Published in final edited form as:

J Sch Psychol. 2010 August ; 48(4): 313–333. doi:10.1016/j.jsp.2010.03.001.

Facial Attractiveness as a Moderator of the Association between Social and Physical Aggression and Popularity in Adolescents

Lisa H. Rosen^a and Marion K. Underwood^a

^a School of Behavioral and Brain Sciences, The University of Texas at Dallas

Abstract

This study examined the relations between facial attractiveness, aggression, and popularity in adolescence to determine whether facial attractiveness would buffer against the negative effects of aggression on popularity. We collected ratings of facial attractiveness from standardized photographs, and teachers provided information on adolescents' social aggression, physical aggression, and popularity for 143 seventh graders (70 girls). Regression analyses indicated that facial attractiveness moderated the relations between both types of aggression and popularity. Aggression was associated with a reduction in popularity for adolescents low on facial attractiveness. However, popularity did not decrease as a function of aggression for adolescents high on facial attractiveness. Aggressors with high facial attractiveness may experience fewer negative consequences to their social standing, thus contributing to higher overall rates of aggression in school settings.

Keywords

Social aggression; Indirect aggression; Relational aggression; Physical aggression; Social Status

Although many children who behave aggressively are disliked by their peers, some aggressive youth are able to maintain high social status in their peer ecologies (Coie & Dodge, 1998; Coie & Koeppl, 1990; Rodkin, Farmer, Pearl, & Van Acker, 2000). Historically, researchers have tended to view aggressive youth as having low social status; however, recent evidence suggests that some aggressors are regarded favorably by their peers and are prominently involved in their peer ecologies (Rodkin & Hodges, 2003). In acknowledging the heterogeneity in the social status of aggressive youth, some researchers have categorized children into one of four categories: popular-aggressive, popular-nonaggressive, nonpopular-aggressive, and nonpopular-nonaggressive (e.g., Rodkin, Farmer, Pearl, & Van Acker, 2006). Aggressive-popular youth are often perceived as *being cool*, a measure of social status, by their classmates (Rodkin et al., 2006).

Recent attention has been devoted to identifying youth who are both popular and aggressive (Rodkin & Hodges, 2003). Educators and psychologists may more easily identify aggressors with low social status who are rejected by their peers than aggressors who enjoy high status and are actively involved in their peer networks. It is important that popular aggressors not go

Correspondence concerning this article should be addressed to Marion K. Underwood, School of Behavioral and Brain Sciences, The University of Texas at Dallas, PO Box 830688, GR 41, Richardson, TX 75080, USA. undrwd@utdallas.edu.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

undetected as these children are often prominent members of socially connected groups who are able to influence the norms of their peer ecology. Aggressive behavior on the part of this group calls into question the school-sanctioned notion to refrain from aggressive conduct, and may even encourage aggressive behavior in other youth (Rodkin et al., 2006; Rodkin & Hodges, 2003; Vaillancourt & Hymel, 2006). Rodkin et al. suggest that “reputational support among peers for aggressive children can subvert intervention attempts and is a serious international concern” (p. 176).

Given the influence aggressive youth may have on their peer group, it is important to understand why some aggressors are perceived as unpopular whereas other aggressors enjoy high social status (Vaillancourt & Hymel, 2006). Children who are both aggressive and popular may possess certain characteristics that buffer against the negative effects of aggression. Rodkin et al. (2000) found two subtypes of popular boys based on their analyses of teacher ratings. The group that they termed “model boys” was rated high on popularity and prosocial behavior, and the group that they termed “tough boys” was rated high on popularity and aggressive behavior. Both subtypes of popular boys were rated high on Olympian characteristics, which are operationally defined as being “good looking”, “good at sports”, and “wins a lot” (Rodkin et al., 2000; Rodkin et al. 2006; Xie, Cairns, & Cairns, 1999). Alternatively, those boys who were aggressive and unpopular received low ratings on Olympian characteristics.

Similarly, Vaillancourt and Hymel (2006) examined the moderating effect of a composite measure of peer-rated positive qualities including attractiveness, sense of style, humor, athletic ability, and special talents. The composite measure of positive characteristics moderated the relationship between aggression and popularity; overtly and relationally aggressive adolescents were perceived as more popular if they had high ratings on the composite measure of peer-rated positive characteristics as compared to low ratings on the composite measure of peer-rated positive characteristics.

The work of Rodkin et al. (2000) and Vaillancourt and Hymel (2006) suggests that possessing positive qualities helps to buffer against the negative effects of aggression on popularity. Facial attractiveness may be one important characteristic that moderates the relationship between aggression and social status. Attractiveness is positively associated with popularity (Eder, 1985; Xie, Li, Boucher, Hutchins, & Cairns, 2006), and individuals who are both attractive and aggressive may be perceived as popular. Although preliminary support for the moderating role of attractiveness was found in the work by Rodkin et al. (2000) and Vaillancourt and Hymel (2006), both studies examined attractiveness as part of a larger constellation of peer-valued characteristics. Additional research is needed to examine whether facial attractiveness independent of other positive qualities is an important factor accounting for the heterogeneity in the social status of aggressive youth. The current study specifically examines facial attractiveness as a moderator of the relationship between aggression and popularity.

Attractiveness and Social Preferences

Facial attractiveness may be a particularly important characteristic accounting for the heterogeneity in the social status of aggressive youth given that facial attractiveness often brings social advantages beginning at an early age. Prior research has conceptualized attractiveness as a measure of how pleasant an individual looks (Patzer, 2006), and some researchers have used the term beautiful to refer to someone who is perceived as highly attractive (Dion, Berscheid, & Walster, 1972). Research has suggested that adults view attractive babies as smarter, more likable, and less disruptive (Stephan & Langlois, 1984), and mothers may even behave more affectionately toward their own attractive infants (Langlois, Ritter, Casey, & Sawin, 1995). Preschoolers have been shown to often make judgments about unknown peers in a manner that is congruent with the “beauty-is-good” stereotype (Dion et al., 1972); that is, they ascribe positive traits to attractive individuals and negative traits to

unattractive individuals (Dion, 1973). Furthermore, in a sociometric task utilizing pictures of unknown peers, preschoolers were more likely to select attractive peers as potential friends (Dion, 1973). These findings of social preferences toward attractive individuals have been replicated with samples of older children and adolescents (Kleck, Richardson, & Ronald, 1974). A positive relationship between attractiveness and sociometric status has also been found for children who are acquainted with one another (Lerner & Lerner, 1977; Salvia, Sheare, & Algozzine, 1975; Vaughn & Langlois, 1983).

Although the relationship between attractiveness and social status has been well documented in the literature, few empirical studies have investigated whether attractiveness can compensate for negative social behaviors. The current study examines the relations between facial attractiveness, aggression, and social status among early adolescents. Specifically, we hypothesized that facial attractiveness would moderate the relation between aggression and popularity, such that aggression would be associated with low popularity for adolescents rated low on facial attractiveness but not for adolescents rated high on facial attractiveness. If this were the case, facial attractiveness could help account for past findings of heterogeneity in the social status of aggressive children (e.g., Estell, Farmer, Pearl, Van Acker, & Rodkin, 2008; Rodkin et al., 2000).

Attractiveness and the Educational Environment

Attractiveness plays an important role in many different settings, and the educational environment is no exception. Meta-analytic findings suggest that teachers judge attractive students more positively than their unattractive counterparts (Ritts, Patterson, & Tubbs, 1992). Early research on the students' attractiveness and teachers' expectations was conducted by Clifford and Walster (1973) who presented fifth-grade teachers with information about a hypothetical student. The written information was identical in all conditions, but photographs were varied such that some teachers saw a photograph of an attractive student and others saw a photograph of an unattractive student. Attractive students were rated as scoring higher on IQ tests, having parents that were more committed to their educational attainment, and being more likely to pursue opportunities for advanced education. Similarly, a naturalistic study found that teachers judged more attractive students as having greater academic ability than less attractive students (Kenealy, Frude, & Shaw, 1988). These differential teacher expectations as a function of attractiveness may create self-fulfilling prophecies for students (Kenealy et al., 1988; Ritts et al., 1992).

Likewise, school psychologists can be influenced by students' attractiveness. Elovitz and Salvia (1982) presented school psychologists with case studies accompanied by a picture of the hypothetical student. The attractiveness of the photograph was varied, but the information presented about the student remained constant across attractiveness conditions. School psychologists made different recommendations for attractive as compared to unattractive students; they suggested that attractive students be integrated into their regular classroom for longer periods of time and were more likely to suggest that unattractive students be placed in programs for the mentally retarded. Moreover, unattractive students were expected to demonstrate greater difficulties at future evaluations than were their more attractive counterparts. Naturalistic study provides converging evidence for the influence of attractiveness in the referral process; youth referred by school officials for treatment of school adjustment problems were rated as less attractive than non-referred youth (Cowen, Weissberg, & Guare, 1984).

Research has suggested that students are also influenced by the attractiveness of school officials (Hamermesch & Parker, 2005; Hunsberger & Cavanagh, 1988; Riniolo, Johnson, Sherman, & Misso, 2006). For example, when presented with pictures of different teachers, students in first and sixth grades indicated that an attractive teacher would more likely be nice, happy, and an

effective educator as compared to an unattractive teacher (Hunsberger & Cavanagh, 1988). Further, students were more likely to want to be in the class of an attractive teacher. These findings have been extended to the university environment; attractive professors receive more favorable student evaluations (Hamermesch & Parker, 2005; Riniolo et al., 2006). Attractiveness also influences students' perceptions and treatment of their classmates, with attractive peers receiving preferable treatment (Dion, 1973; Langlois et al., 2000).

Attractiveness and the Evaluation of Transgressions

One form of preferential treatment that attractive individuals receive is that they are frequently evaluated more leniently for their transgressions than their less attractive counterparts (Darby & Jeffers, 1988; DeSantis & Kayson, 1997; Dion, 1972; Mazzella & Feingold, 1994; Stewart, 1980). Dion (1972) suggests that lenient treatment of attractive individuals is the result of trying to resolve a cognitive inconsistency; antisocial behavior on the part of an attractive individual is incongruent with the notion that attractive individuals possess positive characteristics and behave in prosocial ways. In order to resolve this cognitive inconsistency, transgressions committed by attractive individuals may be attributed to passing conditions, such as a bad mood, rather than to enduring antisocial dispositions. Likewise, antisocial behavior may be viewed as an anomaly, which is unlikely to reoccur when perpetrated by an attractive individual.

Empirical support for Dion's (1972) theory is found in investigations of adults' judgments of children's transgressions (Berkowitz & Frodi, 1979; Dion, 1974). Undergraduate females were presented with hypothetical scenarios of a child behaving in a physically aggressive manner, and these vignettes were accompanied by a photograph of an attractive or unattractive child (Dion, 1972). Severe misconduct on the part of an unattractive child was viewed as more indicative of an antisocial disposition than the same act committed by an attractive child. Judges believed that attractive aggressors were less likely to misbehave in the future than were unattractive aggressors. This tendency was clearly illustrated by two different responses to the same transgression committed by an attractive as compared to unattractive girl. An attractive aggressor was described as "a perfectly charming little girl...but, like everyone else, a bad day may occur...Her cruelty need not be taken too seriously", whereas an unattractive aggressor was described as being likely to "pick a fight with other children...She would be a brat at home. All in all, she would be a real problem" (Katz, 2007, p. 342). Adult females also behaved more punitively toward unattractive as compared to attractive male children; harsher punishments were administered to less attractive males (Dion, 1974). These results have been replicated; adult females who were engaged in a distracter task while evaluating a child's performance were more likely to deliver harsher penalties to less attractive boys and girls (Berkowitz & Frodi, 1979).

In accordance with Dion's theory (1972), peers may be less likely to attribute aggressive behaviors to enduring characteristics when committed by an attractive child. This in turn, would help to preserve the social status of aggressors with facial attractiveness. Differential attributions for aggressive behavior may result in aggressive children high on attractiveness being perceived as more popular than aggressive children low on attractiveness.

Current Research

Building on the findings of Rodkin et al. (2000) and Vaillancourt and Hymel (2006), the current study examines whether an independent measure of facial attractiveness moderates the relationship between aggression and popularity. The current study is important because attractiveness biases operate within the educational setting (Kenealy et al., 1988; Langlois et al., 2000; Ritts et al., 1992). Research such as this can make educators and school psychologists more aware of how attractiveness stereotypes influence the dynamics of the school

environment. Elovitz and Salvia (1982) argue that increased awareness of how attractiveness biases influence the educational setting will help school officials better serve their students. Further, this work will add to our understanding of why some aggressors are able to maintain high social status whereas others are unpopular. If aggressors with high facial attractiveness experience fewer negative consequences to their social standing, this might contribute to higher overall rates of aggression in school settings (Cillessen & Mayeux, 2004).

We seek to extend prior research by isolating the effects of facial attractiveness, rather than examining facial attractiveness as part of a larger constellation of positive characteristics (e.g., athletic ability, sense of style; Vaillancourt & Hymel, 2006). Although prior research examining composite measures of peer-valued characteristics has provided important information, the role of specific peer-valued characteristics (e.g., facial attractiveness) in moderating the relation between aggression and social status remains unknown. By examining facial attractiveness separately from other positive characteristics, we will be able to determine the unique effects of physical appearance. This is also one of the first studies to examine independent ratings of facial attractiveness in relation to aggression and popularity. We use the term independent to acknowledge that a large group of individuals is rating photographs of unknown persons, and thus are uninfluenced by interaction history or knowledge of participants' non-physical characteristics (e.g., intelligence, personality, family income). Previous investigations have relied on peer (Vaillancourt & Hymel) and teacher (Rodkin et al.) ratings of attractiveness that are likely influenced by knowledge of other characteristics and past interactions. We focus solely on facial attractiveness because previous studies have shown this to be an important variable in children's peer relationships (see Langlois et al., 2000 for a meta-analysis).

Aggressive behavior can take many forms, and both physical aggression and social aggression were assessed in the current study. Whereas physical aggression refers to behaviors intended to inflict physical harm, social aggression refers to behaviors intended to harm another's social status or friendships (Underwood, 2003). Examples of socially aggressive behaviors include social exclusion, malicious gossip, and friendship manipulation (Galen & Underwood, 1997; Paquette & Underwood, 1999; Underwood, 2003). Different terms such as indirect aggression (Lagerspetz, Bjorkqvist, & Peltonen, 1988; Miller & Vaillancourt, 2007; Owens, Shute, & Slee, 2000) and relational aggression (Crick & Bigbee, 1998; Crick, Casas, & Nelson, 2002; Swearer, 2008) have been used to refer to constructs similar to social aggression. The conceptualization of social aggression is distinct from related constructs in that it acknowledges that these behaviors can take verbal as well as nonverbal forms (e.g., scornful glares, contemptuous facial expressions) and may be either direct or indirect in nature (Archer & Coyne, 2005; Underwood, 2004). Consensus has not been reached as to the best term and evidence indicates overlap among these different constructs (Archer & Coyne, 2005). Because this study focused on behaviors conceptualized as social aggression, we use this term throughout the paper. Following Vaillancourt and Hymel (2006), we chose to examine social aggression and physical aggression separately because it is not yet clear whether facial attractiveness and popularity may relate differently to physical and social aggression. Further, it is important to examine both physical and social aggression because both forms of aggression are associated with myriad adjustment problems (see Dodge, Coie, & Lynam, 2006; Crick, Ostrov, & Kawabata, 2007; and Underwood, 2003, for reviews of adjustment problems related to physical and social aggression).

Examining aggression necessitates careful consideration of gender. A large body of research documents that boys and men engage in more physical aggression than do girls and women (Card, Stucky, Sawalani, & Little, 2008; Dodge et al., 2006). Although physically aggressive girls are fewer in number, they are at risk for maladjustment just as are physically aggressive boys (Underwood & Coie, 2004). Gender differences in social aggression are less clear;

findings of gender differences in social aggression are inconsistent and seem to depend on the rater and age of the participants (Archer, 2004). Results of a recent meta-analysis suggest that the gender difference in social aggression favoring girls, although significant, is so small as to be trivial (Card et al., 2008). Although girls and boys may not differ on the frequency with which they employ social aggression, there may be gender differences in the factors that moderate the relation between social aggression and popularity. Thus, gender was considered in all analyses.

The current study included independent assessments of facial attractiveness and teacher ratings of social behaviors collected during participants' seventh grade year. Two primary research questions guided the current study: (1) does facial attractiveness moderate the relation between social aggression and popularity, and (2) does facial attractiveness moderate the relation between physical aggression and popularity? We hypothesized that facial attractiveness would moderate the relation between aggression and popularity such that aggressive adolescents would be perceived as more popular if they were rated as attractive as compared to unattractive. We expected the same pattern of results for measures of both social and physical aggression. Specifically, we hypothesized that socially and physically aggressive adolescents would be perceived as more popular if they were attractive as compared to unattractive. We did not expect to find gender differences, but rather hypothesized that facial attractiveness would serve a similar protective function in both boys' and girls' peer relations, which is consistent with findings that attractiveness is important for both males and females (Langlois et al., 2000).

Method

Participants

Participants were enrolled in a 5-year longitudinal study on the development and outcomes of social aggression. Previously published studies based on this longitudinal data set have not examined the relations between facial attractiveness, aggression, and popularity (Rosen et al., 2009; Underwood, Beron, & Rosen, 2009; Underwood & Rosen, 2009). Children were originally recruited from third-grade classrooms from 13 elementary schools in a diverse suburban school district. The number of third-grade classrooms ranged from two to five across schools and the number of students recruited across schools ranged from 12 to 45. Participants and their parents completed yearly laboratory visits around the time of the child's birthday. The first birthday visit was scheduled during participants' fourth grade year, during which 237 children and their parents participated.

The data presented here were collected during the participants' annual laboratory visit in seventh grade, and 201 children and their parents participated at this time. The current study focuses on students in seventh grade because this is the first junior high school year within the school district, and represents a time when youth face the task of establishing their status in the new social hierarchy (Cillessen & Mayeux, 2007).

Following the laboratory visit, we invited children to participate in the picture-taking portion of the study. Photographs were collected from 85% of the seventh graders who participated in the larger longitudinal study ($n = 170$). Participants had dispersed to 22 middle schools by seventh grade, and several schools ($n = 13$) had only one participant whereas some schools had more than 5 students ($n = 7$). There were no significant differences for popularity or physical aggression between the group that was photographed and the group that was not photographed. The group that was not photographed was more socially aggressive ($M = 2.07$, $SD = .77$) than the group that was photographed ($M = 1.72$, $SD = .71$), $t(192) = 2.94$, $p < .05$, Cohen's $d = .48$.

Teacher ratings were collected for 143 target children who were photographed. Participants who were photographed and had teacher data included 70 females and 73 males. Parent-reported child ethnicity was 58.7% European American, 18.9% Mexican American, 18.9% African American, and 3.5% other ethnicities, which was representative of the U.S. population as reported by the U.S. Census Bureau (2000) and the recruited school district. The school district reported the following demographic breakdown of the student population for the year we recruited: 40.1% European American, 25.8% Hispanic, and 25.1% African American (Texas Education Agency, 2009a). Analyses were conducted on the data of these 143 students who were photographed and had teacher reports; however, analyses examining popularity were limited to 142 students given that one teacher elected not to complete the measure of popularity. There was no significant difference in facial attractiveness between participants missing teacher assessments and those with completed teacher assessments.

Participants' seventh-grade Language Arts teachers were invited to provide ratings of students' social behaviors at school given that these teachers had the students for two class periods in accordance with the policy of the participating school district. The district reported the following demographic breakdown for teachers: 83% European American, 8% African American, 7% Hispanic, and 2% other ethnicities (Texas Education Agency, 2009b). On average, teachers in the participating district had 9.1 years of experience, and 22% of teachers had advanced degrees (Texas Education Agency, 2009b).

Procedures

Parent consent was obtained upon initial recruitment into the longitudinal study. Research assistants visited 32 third-grade public school classrooms and sent home permission letters. Approximately 55% of letters were returned with consent to participate for the duration of the 5-year study. This rate of consent is commensurate with many similar studies that report consent rates (Betan, Roberts, & McCluskey-Fawcett, 1995; Sifers, Puddy, Warren, & Roberts, 2002). However, our rate of consent is lower than that of many school-based studies of peer aggression (e.g., Crick, 1997; Putallaz et al., 2007). Perhaps our rate of consent is lower than other studies because, in addition to school-based data collection, the current longitudinal study involved parent and child participation in a series of laboratory visits over the course of 5 years.

Participants were compensated \$25 for their seventh-grade laboratory visit. We obtained separate written consent from participants' parents for the picture-taking portion of the study after providing them with detailed information regarding our ratings procedure and protocol for image storage. We followed a standardized protocol for taking pictures (Langlois & Roggman, 1990). Participants were posed with a neutral expression in front of a blue backdrop. A draped sheet was used to mask clothing cues. We used Adobe Photoshop™ to equate for various image characteristics (e.g., brightness).

Our procedure for collecting ratings of facial attractiveness was modeled after previous investigations (e.g., Griffin & Langlois, 2006; Lerner & Lerner, 1977; Ramsey & Langlois, 2002). Raters were recruited from psychology courses at a public university in the south. Students from many different academic disciplines enroll in psychology courses to fulfill distribution requirements, and the demographics of students in psychology courses reflect the demographics of the university. We elected to use psychology students as raters because past research has shown that individuals of different ages agree about who is and who is not attractive, and our procedure is consistent with past research that has used adult raters to assess the attractiveness of child participants (e.g., Lerner & Lerner, 1977; Ramsey & Langlois, 2002). The number of raters used in previous investigations varies between 40 (e.g., Ramsey & Langlois, 2002) and 100 or more raters (e.g., Crowder & Hunter, 2004). Our rating sample was large ($N = 169$, 119 females). Rater self-reported ethnicity was 54.2% European American,

16.7% Asian American, 13.7% Mexican American, 6.5% African American, 6.6% other, and 2.4% no ethnicity reported.

We presented the photographs of adolescent participants to undergraduate men and women who rated each participant's facial attractiveness using a 1 (*very unattractive*) to 5 (*very attractive*) Likert scale. As was the case in previous investigations (e.g., Ramsey & Langlois, 2002), we did not define attractiveness. Although images were presented in a standardized order, we first presented all photographs to raters to provide them with the range of faces. Undergraduate raters were then presented again with the entire set of photographs of adolescent participants and rated each image for facial attractiveness. We created an average facial attractiveness rating for each participant. The average facial attractiveness rating for participants in this study ranged from 1.29 to 3.95, which is consistent with past research by Griffin and Langlois (2006) that examined responses to faces high in attractiveness (average ratings ranged from 2.89 to 3.85) and low in attractiveness (average ratings ranged from 1.26 to 1.97) using a 5-point scale.

This methodology has proven to be reliable for obtaining attractiveness ratings of both children and adults (e.g., Griffin & Langlois, 2006; Ramsey & Langlois, 2002). Test-retest reliability for attractiveness ratings is high; the average correlation between judges' initial ratings and ratings of the same faces 1.5 years later was .82. (McGovern, Neale, & Kendler, 1996). Inter-rater agreement in ratings is also high with an average inter-rater correlation of .70 (Dion et al., 1972). Cronbach's alpha has ranged from .85 to .97 (Henderson & Anglin, 2003; Ramsey & Langlois, 2002; Vaughn & Langlois, 1983). Similar to previous studies (e.g., Langlois et al., 2000; Vaughn & Langlois, 1983), our ratings were reliable (intraclass correlation coefficient (ICC) was .99 for ratings of girls photographs and .98 for ratings of boys photographs). We also assessed cross-cultural agreement in ratings by examining correlations between the mean ratings of each face obtained by European American raters, Asian American raters, and Mexican American raters (McArthur & Berry, 1987). As found in past research (Langlois et al., 2000), cross-cultural agreement was high (range, $r = .918$ to $r = .923$, p 's < .001).

Measures

We chose to invite teachers to provide ratings of aggression and popularity in the current study because of the efficiency and reliability offered by this method (Cillessen, Terry, Coie, & Lochman, 2002; Henry, Miller-Johnson, Simon, & Schoeny, 2006; Merrell, Buchanan, & Tran, 2006). Prior research has relied on teacher ratings to assess aggressiveness and popularity in elementary school students, middle school students, and high school students (see Cairns, Cairns, Neckerman, Ferguson, & Gariepy, 1989). Correspondence between teacher and peer ratings of aggression has been documented in studies through late adolescence (Ledingham, Younger, Schwartzman, & Bergeron, 1982; Pakaslahti & Keltikangas-Jarvinen, 2000; Pekarik, Prinz, Liebert, Weintraub, & Neale, 1976). Ledingham and colleagues (1982) found that teacher and peer ratings of aggression were correlated during seventh grade ($r = .65$). Similar levels of agreement were found in Pekarik and colleagues' (1976) analyses of the correspondence between teacher and peer ratings of aggression for students in sixth through ninth grades (range, $r = .63$ to $r = .73$).

There also appears to be significant correspondence between teacher and peer ratings of popularity through adolescence (e.g., Ledingham et al., 1982; Matson, Esveldt-Dawson, & Kazdin, 1983). Matson and colleagues (1983) found that peer nominations of popularity corresponded with teacher ratings of popularity for a sample of children between the ages of 8 to 13 ($r = .62$). For a seventh-grade sample, Ledingham and colleagues (1982) found significant correspondence between teacher and peer ratings of student likeability ($r = .48$).

Teachers may provide better assessments of aggression and social acceptance than either self reporters or parent reporters. Self-ratings of aggression and peer acceptance may be subject to strong social desirability biases (Ledingham et al., 1982; Pakaslahti & Keltikangas-Jarvinen, 2000; Pekarik et al., 1976). Parents may have similar biases, and, in addition, likely have less information about their children's aggressive behavior and social standing than do teachers and peers.

Children's Social Behavior Scale – Teacher Form (CSBS-T)—Teachers completed a modified version of the CSBS-T (Crick, 1996), which assesses relational aggression, physical aggression, and prosocial behavior. Teachers' reports of adolescents' social behaviors on the CSBS-T are positively correlated with peer nominations; there is strong correspondence with peer nomination measures of relational aggression ($r = .57$ for boys and $r = .63$ for girls) and physical aggression ($r = .69$ for boys and $r = .74$ for girls; Crick, 1996). Convergent validity of the CSBS-T is suggested by the association found between physical and relational aggression as assessed by this measure and peer difficulties (Collett, Ohan, & Myers, 2003).

The CSBS-T was modified to include an additional social aggression item. Teachers rated whether specific behaviors were characteristic of their students using a Likert scale ranging from 1 (*never true of this student*) to 5 (*almost always true of this student*). Four items were used to assess social aggression. Three social aggression items were similar to the relational aggression items on the original CSBS-T: (a) "ignores people or stops talking to them when he/she is mad at them", (b) "gossips or spreads rumors about people to make other students not like them", and (c) "tries to turn others against someone for revenge or exclusion." An additional item, "gives others dirty looks, rolls his/her eyes, or uses other gestures to hurt others' feelings, embarrass them, or make them feel left out", was added to the modified version of the CSBS-T, which was not included in the original CSBS-T. As is the case for the original CSBS-T (Crick, 1996), four items were used to assess physical aggression: "hits or pushes others", "initiates or gets into physical fights with peers", "threatens others", and "tries to dominate or bully other students." The social aggression and physical aggression subscales are internally consistent; for this sample, Cronbach's alpha was .75 and .92, respectively. For this sample, physical and social aggression scores on the modified version CSBS-T positively correlate with measures of internalizing symptoms and rule-breaking (Underwood, Beron, & Rosen, 2010).

Teacher Ratings of Popularity—Teachers provided ratings of target children's popularity using a 5-point Likert scale with higher ratings indicating greater popularity. Teachers read the statement, "this student is popular with other students", and then indicated how true it was of the child on a scale with 1 (*never true of this student*) to 5 (*almost always true of this student*). Previous studies have also relied on a single teacher item to assess social popularity (Matson et al., 1983; Sandstrom & Schanberg, 2004).

Analytic Plan

We first examined descriptive statistics and correlations. In line with Aiken and West's recommendations (1991; Dearing & Hamilton, 2006; Fairchild & Mackinnon, 2009), we conducted hierarchical multiple regressions to determine whether there was an interaction between facial attractiveness and aggression in the prediction of popularity. Social aggression and physical aggression were examined in separate analyses.

Results

The means, standard deviations, and correlations among variables are presented in Table 1. Hierarchical regressions were conducted to test the hypothesized moderating role of facial

attractiveness on the relation between aggression and popularity. The assumptions of multiple regression (i.e., independence of residuals, normality of residuals, linearity, and homoscedasticity) were met for these analyses. Although students were nested within schools, we found the ICC to be 0, which indicated that we would be able to obtain unbiased estimates from ordinary least squares regression. Preliminary analyses indicated no significant main effects or interactions involving gender (see Table 2), and thus we excluded gender from subsequent analyses. Facial attractiveness and aggression were centered prior to regression analyses. We centered variables following guidelines established by Aiken and West (1991), subtracting the mean of the variable from each datum such that the means of the new, centered variables were zero.

For social aggression, we entered social aggression and facial attractiveness in the first step of the regression analyses. The interaction between social aggression and facial attractiveness was entered in the second step. Table 3 presents the results of the regression. The difference in the R^2 that was found was the result of the inclusion of the interaction term, which was significant.

Facial attractiveness interacted with social aggression in predicting perceived popularity. Following recommendations from Aiken and West (1991) we graphed the interaction by calculating predicted values of popularity at high and low values of attractiveness and social aggression (± 1 SD; see Figure 1). We examined the predicted values of popularity for youth high on social aggression ($+1$ SD); for those also high on facial attractiveness ($+1$ SD) the predicted value of popularity was 3.75, which was 21.8% higher than the predicted value of popularity for those low on facial attractiveness (-1 SD), which was 3.08. To determine whether these values were statistically distinguishable we constructed the 95 percent forecast interval for each value using the standard error of prediction. The standard error of prediction, which is different from the standard error of the coefficient, is useful in constructing a prediction around a mean (regression) prediction. It has an interval that varies with the variation around the regression line (a wider interval exists with more variation), with the location of the independent variable relative to the mean (a more narrow interval is generally found closer to the mean), and with sample size (an increased sample size reduces the width). The intervals did not overlap, providing evidence of their being statistically different, though it is not a formal significance test. Social aggression was associated with a reduction in popularity for adolescents low on facial attractiveness. Conversely, popularity did not decrease as a function of social aggression for adolescents high on facial attractiveness.

We conducted parallel analyses for physical aggression (see Table 3). We entered physical aggression and facial attractiveness in the first step and their interaction in the second step. The difference in the R^2 that was found was the result of the inclusion of the interaction term, which was significant.

As was the case for social aggression, the interaction between physical aggression and facial attractiveness was significant (see Figure 2). We examined the predicted values of popularity for youth high on physical aggression ($+1$ SD); for those also high on facial attractiveness ($+1$ SD) the predicted value of popularity was 3.84, which was 23.5% higher than the predicted value of popularity for those low on facial attractiveness (-1 SD), which was 3.11. To determine whether these values were statistically distinguishable we constructed the 95 percent forecast interval for each value using the standard error of prediction as described previously. The intervals did not overlap, providing evidence of their being statistically different, though it is not a formal significance test. Physical aggression was associated with a reduction in popularity for adolescents low on facial attractiveness but a slight increase in popularity for adolescents high on facial attractiveness.

Discussion

The current study examined facial attractiveness as a moderator of the relation between aggression and popularity. This work was guided by two main research questions: (1) does facial attractiveness moderate the relation between social aggression and popularity? and (2) does facial attractiveness moderate the relation between physical aggression and popularity? Results supported the predictions that facial attractiveness moderates the relation between social aggression and popularity and the relation between physical aggression and popularity. For adolescents rated low on facial attractiveness, social and physical aggression was associated with lower popularity. Conversely, for those adolescents rated as attractive, a similar decrease in popularity was not observed. These findings regarding the moderating role of facial attractiveness on the relation between aggression and social status help explain why some aggressors are popular while others are not.

We did not find any significant effects or interactions involving gender. Although boys are more physically aggressive than girls (Dodge et al., 2006), facial attractiveness moderated the relation between physical aggression and popularity for both boys and girls. Likewise, facial attractiveness moderated the relation between social aggression and popularity for both boys and girls. That facial attractiveness served a protective function for the social status of both boys and girls is not surprising given that meta-analytic results suggest that attractiveness is just as important for males as females (Langlois et al., 2000). Males and females rated as attractive are often judged more favorably and treated more positively than are males and females rated as unattractive (Langlois et al., 2000).

Prior studies have examined attractiveness as part of a composite variable of a larger set of positive qualities (e.g., Rodkin et al., 2000; Vaillancourt & Hymel, 2006). Although this work provides much valuable information, it does not disentangle the role of different peer-valued traits. The current study extends previous findings by examining the unique effects of facial attractiveness on the relation between aggression and popularity. Further, whereas past studies have relied on teacher and peer assessments of attractiveness, the current study examines facial attractiveness as assessed by independent raters. The findings of the current study build on past work to demonstrate that facial attractiveness separate from other positive characteristics serves a protective function in children's peer relations. However, it is important to keep in mind that social aggression, facial attractiveness, and the interaction between these two variables only accounted for 10% of the variance in popularity. Similarly, when examining physical aggression, the model accounted for 11% of the variance in popularity.

One hypothesis for these findings is that adolescents with facial attractiveness may be able to maintain a high social status despite behaving aggressively because such negative behavior is incongruent with the beauty-is-good stereotype, and thus presents a cognitive inconsistency for their peers as suggested by Dion (1972). Adults, adolescents, and even young children attribute positive characteristics to attractive individuals and negative characteristics to unattractive individuals (Langlois et al., 2000). In attempting to resolve this cognitive inconsistency, adolescents may be more likely to attribute such behavior to environmental variables such as a bad mood rather than to stable dispositions, and in turn, evaluate an aggressor with facial attractiveness more leniently, helping to preserve his or her social status.

A second hypothesis for these findings is suggested by the work of Vaillancourt and Hymel (2006) that differentiated between the use of explicit and implicit power. Youth who use explicit power such as aggression may be disliked by peers. Some children and adolescents have implicit power that results from acknowledgment of competency by peers. Vaillancourt and Hymel (2006) looked at numerous peer-valued characteristics as sources of implicit power,

including attractiveness. Possessing peer-valued characteristics (e.g., attractiveness) may protect the social status of aggressive youth.

Results must be interpreted in light of the methodological limitations of this study. We relied on teacher ratings of popularity and aggression. The participating school district did not allow the collection of sociometric ratings as a result of some parental concerns; similar parental apprehensions regarding sociometric research have been noted in the literature (e.g., Hymel, Vaillancourt, McDougall, & Renshaw, 2002; Landau & Milich, 1990). Peers may have offered an insider perspective into the social world of adolescents (Hymel et al., 2002). Still, there is a positive correspondence between teacher and peer ratings of social behaviors (e.g., Crick, 1996; Landau & Milich, 1990). Further, researchers have called for replication of studies examining the relations between aggression, popularity, and positive qualities with measures besides peer reports, such as teacher ratings (see Vaillancourt & Hymel, 2006).

Another weakness of the current study is that factors other than those we examined may have accounted for the finding that some aggressive children are also popular. Social context, other behaviors, and additional qualities (e.g., humor, athleticism) likely also help to buffer against the negative effects of aggression (Coie & Dodge, 1998; Wright, Giammarino, & Parad, 1986). Further, by choosing to isolate attractiveness to one variable, facial attractiveness, we did not explore how other appearance-based factors, such as weight, might moderate the relationship between aggression and popularity.

Further, our study was limited by the sampling procedures and measures we employed. We drew our participants from a large, suburban school district. Our initial consent rate for this longitudinal study that included yearly visits to our campus laboratory with a parent and a best friend was only 55%. Even though this rate is commensurate with other investigations (Betan et al., 1995; Sifers et al., 2002), it is possible that some of the most aggressive children were not included in our sample. In addition, of the students participating in the larger longitudinal study, we found the group with pictures to be less socially aggressive than the group of students that had not been photographed. Still, that the hypothesized relations between facial attractiveness, aggression, and popularity emerged suggests that these relations may be robust. We are also limited by the measures used in this study. Our measure of popularity was based on one item; however, other studies have successfully relied on a single teacher item to assess social popularity (Matson et al., 1983; Sandstrom & Schanberg, 2004). There may also be limitations associated with our measures of facial attractiveness and aggression due to restriction of range, which may have affected the results. However, there was still variability in ratings of facial attractiveness and aggression. Our assessment of facial attractiveness is also limited in that the undergraduate raters did not represent the seventh graders ethnically; however, there appears to be wide cross-cultural agreement in ratings of attractiveness. A recent meta-analysis found cross-cultural agreement to be high ($r = .94$; Langlois et al., 2000).

Given these limitations, there are potential alternative explanations for our findings. Another positive characteristic may be associated with facial attractiveness and be driving these results. For instance, individuals high on facial attractiveness might also excel at athletics or have a good sense of humor, and these unstudied characteristics could partially account for our findings. More research is needed to examine other factors that also influence popularity (e.g., athletic ability, sense of humor), which were not examined in this study. Inclusion of these other factors may render facial attractiveness a weaker predictor of social status.

Future research is needed to better understand the relations between facial attractiveness, aggression, and popularity. Results should be replicated with a larger, more representative sample using different methods for assessing aggression and popularity. Specifically, replication is needed using sociometric nominations for popularity and aggression, which may

be more ecologically valid measures. Results should also be replicated using different means of assessing facial attractiveness such as teacher ratings and ratings by unknown peers. Further work is needed to examine whether under certain circumstances attractive individuals may be evaluated more harshly for their transgressions potentially as a result of envy. Longitudinal research would help determine if facial attractiveness moderates the relationship between aggression and popularity at other important developmental stages (e.g., early childhood, later adolescence), and whether gender differences would be found at these different developmental periods. Research should also address whether facial attractiveness buffers against the effects of other negative characteristics that could adversely influence an adolescent's social standing (e.g., immature behavior, attention-seeking). In addition, further work should examine if facial attractiveness serves a similar protective role in other domains such as work and academics.

The current study enhances our understanding of why some aggressors are perceived as unpopular while other aggressors have high social status. Our findings suggest that aggressors with facial attractiveness suffer fewer negative consequences to their social standing, thus contributing to higher overall rates of aggression within the school environment. Identifying youth who are both popular and aggressive is important because these children may be able to influence school norms given their prominent position in the peer ecology (Rodkin & Hodges, 2003). Regardless of popularity or attractiveness, aggressive youth would likely benefit from appropriate interventions. The implementation of multi-tiered intervention services that include training on and reinforcement of prosocial behaviors may help to reduce school-wide levels of aggression (Sandomierski, Kincaid, & Algozzine, 2008; Sugai & Horner, 2006).

Acknowledgments

This research was supported by NIMH grants R01 MH63076 and K02 MH073616. We are deeply grateful for the participation of children and families in this study and for the cooperation of a local school system that wishes to go unnamed. We thank Kurt Beron for assistance with analyses, and Joanna Gentsch, Ahrareh Rahdar, and Michelle Wharton for assistance with data collection.

References

- Aiken, LS.; West, SG. Multiple Regression: Testing and Interpreting Interactions. Thousand Oaks, CA: Sage; 1991.
- Archer J. Sex differences in aggression in real-world settings: A meta-analytic review. *Review of General Psychology* 2004;8:291–322.
- Archer J, Coyne SM. An integrated review of indirect, relational, and social aggression. *Personality and Social Psychology Review* 2005;9:212–230. [PubMed: 16083361]
- Berkowitz L, Frodi A. Reactions to a child's mistakes as affected by her/his looks and speech. *Social Psychology Quarterly* 1979;42:420–425.
- Betan EJ, Roberts MC, McCluskey-Fawcett K. Rates of participation for clinical child and pediatric psychology research: Issues in methodology. *Journal of Clinical Child Psychology* 1995;24:227–235.
- Cairns RB, Cairns BD, Neckerman HJ, Ferguson LL, Garipey J. Growth and aggression: 1. childhood to early adolescence. *Developmental Psychology* 1989;25:320–330.
- Card NA, Stucky BD, Sawalani GM, Little TD. Direct and indirect aggression during childhood and adolescence: A meta-analytic review of gender differences, intercorrelations, and relations to maladjustment. *Child Development* 2008;79:1185–1229. [PubMed: 18826521]
- Cillessen AHN, Mayeux L. From censure to reinforcement: Developmental changes in the association between aggression and social status. *Child Development* 2004;75:147–163. [PubMed: 15015681]
- Cillessen AHN, Mayeux L. Expectations and perceptions at school transitions: The role of peer status and aggression. *Journal of School Psychology* 2007;45:567–586.
- Cillessen, AHN.; Terry, RA.; Coie, JD.; Lochman, JD. Unpublished manuscript. Department of Psychology, University of Connecticut; 2002. Accuracy of teacher evaluations of children's sociometric status positions.

- Clifford MM, Walster E. The effect of physical attractiveness on teacher expectations. *Sociology of Education* 1973;46:248–258.
- Cohen, J. *Statistical power analysis for the behavioral sciences*. 2. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988.
- Coie, JD.; Dodge, KA. Aggression and antisocial behavior. In: Eisenberg, N., editor. *Handbook of Child Psychology: Vol 3. Social, emotional, and personality development*. 5. Hoboken, NJ: Wiley; 1998. p. 779–862.
- Coie, JD.; Koeppl, GK. Expanding the framework of intervention with rejected children. In: Asher, SR.; Coie, JD., editors. *Peer Rejection in Childhood*. New York: Cambridge University Press; 1990. p. 309–337.
- Collett BR, Ohan J, Myers K. Ten-year review of rating scales. VI: Scales assessing externalizing behaviors. *Journal of the American Academy of Child & Adolescent Psychiatry* 2003;42:1143–1170. [PubMed: 14560165]
- Cowen EL, Weissberg RP, Guare J. Differentiating attributes of children referred to a school mental health program. *Journal of Abnormal Child Psychology* 1984;12:397–410. [PubMed: 6747119]
- Crick NR. The role of overt aggression, relational aggression, and prosocial behavior in the prediction of children's future social adjustment. *Child Development* 1996;67:2317–2327. [PubMed: 9022243]
- Crick NR. Engagement in gender normative versus nonnormative forms of aggression: Links to social-psychological adjustment. *Developmental Psychology* 1997;33:610–617. [PubMed: 9232376]
- Crick NR, Bigbee MA. Relational and overt forms of peer victimization: A multiinformant approach. *Journal of Consulting and Clinical Psychology* 1998;66:337–347. [PubMed: 9583337]
- Crick NR, Casas JF, Nelson DA. Toward a more comprehensive understanding of peer maltreatment: Studies of relational victimization. *Current Directions in Psychological Science* 2002;11:98–101.
- Crick, NR.; Ostrov, JM.; Kawabata, Y. Social aggression and gender: An overview. In: Flannery, DJ.; Vazsonyi, AT.; Waldman, ID., editors. *Cambridge Handbook of Violent Behavior and Aggression*. NY: Cambridge; 2007. p. 245–259.
- Crowder JR, Hunter LS. Nursing students' perceptions of infant attractiveness. *Journal of Pediatric Nursing* 2004;19:257–266. [PubMed: 15308975]
- Darby BW, Jeffers D. The effects of defendant and juror attractiveness on simulated courtroom trial decisions. *Social Behavior and Personality* 1988;16:39–50.
- Dearing E, Hamilton LC. Contemporary approaches and classic advice for analyzing mediating and moderating variables. *Monographs of the Society for Research in Child Development* 2006;71:88–104.
- DeSantis A, Kayson WA. Defendants' characteristics of attractiveness, race, and sex and sentencing decisions. *Psychological Reports* 1997;81:679–683.
- Dion KK. Physical attractiveness and evaluation of children's transgressions. *Journal of Personality and Social Psychology* 1972;24:207–213. [PubMed: 5081193]
- Dion KK. Young children's stereotyping of facial attractiveness. *Developmental Psychology* 1973;9:183–188.
- Dion KK. Children's physical attractiveness and sex as determinants of adult punitiveness. *Developmental Psychology* 1974;10:772–778.
- Dion KK, Berscheid E, Walster E. What is beautiful is good. *Journal of Personality and Social Psychology* 1972;24:285–290. [PubMed: 4655540]
- Dodge, KA.; Coie, JD.; Lynam, D. Aggression and antisocial behavior in youth. In: Damon, W.; Eisenberg, N., editors. *Handbook of Child Psychology*. Vol. 3. Hoboken, NJ: Wiley; 2006. p. 719–788.
- Eder D. The cycle of popularity: Interpersonal relations among female adolescents. *Sociology of Education* 1985;58:154–165.
- Elovitz GP, Salvia J. Attractiveness as a biasing factor in the judgments of school psychologists. *Journal of School Psychology* 1982;20:339–345.
- Estell DB, Farmer TW, Pearl R, Van Acker R, Rodkin PC. Social status and aggressive and disruptive behavior in girls: Individual, group, and classroom influences. *Journal of School Psychology* 2008;46:193–212. [PubMed: 19083357]

- Fairchild AJ, MacKinnon DP. A general model for testing mediation and moderation effects. *Prevention Science* 2009;10:87–99. [PubMed: 19003535]
- Galen BR, Underwood MK. A developmental investigation of social aggression among children. *Developmental Psychology* 1997;33:589–600. [PubMed: 9232374]
- Griffin AM, Langlois JH. Stereotype directionality and attractiveness stereotyping: Is beauty good or is ugly bad? *Social Cognition* 2006;24:187–206. [PubMed: 17016544]
- Hamermesh DS, Parker A. Beauty in the classroom: Instructors' pulchritude and putative pedagogical productivity. *Economics of Education Review* 2005;24:369–376.
- Henderson JJA, Anglin JM. Facial attractiveness predicts longevity. *Evolution and Human Behavior* 2003;24:351–356.
- Henry DB, Miller-Johnson S, Simon TR, Schoeny ME. Validity of teacher ratings in selecting influential aggressive adolescents for a targeted preventive intervention. *Prevention Science* 2006;7:31–41. [PubMed: 16378226]
- Hunsberger B, Cavanagh B. Physical attractiveness and children's expectations of potential teachers. *Psychology in the Schools* 1988;25:70–74.
- Hymel, S.; Vaillancourt, T.; McDougall, P.; Renshaw, PD. Peer acceptance and rejection in childhood. In: Smith, PK.; Hart, CH., editors. *Blackwell Handbook of Childhood Social Development*. Malden, MA: Blackwell; 2002. p. 265–284.
- Katz, S. The importance of being beautiful. In: Henslin, JM., editor. *Down to Earth Sociology*. New York: Free Press; 2007. p. 341–348.
- Kenealy P, Frude N, Shaw W. Influence of children's physical attractiveness on teacher expectations. *The Journal of Social Psychology* 1988;128:373–383.
- Kleck RE, Richardson SA, Ronald C. Physical appearance cues and interpersonal attraction in children. *Child Development* 1974;45:305–310.
- Lagerspetz KM, Bjorkqvist K, Peltonen T. Is indirect aggression typical of females? Gender differences in aggressiveness in 11-to 12-year-old children. *Aggressive Behavior* 1988;14:403–414.
- Landau, S.; Milich, R. Assessment of children's social status and peer relations. In: La Greca, A., editor. *Through the Eyes of the Child*. Needham Heights, MA: Allyn and Bacon; 1990. p. 259–291.
- Langlois JH, Kalakanis L, Rubenstein AJ, Larson A, Hallam M, Smoot M. Maxims or myths of beauty? A meta-analytic and theoretical review. *Psychological Bulletin* 2000;126:390–423. [PubMed: 10825783]
- Langlois JH, Ritter JM, Casey RJ, Sawin DB. Infant attractiveness predicts maternal behaviors and attitudes. *Developmental Psychology* 1995;31:464–472.
- Langlois JH, Roggman LA. Attractive faces are only average. *Psychological Science* 1990;1:115–121.
- Ledingham JE, Younger A, Schwartzman A, Bergeron G. Agreement among teacher, peer, and self-ratings of children's aggression, withdrawal, and likability. *Journal of Abnormal Child Psychology* 1982;10:363–372. [PubMed: 7175043]
- Lerner RM, Lerner JV. The effects of age, sex, and physical attractiveness on child-peer relations, academic performance, and elementary school adjustment. *Developmental Psychology* 1977;13:585–590.
- Matson JL, Esveldt-Dawson K, Kazdin AE. Validation of methods for assessing social skills in children. *Journal of Clinical Child Psychology* 1983;12:174–180.
- Mazzella R, Feingold A. The effects of physical attractiveness, race, socioeconomic status, and gender of defendants and victims on judgments of mock jurors: A meta-analysis. *Journal of Applied Social Psychology* 1994;24:1315–1344.
- McArthur LZ, Berry DS. Cross-cultural agreement in perceptions of babyfaced adults. *Journal of Cross-Cultural Psychology* 1987;18:165–192.
- McGovern RJ, Neale MC, Kendler KS. The independence of physical attractiveness and symptoms of depression in a female twin population. *The Journal of Psychology* 1996;130:209–219. [PubMed: 8636908]
- Merrell KW, Buchanan R, Tran OK. Relational aggression in children and adolescents: A review with implications for school settings. *Psychology in the Schools* 2006;43:345–360.

- Miller JL, Vaillancourt T. Relation between childhood peer victimization and adult perfectionism: Are victims of indirect aggression more perfectionistic? *Aggressive Behavior* 2007;33:230–241. [PubMed: 17444529]
- Owens L, Shute R, Slee P. 'Guess what I just heard!': Indirect aggression among teenage girls in Australia. *Aggressive Behavior* 2000;26:67–83.
- Pakaslahti L, Keltikangas-Jarvinen L. Comparison of peer, teacher and self-assessments on adolescent direct and indirect aggression. *Educational Psychology* 2000;20:177–190.
- Paquette JA, Underwood MK. Gender differences in young adolescents' experiences of peer victimization: Social and physical aggression. *Merrill-Palmer Quarterly* 1999;45:242–266.
- Patzner, GL. The power and paradox of physical attractiveness. Boca Raton, FL: Brown Walker Press; 2006.
- Pekarik EG, Prinz RJ, Liebert DE, Weintraub S, Neale JM. The Pupil Evaluation Inventory: A sociometric technique for assessing children's social behavior. *Journal of Abnormal Child Psychology* 1976;4:83–97. [PubMed: 773996]
- Putallaz M, Grimes CL, Foster KJ, Kupersmidt JB, Coie JD, Dearing K. Overt and relational aggression and victimization: Multiple perspectives within the school setting. *Journal of School Psychology* 2007;45:523–547. [PubMed: 18836518]
- Ramsey JL, Langlois JH. Effects of the "beauty is good" stereotype on children's information processing. *Journal of Experimental Child Psychology* 2002;81:320–340. [PubMed: 11884093]
- Riniolo TC, Johnson KC, Sherman TR, Misso JA. Hot or not: Do professors perceived as physically attractive receive higher student evaluations? *The Journal of General Psychology* 2006;133:19–35. [PubMed: 16475667]
- Ritts V, Patterson ML, Tubbs ME. Impressions and judgments of physically attractive students: A review. *Review of Educational Research* 1992;62:413–426.
- Rodkin PC, Farmer TW, Pearl R, Van Acker R. Heterogeneity of popular boys: Antisocial and prosocial configurations. *Developmental Psychology* 2000;36:14–24. [PubMed: 10645741]
- Rodkin PC, Farmer TW, Pearl R, Van Acker R. They're cool: Social status and peer group supports for aggressive boys and girls. *Social Development* 2006;15:175–204.
- Rodkin PC, Farmer TW, Van Acker R, Pearl R, Thompson JH, Fedora P. Who do students with mild disabilities nominate as cool in inclusive general education classrooms? *Journal of School Psychology* 2006;44:67–84.
- Rodkin PC, Hodges EVE. Bullies and victims in the peer ecology: Four questions for psychologists and school professionals. *School Psychology Review* 2003;32:384–400.
- Rosen LH, Underwood MK, Beron KB, Gentsch JK, Wharton M, Rahdar E. Persistent versus periodic experiences of social victimization: Predictors of adjustment. *Journal of Abnormal Child Psychology* 2009;37:693–704. [PubMed: 19263212]
- Salvia J, Sheare JB, Algozzine B. Facial attractiveness and personal-social development. *Journal of Abnormal Child Psychology* 1975;3:171–178. [PubMed: 1214029]
- Sandomierski, T.; Kincaid, D.; Algozzine, B. Response to intervention and positive behavior support: Brothers from different mothers or sisters with different misters?. PBIS newsletter. 2008. Retrieved October 20, 2009 from http://pbis.org/pbis_newsletter/volume_4/issue2.aspx
- Sandstrom MJ, Schanberg LE. Brief report: Peer rejection, social behavior, and psychological adjustment in children with juvenile rheumatic disease. *Journal of Pediatric Psychology* 2004;29:29–34. [PubMed: 14747363]
- Sifers SK, Puddy RW, Warren JS, Roberts MC. Reporting of demographics, methodology, and ethical procedures in journals in pediatric and child psychology. *Journal of Pediatric Psychology* 2002;27:19–25. [PubMed: 11726676]
- Stephan CW, Langlois JH. Baby beautiful: Adult attributions of infant competence as a function of infant attractiveness. *Child Development* 1984;55:576–585. [PubMed: 6723448]
- Stewart JE. Defendant's attractiveness as a factor in the outcome of criminal trials: an observational study. *Journal of Applied Social Psychology* 1980;10:348–361.
- Sugai G, Horner RR. A promising approach for expanding and sustaining school-wide positive behavior support. *School Psychology Review* 2006;35:245–259.

- Swearer SM. Relational aggression: Not just a female issue. *Journal of School Psychology* 2008;46:611–616. [PubMed: 19083375]
- Texas Education Agency. Enrollment by gender and ethnicity. 2009a. Retrieved October 20, 2009, from <http://www.tea.state.tx.us/>
- Texas Education Agency. Snapshot 2008 district detail. 2009b. Retrieved October 20, 2009, from <http://ritter.tea.state.tx.us/perfreport/snapshot/2008/district.srch.html>
- Underwood, MK. Social aggression among girls. New York: Guilford; 2003.
- Underwood MK. Glares of contempt, eye rolls of disgust, and turning away to exclude: Understanding nonverbal forms of social aggression among girls. *Feminism and Psychology* 2004;14:371–375.
- Underwood MK, Beron KJ, Rosen LH. Continuity and change in social and physical aggression from middle childhood through early adolescence. *Aggressive Behavior* 2009;35:357–375. [PubMed: 19685551]
- Underwood, MK.; Beron, KB.; Rosen, LH. Joint trajectories for social and physical aggression as predictors of adolescent maladjustment: Internalizing symptoms, rule-breaking behaviors, and borderline and narcissistic personality features. 2010. Manuscript submitted for publication
- Underwood, MK.; Coie, JD. Future directions and priorities for prevention and intervention. In: Putallaz, M.; Bierman, KL., editors. *Aggression, Antisocial Behavior, and Violence among Girls: A Developmental Perspective*. NY, NY: Guilford; 2004. p. 289-301.
- Underwood MK, Rosen LH. Gender, peer relations, and challenges for girlfriends and boyfriends coming together in adolescence. *Psychology of Women Quarterly* 2009;33:16–20. [PubMed: 20119476]
- United States Census Bureau. U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, 2000 Census of Population and Housing. 2000. Retrieved August 23, 2006, from <http://quickfacts.census.gov/qfd/states/48/48113.html>
- Vaillancourt T, Hymel S. Aggression and social status: The moderating roles of sex and peer-valued characteristics. *Aggressive Behavior* 2006;32:396–408.
- Vaughn BE, Langlois JH. Physical attractiveness as a correlate of peer status and social competence in preschool children. *Developmental Psychology* 1983;19:561–567.
- Wright JC, Giammarino M, Parad HW. Social status in small groups: Individual-group similarity and the social “misfit. *Journal of Personality and Social Psychology* 1986;50:523–536.
- Xie H, Cairns RB, Cairns BD. Social networks and configurations in inner-city schools: Aggression, popularity, and implications for students with EBD. *Journal of Emotional and Behavioral Disorders* 1999;7:147–155.
- Xie H, Li Y, Boucher SM, Hutchins BC, Cairns BD. What makes a girl (or a boy) popular (or unpopular)? African American children’s perceptions and developmental differences. (2006). *Developmental Psychology* 2006;42:599–612. [PubMed: 16802894]

Figure 1.
Facial attractiveness as a moderator of the relation between social aggression and popularity.

Figure 2. Facial attractiveness as a moderator of the relation between physical aggression and popularity.

Table 1

Descriptive Statistics and Correlations

	Social Aggression	Physical Aggression	Attractiveness	Popularity	<i>M</i>	<i>SD</i>
Social Aggression	--	.74**	-.12	-.21*	1.72	.71
Physical Aggression		--	-.13	-.22**	1.36	.75
Attractiveness			--	.18*	2.40	.53
Popularity				--	3.57	1.02

**
 $p < .01$ level

*
 $p < .05$

Table 2

Effects of Gender and Gender Interactions

Predictor	Social Aggression				Physical Aggression			
	<i>R</i> ²	ΔR^2	<i>B</i>	<i>SE B</i>	<i>R</i> ²	ΔR^2	<i>B</i>	<i>SE B</i>
Step 1	.08	.08*			.08	.08*		
Aggression			-.27*	.12			-.25*	.11
Attractiveness			.30	.16			.29	.16
Male			-.18	.17			-.13	.17
Step 2	.12	.04			.13	.05*		
Aggression			-.20	.17			-.27	.19
Attractiveness			.13	.20			.19	.20
Male			-.16	.17			-.10	.17
Aggression $\times$ Attractiveness			.44*	.21			.54*	.21
Attractiveness $\times$ Male			.35	.33			.29	.33
Aggression $\times$ Male			-.07	.24			.24	.25
Step 3	.12	.00			.13	.00		
Aggression			-.20	.17			-.28	.19
Attractiveness			.13	.20			.20	.20
Male			-.16	.17			-.11	.17
Aggression $\times$ Attractiveness			.51	.28			.63*	.28
Attractiveness $\times$ Male			.37	.33			.29	.33
Aggression $\times$ Male			-.08	.24			.20	.26
Aggression $\times$ Attractiveness $\times$ Male			-.16	.42			-.22	.43

*
p < .05

Table 3

Relations between Aggression and Popularity

Predictor	Social Aggression				Physical Aggression			
	R^2	ΔR^2	B	$SE\ B$	R^2	ΔR^2	B	$SE\ B$
Step 1	.07	.07**			.07	.07**		
Aggression			-.27*	.12			-.27*	.11
Attractiveness			.30	.16			.30	.16
Step 2	.10	.04*			.11	.04*		
Aggression			-.25*	.12			-.16	.12
Attractiveness			.28	.16			.29	.16
Aggression $\times$ Attractiveness			.48*	.21			.51*	.20

*
 $p < .05$