

Likeable versus popular: Distinct implications for adolescent adjustment

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In the current study, 466 children completed a peer nomination survey assessing both perceived and sociometric popularity at the end of the 5th grade. Measures of behavior problems were assessed through a composite of peer-, teacher- and self-reports at the end of the 8th grade. Examination of the unique concurrent associations of each popularity type with peer nominated social characteristics in 5th grade demonstrated that sociometric popularity was positively associated with prosocial behavior and inclusive behavior, while perceived popularity was positively associated with overt and relational aggression. In addition to emerging as distinct conceptual constructs, these two dimensions of popularity also demonstrated unique associations with adjustment over time. Sociometric popularity in the 5th grade was associated with lower levels of externalizing behavior problems 3 years later, while perceived popularity was associated with higher levels of these problems over time. Interestingly, high levels of perceived popularity in the 5th grade were associated with less internalizing symptoms over time for boys, while high levels of sociometric popularity were associated with less internalizing symptoms over time for girls.

Keywords: popularity; social adjustment; status

Although peer relations researchers have historically viewed “popular” children as socially adept and well-adjusted, it is clear that this sunny depiction tells only one side of the story. Sociologists, teachers, and children themselves have long argued that not all popular children are paragons of sweetness and light, and the popular media has been vividly portraying the socially manipulative and coercive aspects of popularity for years (e.g., *Heathers*, *Freaks & Geeks* and *Mean Girls*). It is not until recently, however, that peer relations researchers have begun to bridge the gap between their traditional “sociometric” definition of popularity (assessing children’s overall likeability) and the more sociological approach to “perceived” popularity (assessing children’s status, influence and centrality).

By assessing both constructs simultaneously in the same sample of children, it has become clear that sociometric and perceived popularity are only moderately correlated, and that each subtype of popularity is associated with unique behavioral characteristics. Children who are nominated as sociometrically popular (assessed by asking peers “Who do you like the most/least?”) are viewed as exhibiting high levels of prosocial characteristics such as cooperation, sociability, kindness and leadership. Children who receive high scores for perceived popularity (assessed by asking peers “Who is the most/least popular?”), on the other hand, are viewed by peers as exhibiting dominant and aggressive tendencies in addition to prosocial ones (e.g., LaFontana & Cillessen, 1998, 2002; Lease, Kennedy, & Axelrod, 2002; Parkhurst & Hopmeyer, 1998).

Sociometric popularity has been carefully assessed by peer relations researchers since the 1970s, and there is fairly conclusive evidence that highly likeable children exhibit low levels of

adjustment difficulties both concurrently and over the course of development (e.g., Kupersmidt, Coie, & Dodge, 1990; Parker & Asher, 1987). These children, for all intents and purposes, are considered a “low risk” group. The socio-emotional adjustment of *perceived* popular children, however, is less clear. The paradoxical nature of these children (i.e., the fact that they are both liked and disliked by their classmates, that they engage in both prosocial and antisocial behaviors, and that they are alternately described as socially adept and manipulative) raises important questions about their long-term adjustment. Does their high status and breadth of behavioral repertoire place them on a healthy developmental trajectory? Or does the shadowy underside of their relations with peers put them at risk for increased behavioral or emotional problems over time?

More recently, a small number of researchers have begun to address longitudinal issues in the relationship between perceived popularity and aggressive behavior. That is, does popularity trigger increased use of aggressive strategies, or does aggressive behavior lead to increased popularity over time? Cillessen and Mayeux (2004) assessed both popularity and aggression among a young adolescent sample followed from 5th to 9th grades and found that perceived popularity led to aggressive behavior more often than the reverse. In other words, it appeared that children’s reliance on aggressive behavior increased *after* they achieved high status, as a means of protecting their reputations, creating a sense of elitism, or combating the resentment directed toward them from less popular peers. Similarly, a second longitudinal analysis in an adolescent sample revealed that a combination of high

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perceived popularity and low sociometric popularity predicted increased levels of overt, relational and reputational aggression over a 17-month period (Prinstein & Cillessen, 2003). Finally, Rose, Swenson, and Waller (2004) have suggested that the longitudinal relation between aggression and perceived popularity may vary as a function of gender. Middle-school girls exhibited a bi-directional association between relational aggression and perceived popularity over a 6-month period, while boys exhibited a unidirectional association such that perceived popularity predicted increased relational aggression over time. To date, no studies have examined the link between perceived popularity and broader aspects of adjustment, including measures of internalizing problems.

The current article represents one of the first attempts to “unpack” the influence of *perceived* and *sociometric* popularity on both externalizing and internalizing behaviors over time. Consistent with prior research, we expected *sociometric* popularity to be associated with lower levels of internalizing and externalizing problems over time. We predicted that *perceived* popularity, on the other hand, would be associated with a more mixed pattern of adjustment. Because *perceived* popular children receive a great deal of reinforcement by their peers in the form of admiration, compliance and social support, we expected them to show low levels of internalizing problems (e.g., depression and anxiety) over time. At the same time, however, we expected that peer reinforcement may simultaneously act to reinforce the use of aggressive and coercive strategies among *perceived* popular children. Specifically, high status children may come to learn that it is acceptable, and even adaptive, to rely on aggressive or socially manipulative strategies with peers, since these behaviors help them to achieve desire goals (e.g., maintaining their elite status, obtaining coveted resources). The peer group’s tacit reinforcement of their overt and relationally aggressive behavior may lead *perceived* popular children to escalate their use of externalizing tactics over time.

If *perceived popularity* is associated with an increased risk for externalizing problems over time and *sociometric* popularity is associated with a decreased risk, what happens to children who score high on both dimensions? We suspected that the risks associated with *perceived* popularity might be powerful enough to override the potential buffering effects of sociometric popularity. While likeability may serve a protective function at low levels of perceived popularity, we expected this buffering effect to diminish at high levels of perceived popularity. Thus, even likeable children were expected to demonstrate high levels of externalizing behaviors over time when their likeability was combined with high perceived popularity. This prediction is in keeping with the premise that “power corrupts”, and that individuals who successfully exert control over others ultimately begin to denigrate their less influential peers (e.g., Kipnis, 1972; Rind & Kipnis, 1999) and pursue their goals in socially inappropriate ways (e.g., Keltner, Gruenfeld, & Anderson, 2003).

In addition to examining the main effects of perceived and sociometric popularity on adjustment, we were also interested in examining the ways in which the popularity-adjustment link may operate differently as a function of gender. In regard to our prediction that perceived popularity would predict increased externalizing behavior over time, we expected the *form* of the problematic behavior to vary as a function of gender. In keeping with prior research demonstrating significant gender differences in the mean level of overt and relational

aggression exhibited by boys and girls (e.g., Crick, 1996; Crick & Grotpeter, 1995), we expected perceived popular girls to exhibit higher levels of relational aggression and perceived popular boys to exhibit higher levels of overt aggression over time.

We were also interested in the extent to which gender might moderate the proposed protective effect of perceived popularity on internalizing problems. Although women are roughly twice as likely to experience depression as men in adulthood, this gender difference has not been found among pre-adolescent children (Brooks-Gunn & Petersen, 1991; Nolen-Hoeksema, 1990). Because we assessed adjustment at a point in early adolescence where the gender imbalance in internalizing symptoms is just beginning to emerge (Nolen-Hoeksema & Girgus, 1994; Petersen, Sarigiani, & Kennedy, 1991), we expected the protective effect of perceived popularity on depression and anxiety to be more pronounced for girls than for boys in our sample.

In the current article, we addressed each of these hypotheses by tracking children’s popularity and adjustment over a 3-year period. We used peer-nomination strategies to assess children’s level of *sociometric* and *perceived* popularity at the end of 5th grade, and then used a combination of peer-, teacher- and self-ratings to assess multiple indices of psychosocial adjustment at the end of the 8th grade. We focused our attention on this developmental period for several reasons. First, middle school marks an important transition from the self-contained classrooms of elementary school to a broader social context in which children switch classes and interact with a larger number of students during the course of the day. Second, middle school is characterized by a significant increase in unstructured time throughout the school day; there are many more opportunities for children to interact with each other informally, and away from the watchful eyes of adults (e.g., during class transitions). These contextual changes may be associated with important shifts in how high status children wield their power over peers.

Prior research has demonstrated that the period immediately following the transition from elementary to middle school (typically 6th grade in US samples) is a particularly chaotic and disruptive one for adolescents because the structural changes associated with the shift can conflict with emerging developmental strivings associated with puberty (e.g., Eccles, Lord, & Midgley, 1991; Juvonen, Le, Kaganoff, Augustine, & Constant, 2004). Because the current study was designed to examine the impact of popularity in late childhood on broad indices of psychosocial adjustment in adolescence, we chose to assess adjustment *after* the tumult associated with transition had settled. We specifically chose 8th grade as our second time point for three reasons: (1) we wanted to obtain a “clean” measure of adjustment that was not unduly confounded with transition-related stressors, (2) we were interested in exploring the predictive power of popularity over several years, rather than just one year, and (3) we wanted our end point to coincide with the developmental period in which children’s focus on social status appears to peak. The 8th grade year best satisfied these criteria.

The current article is structured in three parts. First, we validated the concurrent distinction between sociometric and perceived popularity in a 5th grade sample. Second, we examined the extent to which these two types of popularity differentially predict multiple adjustment outcomes by the end of middle school. Unlike previous longitudinal studies that

have focused entirely on associations between perceived popularity and aggression, we included measures of teacher-rated disruptiveness and self-ratings of depression and anxiety in addition to peer ratings of overt and relational aggression. Finally, we used structural equation modeling to explore the predictive associations between both dimensions of popularity and composite indices of internalizing and externalizing problems.

Method

Participants and procedure

Participants in Grade 5 were 641 children (M age 10.7 years; 48% girls) from 28 classrooms in 10 public schools in a northeastern town with a population of 50,500 and a median household income of \$44,931. Twenty-five percent of these children qualified for free or reduced lunch. The ethnic composition of the Grade 5 sample was 76% white, 14% African American, 8% Latino American, 1% Asian American, and 1% of other origin. School administrators provided consent for all procedures, and parents were contacted via a letter to obtain permission for participation. Parents who did not want their children to participate in the study were encouraged to contact the school, and these children did not complete surveys. In addition to parental consent, all children were asked to assent to participation before completing surveys. Of the total number of students in the 10 participating schools, more than 90% of parents and children agreed to participate in the project at both time points.

Following Grade 5, students transitioned into two middle schools housing Grades 6–8. Follow-up data collection took place in Grade 8. The 8th grade cohort included 466 of the original 641 5th graders (73%). These 466 students were compared to the 175 students who were no longer in the sample on both sociometric and perceived popularity scores in the 5th grade. Students who had dropped out of the study did not differ from students who remained in the study in terms of perceived popularity in Grade 5, however students who left did score significantly lower on sociometric popularity ($d = .25$). This attrition bias is common for longitudinal research, as problem students are more likely to leave school and, conversely, high mobility is related to more social difficulties. Thus, although a typical attrition bias was observed, the effect was within the small range (.20–.50, Cohen, 1988). All subsequent analyses were conducted on the core sample of 466 students who were in the study in both Grade 5 and Grade 8. The sample size for a specific analysis was occasionally smaller (see Results) due to missing values of participants on some of the variables.

In Grade 5, participants completed classroom administered peer nomination forms in order to assess sociometric popularity, perceived popularity, overt and relational aggression, and a variety of other social characteristics. In Grade 8, participants once again completed classroom administered peer nomination forms to assess popularity and aggression. In addition, participants completed self-report questionnaires to assess depression and anxiety and teachers completed questionnaires to assess classroom based disruptive behavior. Composite assessments of popularity and externalizing and internalizing behaviors were derived from these measures as described below.

Sociometric and peer-perceived popularity

Scores for the two popularity constructs were derived from peer nominations. Participants were tested as part of a larger longitudinal study on peer relations and the development of social and academic adjustment. Students participated in sociometric testing in the spring of each school year, using procedures and computational methods that were highly similar each year. Students completed sociometric measures in their classrooms, under the guidance of trained research assistants who explained the procedures and the confidentiality of answers. Each participant received a set of rosters containing the names of all members of their grade preceded by a code number. In Grade 5, the rosters contained 38 to 99 names in two to four columns (one per classroom), headed by the name of the classroom teacher.¹ Names were alphabetized by first name within each classroom column to allow easy identification of nominees' code numbers. In Grade 8, the rosters contained the names of the 300 peers in each grade printed in multiple columns on one side of legal-sized paper, alphabetized by first name. Each sociometric question was printed on top of a new roster; questions were answered by circling code numbers directly on the roster. Students reported no difficulty using rosters of this type and size.

Participants were informed that only code numbers would be kept during data processing and computations. Participants were instructed to read each sociometric question, consider the peers in their grade who fit the description, and then circle or record the code numbers of those peers. Unlimited nominations were used, allowing both same- and cross-sex nominations. Self nominations were discouraged during testing and discarded during data processing. The sociometric instrument took approximately 30 minutes to complete.

Four sociometric questions were used to measure popularity: *liked most* ("the people in your grade you like the most"), *liked least* ("the people in your grade you like the least"), *most popular* ("the people in your grade who are the most popular"), and *least popular* ("the people in your grade who are the least popular"). The wording of these items was identical across all years of the study. Nominations received were counted for each question and standardized within the reference group (the entire grade level of each school). A continuous measure of *sociometric popularity* was computed by subtracting the standardized number of *liked least* nominations received from the standardized number of *liked most* nominations. Consistent with what is customary in research using this method, the resulting difference score was again standardized to a mean of 0 and standard deviation of 1 for ease of interpretation. A continuous measure of *perceived popularity* was computed by subtracting the standardized number of *least popular* votes from the standardized number of *most popular* votes. To create a metric identical to the one for sociometric popularity, the resulting difference score was again standardized within grade. The stability correlations from Grade 5 to Grade 8 were .59 ($N = 466$, $p < .001$) for sociometric popularity and .68 ($N = 463$, $p < .001$) for perceived popularity.

¹ Variability in roster size was due to different grade sizes across schools. Our participants came from 10 elementary schools and the number of 5th graders in these schools varied from 38 (in the smallest school with two 5th grade classrooms) to 99 (in the largest school with four 5th grade classrooms).

Overt and relational aggression

Scores for the two aggression constructs were derived from additional peer nomination questions using the same sociometric instrument. Overt aggression was assessed with one sociometric item that was identical in both grades (“start fights, say mean things, and/or tease others”). Relational aggression was measured with two items in Grade 5 (“keep others from being in the group during activities or games,” and “ignore or stop talking to other kids when they are mad at them”) and two items in Grade 8 (“try to keep others who they don’t like from being in their group,” and “ignore others or spread rumors about others when they are mad at them”). Nominations received were counted for each participant and standardized within grade. A continuous measure of *overt aggression* was created by standardizing the number of overt aggression nominations received in each grade. A continuous measure of *relational aggression* was computed for Grades 5 and 8 by averaging the standardized numbers of nominations received for the two relational aggression items. The correlation between the two relational aggression items was .51 in Grade 5 ($N = 641$, $p < .001$) and .61 in Grade 8 ($N = 609$, $p < .001$). The stability correlations were .61 for overt aggression ($N = 461$, $p < .001$), and .46 for the composite relational aggression score ($N = 466$, $p < .001$).

Other social characteristics

In addition to aggression items, children were also asked to nominate peers for a variety of other social characteristics in the 5th grade, including prosocial behavior (“people who cooperate, share and help others”), leadership (“people who are leaders and good to have in charge”), friendship (“people who are your best friends”), withdrawal (“people who are hard to get to know because they stay by themselves a lot”), victimization (“people who are picked on or teased by other kids”), peer affiliation (“people you hang around with”), and social inclusion (“people who help others join the group doing activities or games”). Once again, nominations received were counted for each participant and standardized within grade.

Anxiety/withdrawal and depression

Scores for the internalizing constructs were derived from self-ratings in Grade 8. Anxiety/withdrawal was measured with 12

items from the Bracken Multidimensional Self Concept Scale (MSCS, Bracken, 1992), and depression was measured with 12 items from the Beck Depression Inventory (BDI, Beck & Steer, 1984). An additional suicidal ideation item was not included in the measure. Internal consistencies (Cronbach’s alpha) in our study were .90 for anxiety/withdrawal and .88 for depression.

Disruptive conduct

In Grade 8, teachers rated students’ disruptive conduct with six items from the CBCL-Teacher Report Form (Achenbach, 1991). The internal consistency reliability (Cronbach’s alpha) was .93 for this construct in our study.

Results

Preliminary correlational analyses

These analyses were conducted to confirm the discriminant validity of sociometric and perceived popularity in Grade 5. First, the zero-order correlations between Grade 5 behavioral nominations and each type of popularity were determined (see Table 1). Both sociometric and perceived popularity correlated positively with friendship, prosocial behavior, leadership, peer affiliation, and social inclusion. Both measures of popularity correlated negatively with victimization and social withdrawal. Perceived popularity correlated significantly and positively with overt and relational aggression. Sociometric popularity correlated negatively with overt aggression but was uncorrelated with relational aggression (see the zero-order correlation columns of Table 1).

Because sociometric and perceived popularity were positively correlated ($r = .74$), we examined the extent to which each popularity dimension was *uniquely* associated with behavioral measures when the impact of the other popularity dimension was statistically controlled (see the partial correlation columns in Table 1). When controlling for perceived popularity, sociometric popularity was uniquely and positively correlated (in order of magnitude) with friendship, peer affiliation, social inclusion, prosocial behavior, and leadership, and uniquely and negatively correlated with overt aggression, relational aggression, and victimization. Sociometric popularity was not uniquely correlated with social withdrawal. When

Table 1

Joint and unique associations between two types of popularity types and social characteristics in Grade 5 (459 < N < 466)

Peer nomination measure	Zero-order correlations		Partial correlations	
	Sociometric popularity	Perceived popularity	Sociometric only (Not perceived)	Perceived only (Not sociometric)
Friendship	.82**	.69**	.64**	.22**
Prosocial behavior	.63**	.45**	.50**	-.05
Overt aggression	-.28**	.11*	-.52**	.48**
Leadership	.66**	.56**	.45**	.14**
Withdrawal	-.44**	-.60**	-.01	-.45**
Victimization	-.63**	-.61**	-.34**	-.28**
Relational aggression	-.07	.31**	-.46**	.54**
Peer affiliation	.81**	.75**	.57**	.39**
Social inclusion	.68**	.49**	.54**	-.03

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

controlling for sociometric popularity, perceived popularity was uniquely and positively correlated (in order of magnitude) with relational aggression, overt aggression, peer affiliation, friendship, and leadership, and uniquely negatively correlated with withdrawal and victimization. Perceived popularity was not uniquely correlated with prosocial behavior or social inclusion.

Prediction of specific measures of adjustment from sociometric and perceived popularity

Analysis strategy. In order to examine whether sociometric popularity and perceived popularity in Grade 5 differentially predicted outcomes in Grade 8, a separate hierarchical regression was conducted for each outcome (overt aggression, relational aggression, classroom disruptiveness, depression, and anxiety). To control for gender differences in each outcome, gender (dummy coded; boys = 0, girls = 1) was entered in Step 1 of each analysis. To test the unique effects of sociometric and perceived popularity, these two measures were entered in Step 2. To test whether these effects were moderated by gender, the interactions of gender and both forms of popularity were entered in Step 3. Because sociometric and perceived popularity may interact in ways that exceed their respective main effects, the interaction between both types of popularity was entered in Step 4. Finally, to test whether this interaction was moderated by gender, the three-way interaction of gender, sociometric, and perceived popularity was tested in Step 5. The results of these analyses are shown in Table 2.

Main effects of gender. Gender (girls = 1, boys = 0) negatively predicted overt aggression and disruptive behavior, and positively predicted relational aggression and anxiety. In Grade 8, girls were less overtly aggressive and disruptive, and more relationally aggressive and anxious than boys were, and tended towards higher depression scores.

Main effects of sociometric and perceived popularity. The unique effects of sociometric and perceived popularity on Grade 8 outcomes were consistent with the concurrent analyses described above. The longitudinal effects indicated that sociometric popularity in Grade 5 significantly and negatively predicted overt aggression, relational aggression, and disruptive behavior in Grade 8. In contrast, perceived popularity in Grade 5 uniquely and positively predicted overt aggression, relational aggression, and disruptive behavior in Grade 8.

Interactions between sociometric and perceived popularity. Significant interactions between sociometric and perceived popularity were found for the prediction of overt and relational aggression in Grade 8. Follow-up tests were conducted of these interactions according to procedures recommended by Aiken and West (1991; see also Cohen, Cohen, West, & Aiken, 2003) and are shown in Figures 1 and 2. As can be seen in Figure 1, perceived popularity positively predicted overt aggression at all levels of sociometric popularity. The interaction was caused by the decreasing impact of sociometric popularity at higher levels of perceived popularity. At low levels of perceived popularity, well-liked students were very unaggressive and disliked students were about average in aggression. However, at high levels of perceived popularity, both well-liked and disliked students were above average in overt aggression.

Figure 2 shows similar findings for relational aggression. Once again, perceived popularity positively predicted relational aggression at all levels of sociometric popularity. At low levels of perceived popularity, well-liked students received lower scores for relational aggression while disliked students received average scores. At high levels of perceived popularity, however, all participants were relationally aggressive irrespective of their level of sociometric popularity.

Moderation by gender. As can be seen in Table 2, significant interactions were found in three cases. Gender moderated the

Table 2

Summary of hierarchical regressions of Grade 8 outcomes on gender and sociometric and perceived popularity in Grade 5

	<i>Overt aggression</i>		<i>Relational aggression</i>		<i>Disruptive behavior</i>		<i>Depression</i>		<i>Anxiety</i>	
	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
<i>Step 1</i>	.04***		.01*		.02**		.01		.03***	
Gender		-.20***		.10*		-.15**		.09		.16**
<i>Step 2</i>	.08***		.15***		.04***		.01		.02*	
Sociometric popularity		-.39***		-.35***		-.27***		.01		-.03
Perceived popularity		.41***		.56***		.17*		-.11		-.11
<i>Step 3</i>	.02**		.00		.00		.01*		.01	
Gender \times sociometric popularity		.07		-.12		-.13		-.22*		-.14
Gender \times perceived popularity		-.23**		.09		.11		.18		.21*
<i>Step 4</i>	.01*		.02**		.00		.00		.00	
Sociometric \times perceived popularity		.12*		.14**		.02		.01		-.03
<i>Step 5</i>	.00		.00		.00		.00		.00	
Gender \times sociometric \times perceived popularity		-.07		-.06		.07		.04		.01
Total R^2	.15***		.18***		.06***		.03*		.06***	

Note. * $p < .05$; ** $p < .01$; *** $p < .001$. β values are derived from the step at which each predictor was added to the equation.

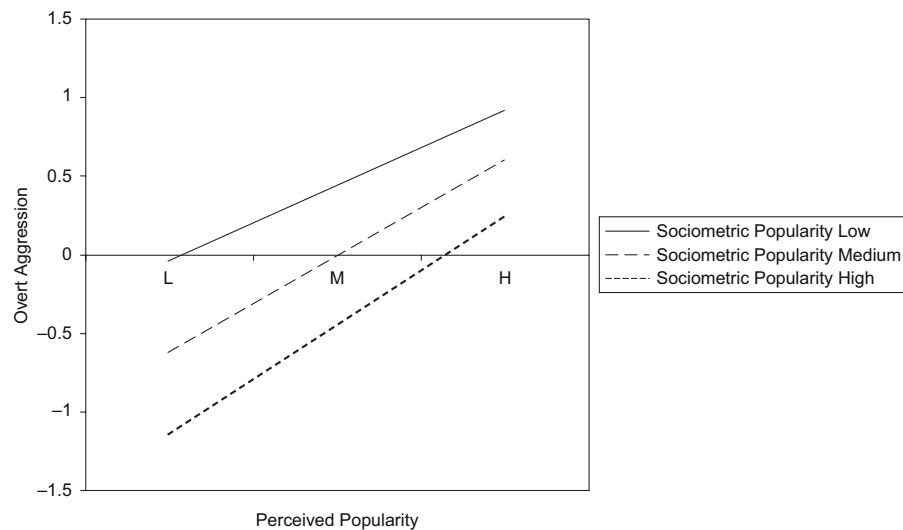


Figure 1. Interaction between perceived popularity and sociometric popularity in the prediction of overt aggression.

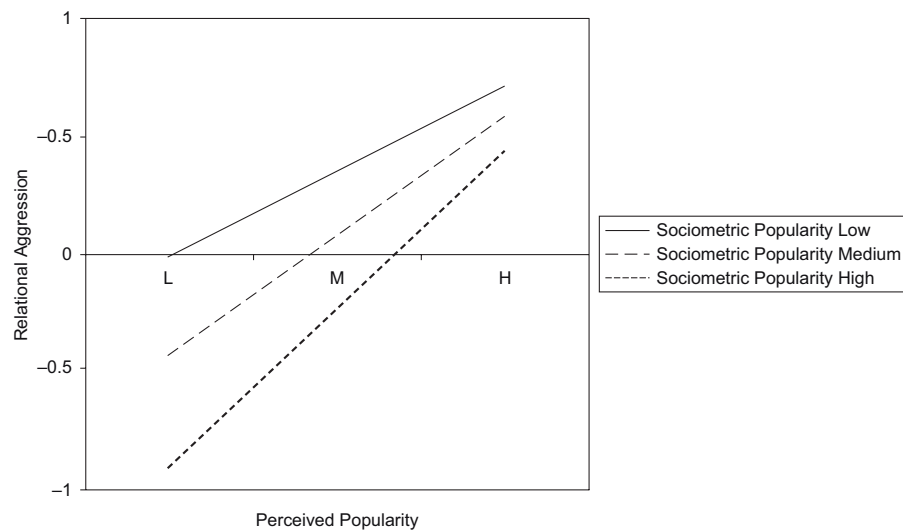


Figure 2. Interaction between perceived popularity and sociometric popularity in the prediction of relational aggression.

effect of perceived popularity on overt aggression as well as anxiety. Gender also moderated the effect of sociometric popularity on depression. Once again, the nature of these effects was examined using the strategies of Aiken and West (1991).

Perceived popularity predicted overt aggression for both boys and girls, but the effect was stronger for boys. At low levels of perceived popularity, boys and girls were equally low in aggression. With increasing levels of perceived popularity, the discrepancy between boys and girls increased, with boys increasing more rapidly ($\beta = .57$) than girls ($\beta = .24$). At high levels of perceived popularity, boys were significantly more overtly aggressive than girls.

Gender also significantly moderated the effect of perceived popularity on anxiety. Post-hoc probing indicated that perceived popularity negatively predicted anxiety for boys ($\beta = -.27$). For girls, however, the negative effect of perceived popularity on anxiety was much weaker and closer to zero ($\beta = -.05$). Thus, the interaction was caused by the fact that the negative effect of perceived popularity on anxiety was much weaker for girls than for boys.

Gender also significantly moderated the effect of sociometric popularity on depression. Post-hoc probing indicated a reversal of effects for boys and girls. At low levels of sociometric popularity, girls reported higher depression scores than boys. With increasing levels of sociometric popularity, boys' depression scores showed a modest increase ($\beta = .08$), whereas girls' depression scores showed a modest decrease ($\beta = -.09$).

Predictive relations between dimensions of popularity and global measures of adjustment. Causal modeling analyses were conducted to examine the associations between the two dimensions of popularity at the end of elementary school (Grade 5) and global measures of psychosocial adjustment three years later (Grade 8). Towards this end, two composite scores were computed for psychosocial adjustment in Grade 8: an *externalizing behavior* score indicated by overt aggression, relational aggression, and disruptive behavior, and an *internalizing behavior* score indicated by anxiety and depression. A confirmatory factor analysis was conducted on this measurement model. Model fit was excellent, $\chi^2(4) = 4.187$, $p = .381$, CFI

= 1.000, RMSEA = .010. Loadings on the externalizing construct were .99 (overt aggression), .62 (relational aggression), and .45 (disruptive behavior). Loadings on the internalizing construct were .72 (depression) and .92 (anxiety). The correlation between externalizing and internalizing was .08, confirming the creation of two separate dimensions of adjustment.

We then examined the unique effects of sociometric and perceived popularity in Grade 5 on externalizing and internalizing behaviors in Grade 8. A two-group model (with gender as the grouping variable) was specified in order to examine moderation by gender. To achieve sufficient power for the multiple groups analysis, externalizing and internalizing were included as measured variables rather than latent variables. Towards this end, a composite score was created for both constructs by averaging their respective indicators.

The model (see Figure 3) was tested with AMOS 5.0, and included all participants with complete data on each measure in the model ($N = 402$, 191 girls, 211 boys). Because of potential co-morbidity between internalizing and externalizing problems, and the fact that the two popularity dimensions were not expected to be the only causes of adolescent psychopathology, the unexplained variances of the two outcome variables were correlated.

First, we tested moderation by gender by comparing the fully unconstrained model (with all paths free between gender) with the fully constrained model (with all paths set equal between gender). The fully constrained model fit the data significantly worse than the fully unconstrained model, $\chi^2(4) = 9.955$, $p = .041$. Thus, the model with separate paths by gender was preferred.

In this model, two paths were not significant: from perceived popularity to internalizing problems for girls (.13), and from sociometric popularity to internalizing problems for boys (.05). After trimming these paths, model fit was excellent, $\chi^2(2) = 1.896$, $p = .388$, CFI = 1.000, RMSEA = .000. The remaining paths for each gender were significant (see Figure 3). For girls, sociometric popularity negatively predicted internalizing (–.14) and externalizing (–.44), whereas perceived popularity positively predicted externalizing (.45). For boys, sociometric popularity negatively predicted externalizing (–.29), perceived popularity positively predicted externalizing (.43), and perceived popularity negatively predicted internalizing (–.20).

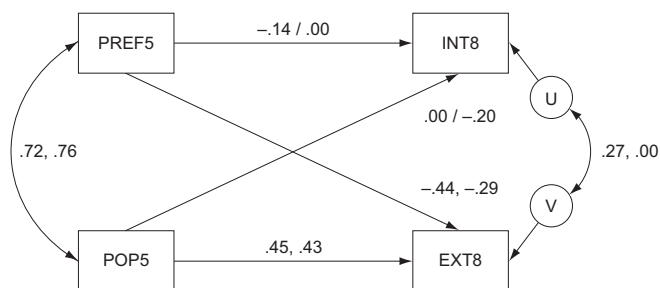


Figure 3. Causal model for the relationship between perceived popularity and sociometric popularity in Grade 5 and internalizing and externalizing behaviors in Grade 8.

Note. Standardized estimates are shown to facilitate comparison of effect sizes between paths and groups. For each path, the first estimate is for girls, the second for boys. Estimates separated by a slash were reliably different between girls and boys; estimates separated by a comma did not differ reliably by gender.

Follow-up testing was conducted to examine which paths were responsible for the overall gender difference. Two of the four paths were significantly different by gender: from sociometric popularity to internalizing and from perceived popularity to internalizing. Sociometric popularity significantly predicted internalizing for girls (–.14), but not for boys; this difference was significant, $\chi^2(1) = 4.421$, $p = .036$. Perceived popularity significantly predicted internalizing for boys (–.20), but not for girls; this difference was also significant, $\chi^2(1) = 5.568$, $p = .018$. Finally, we compared the buffering effect of sociometric popularity on internalizing problems for girls (–.14) with the buffering effect of perceived popularity on internalizing problems for boys (–.20). These effects were not significantly different from one another.

Discussion

The current article has focused on three related aims: (1) to validate the concurrent distinction between sociometric and perceived popularity, (2) to examine the unique prospective associations between each type of popularity and an array of adjustment outcomes, and (3) to test a causal model linking children's level of sociometric and perceived popularity at the end of elementary school to composite indices of internalizing and externalizing behavior at the end of middle school.

In regard to the first aim, our results provide further support for the recognition that sociometric and perceived popularity are distinct constructs. While both types of popularity were positively associated with indices of affiliation (e.g., having friends and “hanging around” with peers) and negatively associated with victimization, each demonstrated its own unique set of correlates as well. Sociometric popularity was positively associated with prosocial behavior and social inclusion while perceived popularity was not significantly associated with these positive traits. Further, while sociometric popularity was negatively associated with overt and relational aggression, perceived popularity was positively associated with both forms of aggression. What emerges is a clear picture of two subtypes of high status children: one group that is highly likable, friendly, helpful, and inclusive toward peers, and a second group that is highly aggressive, exclusive, and socially manipulative. These findings support a growing body of literature suggesting that sociometric and perceived popularity are not synonymous, and that a subset of popular children may use rather antisocial strategies to achieve or maintain their social power in the group (e.g., LaFontana & Cillessen, 2002; Parkhurst & Hopmeyer, 1998; Rose et al., 2004). These results emphasize the importance of assessing both types of popularity in the same sample in order to gain a more comprehensive understanding of the social dynamics of middle childhood and adolescence.

Beyond confirming the construct validity of these two subtypes of popularity, our second aim was to address the predictive associations between both types of popularity at the end of elementary school and socio-emotional adjustment by the end of middle school. First, we predicted that sociometric popularity would predict lower levels of all adjustment problems across the board. In terms of “acting out” behaviors, our results largely supported this claim. Children who were perceived as highly likeable by their peers at the end of elementary school showed lowered levels of overt and relational aggression, and lower levels of teacher-rated disruptive

behavior by the end of middle school. The link between likeability and adjustment was also reflected in our structural equation model, in which sociometric popularity strongly predicted lower levels of externalizing problems at the end of the 8th grade. These findings are consistent with a long tradition of sociometric research documenting the overall healthy trajectory of socially competent children (e.g., Kupersmidt & Dodge, 2004).

Interestingly, we found only partial support for the notion that sociometric popularity in the 5th grade would be associated with lower levels of internalizing problems in the 8th grade. Likeability appeared to buffer against symptoms of depression and anxiety for girls, but not boys. We speculate that this gender difference may be partially explained by diverging social goals of girls and boys during this developmental period. A growing body of research now documents that while girls tend to prioritize goals of connectedness and inclusion in their social interactions, boys emphasize autonomy and the achievement of instrumental aims (e.g., Anastasi, 1984; Blatt, 1998; Gilligan, 1982). Being perceived as highly likeable might translate into greater intimacy and social connection among girls, thus staving off subsequent internalizing symptoms such as depression and anxiety over time. For boys, on the other hand, perceived likeability may not serve an equivalent developmental function. Given their strivings for autonomy and social dominance, boys may require prominence and visibility among their peers (i.e., *perceived* popularity) in order to boost their self-esteem and buffer against internalizing symptoms. While such an explanation is consistent with our data, future research is necessary to fully investigate potential links among likeability, status, social goals, and subjective feelings of well-being in late childhood and early adolescence.

In contrast to the positive associations between sociometric popularity and psychosocial well-being, we predicted that *perceived* popularity would be associated with a more mixed pattern of adjustment. On the one hand, we expected the experience of being continually sought out and emulated by peers to be associated with a reduced likelihood of feeling depressed, inadequate, or socially anxious over time. On the other hand, we expected that perceived popular children may be inadvertently reinforced for their use of coercive or manipulative tactics toward peers, resulting in an escalation of externalizing behaviors over time.

Indeed, our results support the notion that perceived popularity functions as a double-edged sword. According to our hierarchical regression analyses, high levels of perceived popularity in the 5th grade were uniquely associated with higher levels of overt and relational aggression, as well as teacher-rated disruptiveness in the 8th grade after controlling for sociometric popularity. Our results suggest that the positive association between perceived popularity and overt aggression was particularly strong for boys, as might be expected given the overall higher rate of overt aggression among boys in this age group (e.g., Coie & Dodge, 1998). Results from our structural equation modeling served to confirm the predictive link between high levels of perceived popularity at the end of elementary school and heightened externalizing problems at the end middle school.

The finding that perceived popularity is associated with increased levels of aggressive behavior over time can be explained in a number of ways. First, it is possible that as children become more socially prominent and influential in the

peer group, they begin to abuse their power by victimizing or alienating children in the lower ranks of the peer hierarchy. Such behavior might serve a protective function (e.g., preventing other children from encroaching on their territory or threatening their status), or might reflect the very same personality characteristics that enabled these children to become so influential in the first place. Alternatively, it is possible that the peer group grows to feel increasingly resentful toward those children who occupy the upper echelon of the social world, especially when they feel they have been rejected from high status, exclusive activities. Feelings of anger or jealousy on the part of the peer group may lead them to perceive the behavior of these popular children in increasingly negative ways. Future studies that combine both sociometric nominations and direct observational ratings of peer interaction could help to tease apart these competing hypotheses.

While we expected high levels of perceived popularity to predict heightened levels of externalizing behaviors over time, we allowed that high status could confer important benefits as well. Specifically, we predicted that children who were perceived as highly popular by their peers at the end of elementary school would exhibit *lower* levels of internalizing symptoms (e.g., feelings of depression, low self-worth, and social anxiety) by the end of middle school. Surprisingly, we did not find a main effect of perceived popularity on internalizing symptoms. That is, high status was not associated with lower levels of internalizing symptoms irrespective of gender. Instead, results of our structural equation modeling suggest while perceived popularity is associated with lower levels of internalizing symptoms among boys, it does not play a similar buffering role among girls. As described earlier, this gender difference may be partially explained by considering the differential importance of social dominance versus intimacy among adolescent boys. To the extent that perceived popularity is a clear manifestation of dominance and status, it may lead boys to feel socially successful, thus obviating feelings of anxiety, alienation, or inadequacy. At the same time, high status and dominance do not necessarily evoke the sense of personal connection and intimacy that is of primary importance among girls. As described earlier, it is likeability (as opposed to status) that appears to be associated with decreased internalizing behaviors among girls. In addition, we speculate that other dimensions of peer interaction, such as stable and rewarding dyadic friendships or romantic relationships, may play a larger role in combating internalizing symptoms among adolescent girls. In future research, it will be important to examine the impact of these dyadic constructs, in concert with group constructs such as sociometric and perceived popularity, on psychosocial adjustment.

In addition to examining the unique effects of “likeability” and “high status”, we were also interested in examining how both aspects of popularity might interact with each other to influence adjustment over time. One might predict that children who receive high scores on *both* dimensions of popularity demonstrate lower levels of adjustment difficulties over time, because their combination of strengths allows them to balance prosocial and coercive strategies in a socially acceptable and effective manner (see Hawley, 2003; Sutton, Smith, & Swettenhan, 1999, for such a perspective). Alternatively, it is conceivable that the behavioral risks associated with high status override the tempering effects of sociometric popularity. That is, high status may create a context that elicits or rewards aggressive behavior from even the most likeable

person. As predicted, our data are consistent with the latter scenario. At low levels of perceived popularity, the traditional associations between sociometric popularity and aggressive behavior apply; likeable children receive very low ratings of aggressiveness by peers. At high levels of perceived popularity, however, the protective power of sociometric popularity begins to erode and *all* children exhibit elevated aggression scores. This interaction effect is particularly noticeable in regard to relational aggression.

We find this interaction effect particularly striking, as it suggests that the impact of perceived popularity may, at times, override the impact of sociometric popularity. While causal mechanisms could not be uncovered in the current study, we suspect that high status children may feel enormous pressure to protect and maintain their position at the top of the social hierarchy. This pressure may lead otherwise likeable and pro-social children to engage in increasingly manipulative and coercive behaviors designed to keep lower status classmates in their place. Alternatively, there may be something naturally corrosive about high status – it may gradually lead powerful peers to denigrate and mistreat their less powerful counterparts (e.g., Kipnis, 1972; Keltner et al., 2003). In future studies, it will be important to assess molecular aspects of peer interactions in order to unravel the causal links among status, likeability, and social behavior.

In summary, the current study has taken an important step in furthering the literature on perceived popularity. Our results not only emphasize that sociometric and perceived popularity demonstrate unique patterns of association with other behavioral characteristics, but also demonstrate that these two subtypes of popularity are differentially associated with major indices of adjustment in early adolescence. The fact that perceived popularity predicts heightened levels of externalizing problems over time should raise a warning flag to researchers, practitioners, and teachers who may have assumed that popularity implies only positive social adjustment.

In addition to the immediate effect that their behavior may have on intended targets in the peer group, it is also important to consider the broader impact that perceived popular children may have on the overall social culture. Because these children are, by definition, highly visible, central, and socially influential, their reliance on aggressive and disruptive strategies may serve as a vivid model for lower status children. In fact, high status children may act as instigators and reinforcers, encouraging lower status members of the peer group to serve as the “henchmen” who actively mistreat a subset of highly victimized children (e.g., Salmivalli, Lagerspetz, Björkqvist, & Österman, 1996). Thus the negative characteristics associated with perceived popularity may have ripple effects that spread throughout the peer group in powerful and insidious ways.

While the strengths of the current investigation include its longitudinal design and reliance on multiple sources for the assessment of adjustment, several limitations could be addressed in future studies. First, the current study used only two measurement points in time, which provides for limited opportunity to examine the causal relationships among the main constructs of interest. Opportunities to engage in more detailed causal analyses will be enhanced by examining reciprocal relations among popularity and adjustment. While the current study focuses on a single causal direction between popularity and behavior problems, there is likely a more dynamic, reciprocal relation among these variables. That is, we suspect that high levels of internalizing problems lead to

decreased levels of both sociometric and perceived popularity over time, since children who are preoccupied with feelings of depression or anxiety are unlikely to attract positive attention from peers. Externalizing behaviors, on the other hand, may simultaneously contribute to both decreased likeability and increased status among peers. Future research will need to assess the potentially reciprocal relations among popularity and problematic behaviors in adolescence.

Second, this study relied on peer nominations, self- and teacher-report variables. While such variables are of great use in research on peer relations, assessment of the underlying behavioral and social processes requires the collection of additional observational data to complement data from the three sources of information currently considered. Third, we expect that the associations examined in the current study are mediated and moderated by other constructs. The identification of these moderators and mediators should be driven by theoretical considerations and/or results from other studies. For example, ethnic majority/minority status in the adolescent peer group, differences in SES or spending power, or the quality of dyadic relationships such as friendships or romantic pairings may moderate our findings. The identification and empirical examination of such variables are important goals for future research as well.

In future studies, we plan to examine potential links between dimensions of popularity and adjustment over a longer period of time, as well as to consider a broader range of outcomes. For example, in order to maintain their high status, perceived popular adolescents may engage in a broader range of health risk behaviors, such as cigarette smoking, substance use, sexual promiscuity or disordered eating. In addition, the long-term consequences of engaging in high levels of aggressive behavior in order to attain or maintain high levels of perceived popularity are currently not known. It is possible that teens who know how to artfully incorporate antisocial strategies in their social repertoire are in a better position to be successful at future tasks (i.e., mate selection, workplace challenges). Alternatively, it is also possible that reliance on aggressive or manipulative social strategies during the teen years may blossom into the emergence of antisocial, borderline or narcissistic personality features in adulthood. Thus, examining the long-term developmental trajectories and outcomes associated with perceived popularity beyond adolescence is an important agenda for future research.

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