significant limitation of Study 1 was the inclusion of only a single variable for external validation purposes (peer-rated aggression). Future investigators should take care to assess a number of relevant constructs across multiple sources to provide sufficient information on the qualities and characteristics of the empirical groups that emerge from their LPA analyses.

Despite these limitations, we believe that the current study provides useful insights for those who study children's peer relations. The findings are quite reassuring in validating our field's strong focus on the study of

rejected children. At the same time, they suggest that the group of children about whom we should be most concerned is perhaps smaller and even more maladjusted than we had previously imagined. We hope that future investigators will continue and advance this line of thinking and study.

REFERENCES

Achenbach, T. M. (1991). *Integrative guide for the 1991 CBCL/4-18, YSR and TRF*. Burlington: University of Vermont, Department of Psychiatry.

Austin, S., & Joseph, S. (1996). Assessment of bully/victim problems in 8 to 11 year-olds. *British Journal of Educational Psychology*, *66*, 447–456.

Bierman, K. L. (2004). *Peer rejection: Developmental processes and intervention strategies*. New York: Guilford.

Boivin, M., Poulin, J., & Vitaro, F. (1994). Depressed mood and peer rejection in childhood. *Development and Psychopathology*, *6*, 483–498.

Brendgen, M., Vitaro, F., Turgeon, L., Poulin, F., & Wanner, B. (2004). Is there a dark side of positive illusions? Overestimation of social competence and subsequent adjustment in aggressive and nonaggressive children. *Journal of Abnormal Child Psychology*, *32*, 305–320.

Bronfenbrenner, U. (1945). A constant frame of reference for sociometric research. *Sociometry*, *6*, 363–397.

Callaghan, S., & Joseph, S. (1995). Self-concept and peer victimization among schoolchildren. *Personality and Individual Differences*, *18*, 161–163.

Cillessen, A. H. N., & Bukowski, W. M. (2000). Conceptualizing and measuring peer acceptance and rejection. In A. H. N. Cillessen & W. M. Bukowski (Eds.), *Recent advances in the measurement of acceptance and rejection in the peer system* (pp. 75–93). San Francisco: Jossey-Bass.

Coie, J. D., & Dodge, K. A. (1983). Continuities and changes in children's social status: A five-year longitudinal study. *Merrill Palmer Quarterly*, *29*, 261–282.

Coie, J. D., & Dodge, K. A. (1998). Aggression and antisocial behavior. In W. Damon (Series Ed.) & N. Eisenberg (Vol. Ed.), *Handbook of child psychology: Vol. 3. Social, emotional, and personality development* (5th ed., pp. 779–862). New York: Wiley.

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

Coie, J. D., Terry, R., Lenox, K., Lochman, J., & Hyman, C. (1995). Childhood peer rejection and aggression as predictors of stable patterns of adolescent disorder. *Development and Psychopathology*, *7*, 697–714.

Cole, D. A., Jacquez, F. M., & Maschman, T. L. (2001). Social origins of depressive cognitions: A longitudinal study of self-perceived competence in children. *Cognitive Therapy and Research*, *25*, 377–395.

Cole, D. A., Martin, J. M., Powers, B., & Truglio, R. (1996). Modeling causal relations between academic and social competence and depression: A multitrait–multimethod longitudinal study of children. *Journal of Abnormal Psychology*, *105*, 258–270.

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

Hammen, C., & Rudolph, K. D. (2003). Childhood mood disorders. In R. A. Barkley & E. J. Mash (Eds.), *Child psychopathology* (2nd ed., pp. 233–278). New York: Guilford.

Harter, S. (1982). The Perceived Competence Scale for Children. *Child Development*, *53*, 87–97.

Harter, S. (1985). *Manual for the Self-Perception Profile for Children*. Denver, CO: University of Denver.

Hymel, S., Bowker, A., & Woody, E. (1993). Aggressive versus withdrawn unpopular children: Variations in peer and self-perceptions in multiple domains. *Child Development*, *64*, 879–896.

Hymel, S., LeMare, L., Ditner, E., & Woody, E. Z. (1999). Assessing self-concept in children: Variations across self-concept domains. *Merrill Palmer Quarterly*, *45*, 602–623.

Khatri, P., Kupersmidt, J. B., & Patterson, C. (2000). Aggression and peer victimization as predictors of self-reported behavioral and emotional adjustment. *Aggressive Behavior*, *26*, 345–358.

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2nd ed.). New York: Guilford.

Kovacs, M. (2001). *Children's Depression Inventory (CDI): Technical manual*. New York: Multi-Health Systems.

Kupersmidt, J. B., & Patterson, C. J. (1991). Childhood peer rejection, aggression, withdrawal, and perceived competence as predictors of self-reported behavior problems in pre-adolescence. *Journal of Abnormal Child Psychology*, *19*, 427–449.

Ladd, W. G., & Kochenderfer-Ladd, B. (2002). Identifying victims of peer aggression from early to middle childhood: Analysis of cross-informant data for concordance, estimation of relational adjustment, prevalence of victimization, and characteristics of identified victims. *Psychological Assessment*, *14*, 74–96.

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

Lefkowitz, M. M., & Tesiny, E. P. (1980). Assessment of childhood depression. *Journal of Consulting and Clinical Psychology*, *48*, 43–50.

Lefkowitz, M. M., & Tesiny, E. P. (1984). Rejection and depression: Prospective and contemporaneous analyses. *Developmental Psychology*, *20*, 776–785.

Lefkowitz, M. M, & Tesiny, E. P. (1985). Depression in children: Prevalence and correlates. *Journal of Consulting and Clinical Psychology*, *53*, 647–656.

Masten, A. S., Morison, P., & Pellegrini, D. S. (1985). A revised class play method of peer assessment. *Developmental Psychology*, *21*, 523–533.

Mattison, R. E., Handford, H. A., Kales, H. C., Goodman, A. L., & McLaughlin, R. E. (1990). Four-year predictive value of the Children's Depression Inventory. *Psychological Assessment*, *2*, 169–174.

McCutcheon, A. L. (1987). A latent class analysis of tolerance for nonconformity in the American public. *Public Opinion Quarterly*, *49*, 474–488.

McLachlan, G. J., & Peel, D. (2000). *Finite mixture models*. New York: Wiley.

Miller-Johnson, S., Coie, J. D., Maumary-Gremaud, A., Bierman, K., & Conduct Problems Prevention Research Group. (2002). Peer rejection and aggression and early starter models of conduct disorder. *Journal of Abnormal Child Psychology*, *30*, 217–230.

Moreno, J. L. (1934). *Who shall survive? A new approach to the problem of human interrelations*. Washington, DC: Nervous and Mental Disease Publishing.

Muthén, L. K., & Muthén, B. O. (1998–2007). *Mplus user's guide* (5th ed.). Los Angeles, CA: Muthén & Muthén.

Neary, A., & Joseph, S. (1994). Peer victimization and its relationship to self-concept and depression among schoolgirls. *Personality and Individual Differences*, *16*, 183–186.

Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. *Structural Equation Modeling*, *14*, 535–569.

Parker, J. G., & Asher, S. R. (1993). Friendship and friendship quality in middle childhood: Links with peer group acceptance and feelings of loneliness and social dissatisfaction. *Developmental Psychology*, *29*, 611–621.

Parker, J. G., Rubin, K. H., Erath, S. A., Wojslawowicz, J. C., & Buskirk, A. A. (2006). Peer relationships, child development, and adjustment: A developmental psychopathology perspective. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 1. Theory and method* (2nd ed., pp. 419–493). Hoboken, NJ: Wiley.

Pastor, D. A., Barron, K. E., Miller, B. J., & Davis, S. L. (2007). A latent profile analysis of college students' achievement goal orientation. *Contemporary Educational Psychology*, *32*, 8–47.

Peery, J. (1979). Popular, amiable, isolated, rejected: A reconceptualization of sociometric status in preschool children. *Child Development*, *50*, 1231–1234.

Perry, D. G., Kusel, S. J., & Perry, L. C. (1988). Victims of peer aggression. *Developmental Psychology*, *27*, 663–671.

Prinstein, M. J., Rancourt, D., Guerry, J. D., & Browne, C. B. (2009). Peer reputations and psychological adjustment. In K. H. Rubin, W. M. Bukowski & B. Laursen (Eds.), *Handbook of peer interactions, relationships and groups* (pp. 548–567). New York: Guilford.

Reynolds, C. R., & Kamphaus, R. W. (1992). *Behavior Assessment for Children: Manual.* Circle Pines, MN: American Guidance Services.

Rudolph, K. D., & Clark, A. G. (2001). Conceptions of relationships in children with depressive and aggressive symptoms: Social-cognitive distortion or reality? *Journal of Abnormal Child Psychology*, *29*, 41–56.

Saylor, C. F., Finch, A. J., Spirito, A., & Bennet, B. (1984). The Children's Depression Inventory: A systematic evaluation of psychometric properties. *Journal of Consulting and Clinical Psychology*, *52*, 955–967.

Thompson, G., & Powell, M. (1951). An investigation of the rating-scale approach to the measurement of social status. *Educational and Psychological Measurement*, *11*, 440–455.

Walrath, C. M., Petras, H., Mandell, D. S., Stephens, R. L., Holden, E. W., & Leaf, P. J. (2004). Gender differences in patterns of risk factors among children receiving mental health services: Latent class analyses. *The Journal of Behavioral Health Services & Research*, *31*, 297–311.

Whiteman, S. D., & Loken, E. (2006). Comparing analytic techniques to classify dyadic relationships: An example using siblings. *Journal of Marriage and Family*, *68*, 1370–1382.

Worchel, F. F. (1990). Evaluation of subclinical depression in children using self-, peer, and teacher-reported measures. *Journal of Abnormal Child Psychology*, *18*, 271–282.

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