AGGRESSIVE BEHAVIOR
Volume 32, pages 396–408 (2006)

Aggression and Social Status: The Moderating Roles of Sex and Peer-Valued Characteristics

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Research on peer rejection has long emphasized links between aggressive behavior and peer liking, with aggressive children and adolescents being more rejected by peers. However, recent research shows that at least some aggressive students enjoy considerable power and influence and are perceived as "popular" within the peer group. To understand the processes underlying links between aggression and social status, the present research considered three distinct indices of social status (social preference, perceived popularity, and power) and investigated the degree to which the possession of peer-valued characteristics moderated the links between status and aggression and whether these links varied by sex. A sample of 585 adolescents (grades 6–10) completed peer evaluation measures assessing social status, aggression (overt/physical, indirect/relational), and the degree to which peers possessed eight different peer-valued characteristics (e.g., attractiveness, athleticism, etc.). Although sociometric indices of status were significantly related to perceived popularity, especially for boys, perceptions of power were more strongly linked to perceived popularity than to sociometric likeability. Moreover, the three indices of social status were differentially related to peers' assessments of aggression and to peer-valued characteristics, with notable sex differences. As predicted, regression analyses demonstrated that the observed relationships between social status and aggression were moderated by the possession of peer-valued characteristics; aggressive students who possessed peer-valued characteristics enjoyed higher levels of perceived popularity and power and less disliking than those who did not. This relationship varied as a function of sex, the type of aggression considered, and the status construct predicted. Aggr. Behav. 32:396–408, 2006. © 2006 Wiley-Liss, Inc.

INTRODUCTION

Decades of sociometric research has established clear links between aggressive behavior and peer rejection, especially among boys [see Coie and Dodge, 1998; Newcomb et al., 1993; Rubin et al., 1998]. The message seemed straightforward and logical—if you are aggressive, other kids will not like you. However, other research indicates that only about half of the children who are aggressive are actually rejected by peers [e.g., Cillessen et al., 1992] and that at least some aggressive youth are actually central members of their social clique and/or popular within the peer group [e.g., Bagwell et al., 2000; Cairns et al., 1989; Estell et al., 2002; Luthar and McMahon, 1996; Rodkin et al., 2000]. The present study seeks to understand the processes through which aggression comes to be associated with high vs. low social status among peers. To do this, however, it becomes important to first consider a complex set of distinctions that have emerged within the literature between different forms of aggression, different conceptions of social status, and different types of power, and to consider the moderating role played by sex.

Many of the initial studies examining links between aggression and social status only considered boys [e.g., Cillessen et al., 1992; Luthar and McMahon, 1996; Rodkin et al., 2000] or only examined *overt* forms of aggression [e.g., fights, physical aggression, disruptiveness, etc.). When both boys and girls were considered, links between physical or overt aggression and high network centrality were sometimes found for boys, but not girls [e.g., Estell et al., 2002]. These results are not surprising, given that overt, physical aggression is

Grant sponsor: Hampton Grant Fund; Grant sponsor: Canadian Institutes for Health Research.

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Received 2 February 2005; Accepted 26 April 2005

Published online in Wiley InterScience (www.interscience.wiley.com). DOI: 10.1002/ab.20138

less common in girls [Hyde, 1984; Maccoby and Jacklin, 1974]. Girls are more likely to use more indirect or psychological forms of relational or social aggression, including exclusion and isolation, gossip and rumor spreading, and public humiliation [see Underwood, 2003; Vaillancourt, 2005; Vaillancourt and Hymel, 2004]. Like overt/physical aggression, relational or indirect forms of aggression have also been linked to peer rejection or disliking [e.g., Crick, 1997; Rys and Bear, 1997] or more controversial peer status [Crick and Grotpeter, 1995]. However, ethnographic work by Merten [1997] and Adler and Adler [1998] suggest that indirect and relational forms of aggression are also used to achieve and maintain status within the peer group. Accordingly, more recent studies have examined status/popularity links with both direct or overt physical forms of aggression as well as indirect social or relational forms of aggression. However, these relationships appear to vary by sex and to depend on how one defines status. As one example of just how complex the relationships can be, in a study of ninth-grade youth, Salmivalli et al. [2000] found that, for both boys and girls, overall aggression (including physical, verbal, and indirect aggression) was significantly and positively related to being highly disliked by both sexes, with the exception that aggressive girls were not particularly disliked by boys. In fact, the girls who were more aggressive were highly liked by boys. When different types of aggression were considered, however, they found that only verbal aggression by boys predicted peer disliking. For girls, all types of aggression predicted being disliked, with the exception that use of indirect aggression did not predict being disliked by girls. They also reported that boys who used more indirect aggression tended to be highly liked by other boys [See also Lease et al., 2002].

Research on social status or popularity within the peer group has drawn from two distinct research traditions that operationalize status very differently [Lease et al., 2002; Parkhurst and Hopmeyer, 1998; Rodkin et al., 2000]. Research within developmental and clinical psychology has operationalized status in terms of peer liking or acceptance vs. peer disliking or rejection using sociometric methods that quantify peer perceptions within a specified group. Research emanating from a sociological tradition, in contrast, has utilized more qualitative and ethnographic approaches and has relied on youth perceptions and social constructions of status or popularity which tend to associate status with visibility, influence, and dominance. Although related [Cillessen and Mayeux, 2004; LaFontana and Cillesse, 2002; Lease et al., 2002; Parkhurst and Hopmeyer, 1998; Prinstein and Cillessen, 2003], these two indices of status are not synonymous and show differential associations with aggressive as well as prosocial behavior.

Over the past decade, a growing body of research has shown that both overt/physical aggression and more indirect, social or relational aggression are *negatively* related to *sociometric* indices of status (liking, acceptance), but *positively* related to peer *perceptions* of who is most popular [e.g., Cillessen and Mayeux, 2004; LaFontana and Cillesse, 2002; Prinstein and Cillessen, 2003; Rose et al., 2004]. The more recent message seems to be—if you are aggressive, other kids will not like you, but you may still be perceived to be popular within the group. These relationships, however, appear to be more evident with somewhat older students (e.g., grades 6–9, Cillessen and Mayeux, 2004; LaFontana and Cillesse, 2002; Rose et al., 2004] and do vary depending on the type of aggression assessed and whether boys or girls are considered.

Of primary interest in this study are the *processes* through which aggressive behavior comes to be differentially related to status. In other words, why is it that some aggressive children and adolescents are rejected by their peers and viewed as unpopular while others maintain greater peer acceptance and are viewed as popular by peers. In their seminal review, Coie and Dodge [1998] suggest two possible reasons: (1) aggression may be valued in certain subcultures, given different social norms for aggression, or (2) other aspects of an individual's social behavior may compensate for aggressive behavior. We suggest a third possibility, based on distinctions made by LaFreniere and Charlesworth [1983] concerning implicit vs. explicit social power (p 66). Explicit social power "is expressed explicitly and forcefully and thereby elicits fear, submission, or compliance," whereas implicit social power "stems from a recognition of status or competence and thereby depends upon acceptance by subordinates." We suggest that use of explicit social power through aggression would be associated with peer disliking, since such behavior elicits fear, submission, and compliance. In contrast, use of implicit power, derived from peer recognition of "competency" (however, it is defined within the group), would not be associated with peer rejection, and in fact would elevate (or buffer) aggressive individuals' perceived popularity, moderating the relation between aggression and status.

Despite suggestions that "social behavior is primarily responsible for rejection by peers" [Coie,

1990; p 366], we argue for the need to look beyond the *behavior* of the individual in understanding the factors contributing to status. Several studies show that children and adolescents take into account other, non-behavioral characteristics when evaluating their peers and affording them status and influence within the peer group. Indeed, Rodkin et al. [2000] identified two subgroups of popular boys (grades 4–6), one characterized by peers as prosocial as well as dominant (i.e., studious leaders), and the other characterized as aggressive, disruptive troublemakers but both described as "cool" and athletic, characteristics that were valued by the group [see also Estell et al., 2002]. Ethnographic studies also suggest that "popular" individuals are often aggressive and dominant, but possess characteristics that are apparently valued by the peer group. For example, Adler et al. [1992] found that boys' perceived popularity was associated with being athletic, tough, cool, and socially sophisticated, as well as cruel and aggressive. Girls were popular because they were attractive, came from affluent families, and/or were interpersonally sophisticated, but were also described as mean, bossy, gossipy, and exclusionary. Other ethnographic studies paint a similar picture, with popular (dominant, influential) girls described by peers as physically attractive but mean and relationally aggressive [Eder, 1985; Eder and Kinney, 1995; Merten, 1997], and popular (dominant, influential) boys described as physically attractive and athletic but both aggressive and socially skilled [Eder and Kinney, 1995]. Thus, the "competencies" or peer-valued characteristics that underlie implicit power may vary as a function of sex.

LaFreniere and Charlesworth's [1983] distinction between implicit and explicit social power suggests that there are two different pathways to achieving status (visibility and influence) within the peer group, one through the explicit use of aggressive behavior, the other through the possession of peer-valued characteristics. These two forms of social power, however, should be differentially linked to peer acceptance/rejection. Explicit, aggressive social power should be associated with peer rejection and disliking, whereas implicit social power, afforded by possession of peer-valued characteristics, should be associated with peer acceptance and liking as well as perceived popularity. In other words, both aggressive behavior and the possession of peer-valued characteristics should be strongly and positively associated with perceived popularity but differentially related to sociometric indices of likeability. In examining these links, we consider perceptions of power and dominance within the peer group as well as indices of perceived popularity and sociometric status. Traditionally, dominance is a term applied to individuals who are able to actively manipulate and influence others' behavior [e.g., Maccoby and Jacklin, 1974; Pickert and Wall, 1981]. Accordingly, we hypothesized that peer perceptions of social power would be more strongly related to perceived popularity than likeability.

Finally, the present study examined whether the associations between aggression, social status, and peer-valued characteristics differed for girls and boys and for different forms of aggression (relational vs. overt/physical). The peer-valued characteristics associated with power and status likely differ for boys and girls [e.g., Adler et al., 1992; Merten, 1997], as do the likely forms of aggression displayed [see Underwood, 2003] and the resulting relations observed between aggression and social status [e.g., Cillessen and Mayeux, 2004]. Extending this research, we examine *how* some girls and boys maintain high social status despite being aggressive and also consider yet another form of social status (i.e., power) that has yet to be examined in relation to aggression.

METHOD

Participants

Participants were recruited from five elementary schools (Grades 6–7) and one secondary school (Grades 8–10), representing all the public schools within a small city in Western Canada (population 8,226). Specifically, 585 predominately White (93% Caucasian), middle-class students in grades 6 (51 girls, 60 boys), 7 (54 girls, 65 boys), 8 (65 girls, 62 boys), 9 (61 girls, 56 boys), and 10 (56 girls, 56 boys) (age range = 11–17 years) were included in the sample, reflecting a developmental period when issues of popularity and status are highly salient and valued [Gavin and Furman, 1989]. Only students who agreed to participate and who received parent consent were included, with an overall participation rate of 97%.

Procedures

As part of a longitudinal project, students completed several questionnaires in a 50-min group testing session. For this study, students were asked to nominate an unlimited number of grade-mates of either sex who best fit each of 40 sociometric, behavioral, and non-behavioral descriptors, follow-

ing procedures adapted from the Revised Class Play [Masten et al., 1985].

Measures

The "Class Play" measure included peer evaluations of (a) sociometric liking and disliking, (b) perceived popularity, (c) perceived power, (d) overt/physical and relational aggression, and (e) a variety of behavioral and non-behavioral characteristics believed to be either valued by the adolescent peer group or an expected correlate of status, as described below. Given variations in group sizes, each item was standardized within class (grades 6–7) or grade (grades 8–10).

Social status. Following Coie et al. [1982], positive and negative nominations ("Who are the people you like most/least in your grade?") were combined to yield a continuous measure of *sociometric status* or *social preference* for each student (standardized Liked Most nominations minus standardized Liked Least nominations), with higher scores indicating greater liking or preference among peers. The standardized item, "Who are the most popular people in your grade?" provided a continuous measure of *perceived popularity* within the group. The average of three standardized items ("Who seems to have a lot of power over others?", "Who is a person other kids will listen to and follow?", "Who is a leader?") was used to measure of *perceived power*, with higher scores indicating greater power or influence ($\alpha = .91$).

Overt/physical and relational aggression. Three items tapped *overt/physical aggression* ("Who hits others?", "Who starts fights and arguments with others?", "Who threatens other people to get their way?") and four tapped *relational aggression* ("Who tells others to stop liking a person to get even with them?", "Who spreads mean rumors about someone to get others to stop liking the person?", "Who will make someone feel bad or look bad by making a face, or turning away, or rolling their eyes?", "Who tries to control or dominate a person by keeping them out of the group?"). Each set of items was averaged to yield internally consistent composite measures of overt/physical aggression ($\alpha = .89$) and relational aggression ($\alpha = .91$), with higher scores indicating more aggression in each case.

Peer-valued characteristics. Eight peer assessment items derived from previous literature [e.g., Adler and Adler, 1995, 1998; Adler et al., 1992] were included to assess behavioral and non-behavioral characteristics and competencies that were likely valued by the peer group: "Who dresses well and is in style?", "Who is good looking or attractive?", "Who does well at sports?", "Who has a good sense of humor and can make people laugh?", "Who is someone with a lot of great things or possessions?", "Who is rich?", "Who is tough?", and "Who is someone with special talents or skills?". These items were standardized and averaged to create a single composite or overall peer-valued characteristics index ($\alpha = .76$), with higher scores indicating possession of more peer-valued characteristics.

RESULTS

Indices of Social Status

Pearson product–moment correlations were used to examine the associations between the three indices of social status for the entire sample and

TABLE I. Correlations Among Social Status and Aggression by Sex

	Power	Perceived popularity	Social preference	Overt/Physical aggression
Power	—			
Perceived popularity	O = .80			
	G = $.75_a$			
	B = $.85_b$			
Social preference	O = .25	O = .33		
	G = .24	G = .29		
	B = .27	B = .35		
Overt/physical aggression	O = .40	O = .25	O = −.28	
	G = .37	G = .23	G = −.34	
	B = .42	B = .29	B = −.24	
Relational aggression	O = .38	O = .31	O = −.23	O = .57
	G = .40	G = .30	G = $-.33_a$	G = $.79_a$
	B = .44	B = .34	B = $-.19_b$	B = $.66_b$

Note: O = overall sample ($N = 585$), G = girls ($n = 287$), B = boys ($n = 298$). All correlations are statistically significant at $P < .05$. Correlations which differ significantly for girls vs. boys are denoted by different subscripts within each cell.

for girls and boys. Sex differences were examined using Fisher Z tests for independent correlations [Howell, 2002]. As seen in Table I, social preference, perceived popularity, social power were all statistically significantly correlated, but the magnitude of these relations varied, with the strongest correlation observed between perceived popularity and power, and modest associations obtained between social preference and perceived popularity and power. This pattern of findings was generally similar for girls and boys, although the relationship between power and popularity was stronger for boys than for girls.

Aggression and Social Status by Sex

Next, we examined the relation between the two types of aggression, taking into account moderation by sex (using Fisher Z tests; see Table I). Consistent with previous studies [see Vaillancourt, 2005], relational and overt/physical aggression were correlated ($r = .57$, $P < .0001$), but this association was stronger for girls than boys, suggesting that these two forms of aggression were more distinct for boys. Not surprisingly, similar patterns of association were observed between these two forms of aggression and the three indices of social status. As seen previously [see Rubin et al., 1998], aggressive behavior was negatively related to social preference. This association was stronger for relationally aggressive girls than for relationally aggressive boys. As predicted, both forms of aggression were positively related to perceived popularity and power. Thus, highly aggressive students, regardless of the type of aggression, were not as well liked as their less aggressive peers, but nevertheless enjoyed relatively high social status as reflected in perceived popularity and power. The magnitude of these relationships was moderate, suggesting that aggression is not the only characteristic contributing to social status.

Social Status and Peer-Valued Characteristics

Correlational results indicated that students who were rated as high in social preference, perceived popularity, and power were also rated as more attractive, stylish, athletically competent, tough, and as having a good sense of humor as well as possessions and talents (see Table II). Perceived wealth was associated with high levels of perceived power and popularity, but was unrelated to social preference. Statistically significant sex differences (Fisher Z tests) revealed that perceived power was more strongly related to being attractive, wearing stylish clothes, being a good athlete, having a sense of humor, and being tough for boys than for girls. For girls, being powerful was more strongly related to being rich and having possessions than for boys. Somewhat similarly, popularity was more strongly related to being a good athlete, having a sense of humor, having special talent and being tough for boys than for girls. With respect to social preference, peer liking was more strongly associated with being a good athlete for boys than for girls. For both boys and girls, social preference was moderately related to the overall peer-valued characteristics composite, whereas popularity and power were strongly related to overall peer-valued characteristics, and this was especially true for boys regarding popularity.

Aggression, Social Status, and Peer-Valued Characteristics

In a final set of analyses, we explored the hypothesis that possession of peer-valued characteristics would moderate the relationship between aggression and social status. We predicted that aggressive students who possessed peer-valued characteristics would enjoy a higher level of social status than those who did not, particularly when status was assessed by perceived popularity and power, rather than social preference. Following Baron and Kenny [1986], hierarchical regression analyses were performed in which the peer-valued characteristics composite and peer-nominated aggression (relational or overt/physical) were entered simultaneously in the first step as the initial predictors of status (social preference or perceived popularity or power) and the interaction of the peer-valued characteristics composite and type of aggression was entered in a second step, also as a predictor of status. At each step $R^2\Delta$ was calculated, with significant increments in explained variance for the interaction term in Step 2 providing evidence for the moderator effect. For each of the indices of social status, these hierarchical regression analyses were conducted separately for relational and overt/physical aggression, and for the entire sample as well as for boys and girls separately. Statistically significant simple effects were followed up by trichotomizing the moderator variable into high, medium, and low levels (i.e., ± 1 standard deviations), a procedure which, according to Aiken and West [1991], allows us to examine how the relation between aggression and status changes at varying levels of the moderator (PVCs). Finally, we examined the moderating effect of sex by testing the difference between the b's for girls and boys to using

TABLE II. Correlations Among Social Status, Peer-Valued Characteristics by Sex

	Power	Perceived popularity	Social preference	Attractive	Style	Sports	Humor	Tough	Possessions	Rich
Perceived popularity	O = .80									
	$G = .75_a$									
	$B = .85_b$									
Social preference	O = .25	O = .33								
	G = .24	G = .29								
	B = .27	B = .35								
Attractive	O = .60	O = .79	O = .34							
	$G = .53_a$	G = .78	$G = .53_a$							
	$B = .66_b$	B = .81	$B = .66_b$							
Style	O = .64	O = .82	O = .27	O = .74						
	$G = .61_a$	G = .81	G = .22	G = .73						
	$B = .72_b$	B = .84	B = .30	B = .76						
Sports	O = .42	O = .39	O = .25	O = .36	O = .36					
	$G = .28_a$	$G = .21_a$	$G = .18_a$	$G = .17_a$	$G = .10_a$					
	$B = .50_b$	$B = .55_b$	$B = .37_b$	$B = .53_b$	$B = .47_b$					
Humor	O = .41	O = .38	O = .28	O = .26	O = .24	O = .35				
	$G = .30_a$	$G = .18_a$	G = .39	$G = .09_a$	$G = .09^{ns}$	$G = .21_a$				
	$B = .47_b$	$B = .53_b$	B = .30	$B = .38_b$	B = .40	$B = .39_b$				
Tough	O = .54	O = .40	O = .10	O = .28	O = .25	O = .37	O = .22			
	$G = .37_a$	$G = .25_a$	G = .11	$G = .12_a$	$G = .10_a$	G = .33	G = .28			
	$B = .64_b$	$B = .55_b$	B = .19	$B = .41_b$	$B = .43_b$	B = .39	B = .18			
Possessions	O = .34	O = .37	O = .10	O = .28	O = .41	O = .17	O = .18	O = .12		
	$G = .52_a$	G = .35	$G = .07^{ns}$	G = .27	$G = .35_a$	G = .14	G = .10	$G = .06^{ns}$		
	$B = .25_b$	B = .40	B = .16	B = .30	$B = .51_b$	B = .16	B = .19	B = .12		
Rich	0 = .29	O = .43	$O = .02^{ns}$	O = .34	O = .50	O = .15	O = .16	$O = .07^{ns}$	O = .73	
	$G = .45_a$	G = .49	G = −.04	G = .38	G = .53	G = .13	$G = .02_a$	$G = .05^{ns}$	$G = .54_a$	
	$B = .21_b$	B = .41	B = .07	B = .32	B = .51	B = .16	$B = .20_b$	$B = .07^{ns}$	$B = .83_b$	
Talents	O = .30	O = .28	O = .32	O = .28	O = .26	O = .43	O = .23	O = .12	O = .14	O = .13
	G = .29	$G = .19_a$	G = .27	$G = .20_a$	$G = .16^{ns}$	$G = .39_a$	$G = .22_a$	G = .16	$G = .06^{ns}$	$G = .05^{ns}$
	B = .36	$B = .43_b$	B = .34	$B = .40_b$	B = .43	$B = .60_b$	$B = .36_b$	B = .23	B = .27	B = .24
All peer-valued characteristics	O = .72	O = .79	O = .35							
	G = .73	$G = .75_a$	G = .35							
	B = .72	$B = .84_b$	B = .38							

Note: O = overall sample ($N = 585$), G = girls ($n = 287$), B = boys ($n = 298$). All correlations are statistically significant at $P < .05$ unless otherwise specified. ns = not statistically significant. Correlations which differ significantly for girls vs. boys are denoted by different subscripts within each cell.

TABLE III. Regression Analyses Examining the Moderating Role of Peer-Valued Characteristics

	Total sample				Girls				Boys			
	R^2	$R^2\Delta$	Sig.F	Sig.*	R^2	$R^2\Delta$	Sig.F	Sig.*	R^2	$R^2\Delta$	Sig.F	Sig.*
Perceived power												
Overt/physical aggression												
Step 1												
PVC				$P<.001$				$P<.001$				$P<.001$
O/PA	.57		$P<.001$	$P<.001$	.60		$P<.001$	$P<.001$	.57		$P<.001$	$P<.001$
Step 2												
PVC × O/PA	.61	.04	$P<.001$		.62	.02	$P<.001$		.65	.07	$P<.001$	
Relational aggression												
Step 1												
PVC				$P<.001$				$P<.001$				$P<.001$
RA	.57		$P<.001$	$P<.001$	.60		$P<.001$	$P<.001$	.57		$P<.001$	$P<.001$
Step 2												
PVC × RA	.63	.05	$P<.001$		.66	.06	$P<.001$		.61	.04	$P<.001$	
Perceived popularity												
Overt/physical aggression												
Step 1												
PVC				$P<.001$				$P<.001$				$P<.001$
O/PA	.63		$P<.001$	$P<.07$	.57		$P<.001$	$P<.01$	.72		$P<.001$	$P<.05$
Step 2												
PVC × O/PA	.63	.003	$P<.02$		.57	.00	ns		.74	.01	$P<.001$	
Relational aggression												
Step 1												
PVC				$P<.001$				$P<.001$				$P<.001$
RA	.64		$P<.001$	$P<.001$	.58		$P<.001$	$P<.001$	.85		$P<.001$	$P<.01$
Step 2												
PVC × RA	.65	.01	$P<.001$		.59	.01	$P<.006$		.86	.006	$P<.01$	
Social preference												
Overt/physical aggression												
Step 1												
PVC				$P<.001$				$P<.001$				$P<.001$
O/PA	.27		$P<.001$	$P<.001$	.29		$P<.001$	$P<.001$	.28		$P<.001$	$P<.001$
Step 2												
PVC × O/PA	.29	.02	$P<.001$		.30	.01	$P<.04$		.30	.02	$P<.004$	
Relational aggression												
Step 1												
PVC				$P<.001$				$P<.001$				$P<.001$
RA	.22		$P<.001$	$P<.001$	.30		$P<.001$	$P<.001$	.25		$P<.001$	$P<.001$
Step 2												
PVC × RA	.22	.00	ns		.30	.00	ns		.26	.00	ns	

Note: PVC = peer-valued characteristics; O/PA = overt/physical aggression; RA = relational aggression. ns = not statistically significant. *Significance level for each coefficient (PVC and aggression).

the following formula [Howell, 2002]:

$$t = \frac{b_1 - b_2}{s_{b_1 - b_2}}$$

where

$$s_{b_1 - b_2} = \sqrt{\frac{s^2_{Y \cdot X_1}}{s^2_{X_1}(N_1 - 1)} + \frac{s^2_{Y \cdot X_2}}{s^2_{X_2}(N_2 - 1)}}.$$

Peer-perceived power. As seen in Table III, overt/physical aggression and peer-valued characteristics (Step 1) were statistically significant predictors of power, together accounting for 57% of the variance in peer perceptions of power. This was true for both boys and girls, when considered separately, as well as for the overall sample. In addition, as hypothesized, the presence of peer-valued characteristics moderated the relationship between perceived

TABLE IV. Statistically Significant Product Terms: Unstandardized Beta Coefficients for High, Medium, and Low Levels of Peer-Valued Characteristics in Relation to Social Status and Aggression by Sex

		Total sample	Girls	Boys
	Moderator level	b^*	b	b
Peer-perceived power				
Overt/physical aggression	High	.38	.58	.39
	Medium	.11	.26	.08
	Low	−.15	$-.05^{ns}$	−.23
Relational aggression	High	.69	.68	.68
	Medium	.22	.22	.19
	Low	−.25	−.24	−.29
Peer-perceived popularity				
Overt/physical aggression	High	.10		.12
	Medium	$.02^{ns}$		$.01^{ns}$
	Low	$-.06^{ns}$		−.14
Relational aggression	High	.34	.41	.24
	Medium	.16	.15	$.06^{ns}$
	Low	$-.02^{ns}$	$-.10^{ns}$	$-.13^{ns}$
Social preference				
Overt/physical aggression	High	−.54	$-.76_a$	$-.40_b$
	Medium	−.82	-1.17_a	$-.65_b$
	Low	−1.02	-1.58_a	$-.90_b$

Note: The interpretation of the moderator effect across different levels is accomplished by analyzing the *unstandardized* beta (b) coefficient (Aiken and West, 1991). All b are statistically significant at $P < .05$ unless otherwise specified. ns = not statistically significant. Statistically significant differences in b's for girls and boys are denoted by different subscripts within each cell.

power and overt/physical aggression, accounting for an additional 4% of the variance for the sample as a whole, with similar effects observed for both boys and girls. A similar pattern of results was observed for relational aggression. Although peer-valued characteristics and relational aggression accounted for a significant amount of the variance in peer perceptions of power (57% for overall sample), the interaction of peer-valued characteristics, and relational aggression accounted for an additional 5% of the variance, reflecting a statistically significant moderation effect. Follow-up tests (see Table IV) revealed that the positive relation observed between aggression (overt/physical and relational) and peer-perceived power increased as the level of peer-valued characteristics increased and that this pattern of results did not differ for girls and boys. Thus, as hypothesized, the link between aggression and perceived power depended on the level of peer-valued characteristics one possessed in that aggression was associated with greater power for individuals with more peer-valued characteristics.

Perceived popularity. Results of regression analyses for perceived popularity also support the moderation hypotheses for both forms of aggression. Specifically, for the overall sample, 63% and 64% of the variance in perceived popularity were predicted by overt/physical and relational aggression, respectively (Step 1). The interaction of these predictors was also statistically significant, accounting for an additional ~1% of the variance, a significant moderation effect (see Table III). A similar pattern of results emerged for relational aggression for both boys and girls, with one exception. For overt/physical aggression, the interaction of peer-valued characteristics and aggression in predicting perceived popularity was only statistically significant for boys, not girls. Follow-up tests (see Table IV) indicated that, for boys, the positive relation between aggression (overt/physical and relational) and popularity increased as the level of peer-valued characteristics increased.

Social preference. Results of regression analyses predicting social preference varied as a function of the type of aggression considered (see Table III). Specifically, for overt/physical aggression, about 27% of the variance in social preference was predicted by aggression and peer-valued characteristics (Step 1), and the interaction of these two predictors (Step 2) was statistically significant, accounting for an additional 1% (girls) or 2% (boys) of the variance, reflecting meaningful moderation effects. Follow-up tests of statistically significant product terms (see Table IV) demon-

strated that the negative relation between overt/physical aggression and social preference decreased as the level of peer-valued characteristics increased. As hypothesized, the link between social preference and aggression depended on the level of peer-valued characteristics, with overt/physical aggression being associated with less social preference in individuals with fewer peer-valued characteristics. These results suggest that, although use of over/physical aggression was generally associated with lower social preference (peer liking), the magnitude of this relationship diminished for those who possessed greater peer-valued characteristics. This was especially true for aggressive boys, who were less disliked by peers than girls when they possessed more peer-valued characteristics. Said differently, overtly/physically aggressive girls were especially disliked when they had few, if any, peer-valued characteristics. In contrast, for relational aggression, results indicated that both peer-valued characteristics and relational aggression were statistically significant independent predictors of social preference (Step 1) for both sexes, accounting for 25% and 30% of the variance, respectively, but the interaction term was not statistically significant. Contrary to expectations, the relationship between relational aggression and social preference was not moderated by level of peer-valued characteristics, for girls or boys.

DISCUSSION

The aim of this study was to explore some of the processes underlying the relation between aggression and social status for girls and boys, with the hypothesis that this relationship is moderated by the possession of peer-valued characteristics. To this end, peer nomination data were used to assess both overt/physical and relational aggression and three distinct indices of social status—social preference, perceived popularity, and power—as well as a number of behavioral and non-behavioral characteristics that were likely to be valued among peers. An examination of the relations among these peer evaluations provided support for the arguments that social status encompasses more than peer liking, that different indices of social status (perceived power, popularity, social preference) were associated in distinct ways with behavioral and non-behavioral characteristics, and that strength of these associations varied for girls and boys.

These findings replicate and extend the literature in several ways. First, the present results confirm findings that perceived popularity and social preference are distinct, but overlapping social constructs. In the present sample, popularity and social preference were only modestly related, at a level similar to that reported by Parkhurst and Hopmeyer [1998] but somewhat lower than that reported in other studies [e.g., Cillessen and Mayeux, 2004; LaFontana and Cillesse, 2002; Lease et al., 2002; Prinstein and Cillessen, 2003], which may reflect variations across groups or subcultures. Also consistent with previous findings [LaFontana and Cillesse, 2002; Prinstein and Cillessen, 2003], the correlation between perceived popularity and social preference was stronger for boys than for girls. Extending this research, the present results also demonstrate that perceived popularity was strongly related to perceptions of power and dominance, an idea proposed previously [e.g., Weisfeld et al., 1983, 1984] but not verified empirically. As expected, perceptions of power were more strongly related to perceived popularity than social preference.

The distinctiveness of these social status constructs is also evident in their differential links to behavior, particularly aggression. As in previous research [e.g., Cillessen and Mayeux, 2004; Prinstein and Cillessen, 2003], physically and relationally aggressive adolescents were generally disliked by their peers, but many were nevertheless perceived to be popular *and* powerful. This pattern of relations held for both overt/physical and relational aggression, although relationally aggressive girls were more disliked than relationally aggressive boys. Again, aggressive individuals may be disliked but they still enjoy the benefits associated with being seen as high status (perceived popularity and power). In fact, Salmivalli et al. [2000] suggest that average or elevated social status may be a ''prerequisite'' for the use of (indirect) aggression.

Indices of power, popularity, and social preference were also differentially linked to the presence of peer-valued characteristics. Individuals who were rated by peers as being attractive, athletic, tough, funny, and stylish enjoyed higher levels of status, including greater perceived popularity, power, and social preference. Interestingly, being viewed as wealthy was only associated with popularity and power, not peer liking. This pattern of results held true for girls and boys, although the magnitude of the associations differed, with generally stronger relationships observed for boys than for girls. Thus, it seems that different characteristics and competencies are associated with different aspects of social status. When the composite of peer-valued characteristics was considered, results indicated stronger relations with perceived popularity and power than with social preference and that boys who possessed

more peer-valued characteristics were more popular than their female counterparts.

Most importantly, the present study adds to our understanding of the theoretical underpinnings of social status by examining at least one part of the processes involved in the links between aggression and status. We set out to answer the question of why it is that some aggressive individuals are afforded high social status (popularity and power) despite being generally disliked or rejected within the peer group, while others are not. Following LaFreniere and Charlesworth's [1983] distinction between implicit and explicit social power, we hypothesized that perceived power and popularity would be associated with both explicit power (aggression) and implicit power (possession of peer-valued characteristics), but that only implicit power or the possession of peer-valued characteristics would be associated with peer liking (social preference). We further hypothesized that possession of peer-valued characteristics would moderate the relationship between social status and aggression. Consistent with these hypotheses, results showed that the presence of peer-valued characteristics did interact significantly with both forms of aggression to determine the degree of status individuals enjoyed within the group. However, this moderation effect varied as a function of sex, the type of aggression, and the index of social status considered.

For boys, the expected relations among social status, aggression, and peer-valued characteristics were observed for all status indices, when physical/overt aggression was considered. Physically aggressive boys who possessed peer-valued characteristics were seen as more powerful, popular, and less disliked than those without such characteristics. Indeed, the negative relationship typically observed between overt/physical aggression and social preference decreased as level of peer-valued characteristics increased. For perceived power and popularity, the positive relationship between overt/physical aggression and status increased as the level of peer-valued characteristics increased, this was also true for relationally aggressive boys. Yet, possession of peer-valued characteristics did not moderate the likeability of relationally aggressive boys; relationally aggressive boys who possessed greater peer-valued characteristics were no more liked than those who did not.

For girls, results were more complex. The hypothesized moderating effect of peer-valued characteristics was supported when status was assessed in terms of perceived power for both forms of aggression. Both relationally and overtly/physically aggressive girls were perceived as more powerful within the group when they possessed peer-valued characteristics. When social status was assessed in terms of perceived popularity, the moderating effect of peer-valued characteristics was only supported in the case of relational aggression, but when social status was assessed in terms of sociometric liking (social preference), the moderating effect of peer-valued characteristics was only observed for overt/physical aggression. Follow-up tests indicated that physically aggressive girls were even more disliked than physically aggressive boys at each level of the moderator. Taken together, the results indicate that relationally aggressive girls were viewed as more popular when they possessed peer-valued characteristics than when they did not. Overtly/physically aggressive girls were viewed as less disliked when they possessed peer-valued characteristics than when they did not, although they were still more disliked than their male equivalents. Overtly/physically aggressive girls were not considered popular regardless of their peer-valued characteristics. Moreover, relationally aggressive girls (and boys!) were disliked regardless of their level of peer-valued characteristics.

Thus, possession of peer-valued characteristics is important in explaining the sometimes counter-intuitive associations observed between aggression and one's status within the peer group. However, the moderating effect of peer-valued characteristics was not observed in all cases. This may simply reflect the difficulty of detecting moderator effects in non-experimental research [see McClelland and Judd, 1993], particularly in the case of physically aggressive girls, given evidence that physical aggression is less common in girls and generally decreases with age [see Vaillancourt, 2005; Vaillancourt and Hymel, 2004]. Perhaps overt/physical forms of aggression simply did not occur with sufficient frequency among girls to allow for a fair test of the hypothesis. Alternatively, it could well be that physically aggressive girls, although rare, are quite negatively sanctioned within girls' peer groups and other characteristics and competencies simply cannot compensate, even valued ones.

The present results speak to the complexity of peer group dynamics during the adolescent period, when social status appears to vary as a function of both sex and the type of aggressive behavior utilized. It is noteworthy that peer-valued characteristics did not moderate the negative relationship between relational aggression and sociometric liking for either sex. This may be attributable to several factors. First, in contrast to physical aggression for which

there are public prohibitions (e.g., zero-tolerance policies of schools), social sanctions against relational aggression are typically less clear and less universally proclaimed. Another possibility is that relational aggression typically involves the manipulation of the intimate peer group structure [Crick and Grotpeter, 1995; Lagerspetz et al., 1988] and therefore may be viewed as more threatening in that it involves the loss of social alliances and friendships. As a result, those experiencing or witnessing such abuse would be less forgiving, given the salience and importance of friendships to adolescents. Longitudinal research by Cillessen and Mayeux [2004] indicates that over time, relational aggression becomes increasingly linked to perceived popularity, but decreasingly linked to peer liking, becoming a primary and effective vehicle for maintaining dominance that is rewarded and adaptive, but not without costs. It would be interesting to know whether high status, relationally aggressive individuals ever realize the degree to which they are disliked.

Although the results of this study extend our theoretical understanding of the link between social status and aggression, replication is needed, along with further research on the effects of peer-valued characteristics on group dynamics and interpersonal behavior. Of interest would be a replication of the present findings using different types of measures and/or multiple informants (i.e., self-report, teacher, and peer-report), thereby avoiding potential problems of shared method variance. Future research should also examine whether the nature of peer-valued characteristics varies across social groups. The peer-valued characteristics considered in this study were those that had been shown in ethnographic research to be related to perceived popularity and power [e.g., Adler and Adler, 1995, 1998; Adler et al., 1992; Eder, 1985; Eder and Kinney, 1995]. However, peer-valued characteristics are probably contextually and historically based, derived from cultural and group norms that evolve over time within a particular group or setting. This point is highlighted when considering that in the present study, peer-valued characteristics and their relation to social status varied in magnitude for girls and boys, with high peer-valued characteristics boys enjoying higher social status than high peer-valued characteristics girls. What moderates the relationship between aggression and social status may vary from one point in time to another, from one school to another, or from one community to another, and may also differ as a function of sex and age. In future research, it will be important to determine a priori the degree to which the peer group actually values certain characteristics. Aggression itself might also serve as a peer-valued characteristic [e.g., Artz, 1998]. Indeed, research has shown that aggressive children are less rejected in classes where aggression is normative and more rejected in classes where aggression is rare [e.g., Boivin et al., 1995]. The value placed on aggression may also increase with age, as adolescents, relative to younger children, are more attracted to aggressive peers [Bukowski et al., 2000]. What makes adolescents popular, powerful, and well liked in one context does not necessarily hold in a different social milieu.

Finally, it is important to consider the implications of the present findings for school-based interventions aimed at reducing aggression. Given the present results, it may be difficult to dissuade the use of aggression if it is seen as a source or privilege of high status, especially during a period when being popular and dominant are important social pursuits [e.g., Gavin and Furman, 1989]. In fact, according to Harris' [1995, 1998] group socialization theory, "children get their ideas of how to behave by identifying with a group and taking on its attitudes, behaviors, speech, and styles of dress and adornment" (p 169). If adolescents view aggressive peers (who possess peer-valued characteristics) as popular and powerful, aggressive behavior will likely persist. Violence reduction programs need to focus, not only on changing the behavior of aggressive adolescents (person focus), but also on changing peer culture and the attitudes and norms of the peer group (group focus), as suggested by Coie and Dodge [1998, see also Harris, 1995, 1998]. Adults may also play a critical role, directly or indirectly, in establishing school priorities and traditions [Brown, 1990]. For example, if athletic prowess is emphasized over academic ability, this may impact adolescents' beliefs concerning the importance of possessing such skill [see Eder, 1995].

As we have argued elsewhere [Vaillancourt and Hymel, 2004], understanding the factors that contribute to the development and maintenance of aggression requires a greater appreciation of the social context in which it develops and the influence of peers. Results of the present study demonstrate that peer-group values play a critical role in maintaining such behavior. Unfortunately, in some cases, possession of peer-valued characteristics serves as a buffer, affording aggressive students considerable status and power despite their negative behavior. These findings underscore the importance of understanding the role of the peer group in the development of the individual.

ACKNOWLEDGMENTS

Support for this research was provided by the Hampton Grant Fund at the University of British Columbia and by the Canadian Institutes for Health Research as part of a "newly emerging team" on gender and aggression. The authors wish to thank the students who participated in this research, and the administrators, teachers, staff, and parents who enthusiastically supported this project. Finally, the authors thank Dr. Patricia McDougall, University of Saskatchewan, for her help with the project and Amanda Krygsman for her help with the preparation of this manuscript.

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