Psychological Assessment

Validation of the Ostracism Experience Scale for Adolescents

Rich Gilman, Adrienne Carter-Sowell, C. Nathan DeWall, Ryan E. Adams, and Inga Carboni
Online First Publication, December 3, 2012. doi: 10.1037/a0030913

Psychological Assessment

1040-3590/12/$12.00 DOI: 10.1037/a0030913

Validation of the Ostracism Experience Scale for Adolescents

Rich Gilman
Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Adrienne Carter-Sowell
Texas A&M University

C. Nathan DeWall
University of Kentucky

Ryan E. Adams
Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio

Inga Carboni
College of William and Mary

This study validates a new self-report measure, the Ostracism Experience Scale for Adolescents (OES–A). Nineteen items were tested on a sample of 876 high school seniors to assess 2 of the most common ostracism experiences: being actively excluded from the peer group and being largely ignored by others. Exploratory and confirmatory factor analyses, bivariate correlations, and hierarchical regression provided support for the construct validity of the measure. The findings provided psychometric support for the OES–A, which could be used in research into the nature and correlates of social ostracism among older adolescents when a brief self-report measure is needed. Further, the OES–A may help determine how social ostracism subtypes differentially predict health-compromising behaviors later in development, as well as factors that protect against the most pernicious effects of ostracism.

Keywords: ostracism, adolescents, validation, measurement

The desire to form and maintain relationships is so powerful that basic neurological and psychological systems constantly monitor against the threat of social ostracism (Eisenberger & Lieberman, 2005). Ostracism,[1] defined here as being ignored or excluded by others (Williams, 2007), thwarts a fundamental need for social relationships, thereby striking at the core of optimal human development (Baumeister & Leary, 1995; Blackhart, Nelson, Knowles, & Baumeister, 2009; Lau, Moulds, & Richardson, 2009; Williams, 2009). Research into ostracism has largely focused on young children and adults. Rarely has the impact of the experience been examined among older (i.e., high school) adolescents. Using a large sample and a methodology that combines self- and peer-reports, we provide evidence to support the psychometric properties of a new self-report ostracism scale for this age group.

Social Ostracism and Adolescent Development

From a normative developmental perspective, social relationships provide opportunities for youth to understand multiple perspectives and social norms, both of which are necessary to develop intrapersonal and social competencies (Furman & Buhrmester, 2009; Ladd, 2006; Laursen & Hafen, 2010; Rubin, Chen, McDougall, Bowker, & McKinnon, 1995). Among older adolescents, peers play an especially important role in facilitating competencies that (a) enhance academic motivation during high school and beyond (Bong, 2001; Gilman & Anderman, 2006), (b) provide a foundation from which adolescents explore posthigh school identities (Wentzel, 2005), and (c) help establish successful future career goals (Roseth, Johnson, & Johnson, 2008). The importance of social relationships among older adolescents is underscored by examining those who lack them. In comparison to adolescents who report adequate relationships with others, ostracized adolescents report significant and positive associations with depression, loneliness, and a sense of inadequacy (Witvliet, Brendgen, Van Lier, Koot, & Vitaro, 2010), and the experience is significantly associated with (although distinct from) other negative peer social experiences, such as peer victimization (Buhs, Ladd, & Herald-Brown, 2006; Dixon, 2007). Other studies have shown that being ostracized can lead to a variety of maladaptive outcomes such as aggression (Leary, Kowalski, Smith, & Phillips, 2003) and poor emotion regulation (Sebastian, Viding, Williams, & Blakemore, 2010). Recent studies also have reported that the deleterious effects of ostracism on psychological and social functioning are not uniform across developmental levels but appear more pronounced among older adolescents than either young children or adults (e.g.,

Rich Gilman, Division of Developmental and Behavioral Pediatrics, Cincinnati Children's Hospital Medical Center, Cincinnati, Ohio; Adrienne Carter-Sowell, Department of Psychology and Africana Studies, Texas A&M University; C. Nathan DeWall, Department of Psychology, University of Kentucky; Ryan E. Adams, Division of Developmental and Behavioral Pediatrics, Cincinnati Children's Hospital Medical Center; Inga Carboni, Mason School of Business, College of William and Mary.

Correspondence concerning this article should be addressed to Rich Gilman, Division of Developmental and Behavioral Pediatrics, Cincinnati Children's Hospital Medical Center, 3430 Burnet Ave., MLC 4002, Cincinnati, OH 45229. E-mail: richard.gilman@cchmc.org

[1] Given the rich tradition of research in this area, a number of labels have been used to characterize youth who are not accepted by their peers. Given that little research has empirically distinguished these terms, we chose *ostracism* as a superordinate term.

Pharo, Gross, Richardson, & Hayne, 2011). Collectively, these findings suggest that ostracism deprives an older adolescent, in particular, of important psychological and social resources necessary for optimal development.

Measuring Ostracism in General and Potential Limitations to Older Adolescent Samples

Studies investigating social ostracism have largely evolved from independent lines of research within developmental and social psychology, which have led to different methods of identification. Within developmental psychology, sociometric methods have been commonly used to differentiate socially accepted versus unaccepted children (see Cillessen, 2009, for a recent overview). Although methods vary (e.g., Asher & Dodge, 1986; Maassen & Verschueren, 2005; Newcomb, Bukowski, & Pattee, 1993; Peery, 1979; Terry & Coie, 1991; Zettergren, 2007), in most, the participants within a reference group (typically classrooms) are asked to rate each other on a dimension of social status (e.g., popularity) or reputation. In contrast to sociometric methods, social psychologists often focus on understanding the immediate, phenomenological experience of *being* ostracized, which is often induced under controlled, experimental conditions (e.g., see Blackhart et al., 2009). Although commonly applied to adults, these experimental methods have recently extended to adolescent samples (e.g., Salvy et al., 2011, Sebastian et al., 2010, 2011).

Limitations inherent in each of these methods can preclude their widescale application to older adolescents. For example, individuals interested in collecting sociometric data may face ethical concerns voiced by schools, parents, and review boards, as well the increased burden of time and resources necessary to secure and code the data (Mayeux, Bellmore, & Cillessen, 2007). Although these concerns have been expressed regardless of age group (Cillessen, 2009), they have been particularly noted at the older adolescent level (Bellmore, Jiang, & Juvonen, 2010). Moreover, gathering peer ratings about who is and who is not socially accepted assumes that both peers and the targeted individual share the same perceptions. There have been a number of studies to indicate that subjective self- and peer-evaluations (or meta-accuracy) on perceived social acceptance have reported moderate levels of agreement at best (Bellmore & Cillessen, 2003; Sandstrom & Bartini, 2010; Zakriski & Coie, 1996). Relatively low meta-accuracy may be found when asking older adolescents about their social relationships, as their reliance on social affiliations to navigate through key milestones (e.g., seeking and selecting a romantic partner, establishing postgraduation goals) may make them less willing to disclose potentially sensitive information or display behaviors that would threaten their social standing (Sippola, Buchanan, & Kehoe, 2007). Thus, sole reliance on sociometric data may lead researchers to overlook adolescents who would be perceived as socially accepted by peers, but who nonetheless would self-report feelings of being ostracized (Park, Killen, Crystal, & Watanabe, 2003). Limitations specific to social psychology methods include potential practical and ethical concerns of experimentally inducing ostracism among minors. Further, such methods may have limited external validity given that they disregard the larger social contexts in which ostracism is established and maintained.

Self-reported measures of social ostracism may thus be beneficial for a number of reasons. First, self-report measures can serve as a useful complement to existing methods. As ostracism is by nature a construct that comprises both social and self-perceptions (Mauss et al., 2011), combining self-reports with peer ratings would allow researchers to ascertain the meta-accuracy of the complete phenomenology of social ostracism. Further, the inclusion of ostracism self-reports would enhance the external validity of experimental methods by comparing the effects of short-term, induced ostracism with the individual's own perceptions of real-life ostracism experiences. Second, self-report ostracism measures can serve as a stand-alone method on occasions when other methods (e.g., sociometric ratings) are contraindicated (which can often be the case when conducting school-based research). Finally, self-report ostracism could serve as a necessary measurement component when investigating other related social phenomena. As one example, peer aggression is by nature a social construct (Mishna, 2012), and studies investigating different forms of aggression (verbal, relational) document a number of negative developmental outcomes associated with these experiences (Buhs et al., 2010; Crick, Murray-Close, Marks, & Mohajeri-Nelson, 2009; Dixon, 2007; Fox & Bouton, 2006; Marsee et al., 2011; Parault, Davis, & Pellegrini, 2007). There is evidence to indicate that such perceptions may vary depending on whether the adolescent is an instigator of or a target of aggression. For example, some studies have shown that highly aggressive adolescents tend to misinterpret social cues and overestimate their social standing (Rose, Swenson, & Waller, 2004). Other studies report that being a recipient of aggression is correlated with poor peer acceptance and higher levels of loneliness (Epkins & Heckler, 2011). Nevertheless, in the absence of measures to directly assess self-reported ostracism, how these aggression experiences correspond to perceptions of being ignored or excluded by others is unknown.

In spite of the potential advantages, to our knowledge there is no published measure to assess self-reported ostracism among general (i.e., nonclinical) adolescent samples. For example, in a recent review of 192 studies on social ostracism, Blackhart et al. (2009) identified 11 studies that have explored the effects of ostracism and various outcomes in adolescents. Of these studies, none used a validated self-report instrument of ostracism. The current investigation seeks to fill this gap in the literature.

The Present Study

The current study examined the psychometric properties of the Ostracism Experience Scale for Adolescents (OES–A), which was designed to assess two ostracism subtypes often identified in sociometric studies. The first subgroup, often referred to as *socially rejected* (i.e., excluded), often consists of youth who display overt and largely inappropriate behaviors (e.g., physical or verbal aggression, behavioral disruption, gossip spreading) that lead them to be actively excluded by their peers (Crick et al., 2009). Conversely, those referred to as *socially neglected* (i.e., ignored) do not display the types of behaviors that elicit active exclusion; for various reasons such as displaying state specific anxiety or lacking appropriate social skills, these youth are simply overlooked by peers (Deater-Deckard, 2001; Newcomb et al., 1993; Rubin & Coplan, 2004; Rubin, Coplan, & Bowker, 2009).

The OES–A was administered to over 800 high school seniors across several schools. In addition to the large sample size, our study had a number of other strengths. First, we used both self- and peer-rating methods as a time-honored approach to establish evidence of construct and convergent validity (Campbell & Fiske, 1959; Connelly & Ones, 2010). We also included social network variables as an additional, innovative method to establish convergent validity (see Clifton, Turkheimer, & Ortenns, 2007). Second, in addition to analyzing specific behaviors that have been associated with various forms of ostracism in younger children (e.g., peer-reported disruption), we examined the relationship of each OES–A subtype and (a) self-reported aggression and (b) self- and peer-reported victimization to garner additional support for the scale's convergent validity. Third, we included physical appearance and having a disability as variables to assess convergent validity. It is to be noted that although each variable is a presumed correlate with social ostracism, only a handful of studies have directly examined these relationships (e.g., Honey, Emmerson, & Llewellyn, 2011; Magin, Adams, Heading, Pond, & Smith, 2008). Thus, our study potentially extends the known literature to include other contributory, putative factors associated with social ostracism. Finally, although social ostracism has been significantly related to a number of maladaptive outcomes, knowledge of the positive underpinnings of peer relationships has only recently begun (Oberle, Schonert-Reichl, & Thomson, 2010; Wentzel, Baker, & Russell, 2009). Our study incorporated maladaptive *and* adaptive measures as a means to evaluate the extent to which ostracism detracts from optimal human potential.

Hypotheses

Hypothesis 1: The OES–A will provide initial support for a two-correlated factor model, with items distinctly loading on either the Exclusion or Ignore domain scale.

Hypothesis 2: Evidence for the measure's convergent validity will be found via significant but different associations between the OES–A scales and various self- and peer-reports. Specifically, overt behaviors (e.g., self-reported peer aggression, social disruption) would correlate to a higher degree with the Exclusion Scale than the Ignore Scale. Conversely, covert behaviors (social anxiety) would yield higher correlations with the Ignore Scale.

Hypothesis 3: Each OES–A scale will yield significant but inverse predictive relationships with psychological distress (depression) and well-being (global life satisfaction), after similar self- and peer-reported correlates have been controlled.

Other variables in the study were also expected to be significant with each OES–A scale, such as social network variables (the number of nominations given to and received from peers), physical appearance, and disability status. However, because this was the first study to examine these variables within the context of self-reported ostracism, no a priori hypotheses were made.

Method

Participants

Participants were 876 seniors from three high schools located in separate school districts in one southeastern state. Ninety-eight percent of the respondents were between the ages of 17 and 18 (mean age = 17.65 years). School 1 was located in an urban setting, with a total senior class enrollment of 336 students (participation rate = 80%). School 2 was located in a suburban setting, with a total enrollment of 350 senior students (participation rate = 83%). School 3 was located in a rural setting, with an enrollment of 190 seniors (participation rate = 84%). Females comprised 52% of the sample. The total sample had 707 White adolescents (81%), with the remainder being African American (11%), Hispanic American (3%), Asian American (4%) and "other" (1%). The demographics of the study sample did not differ significantly from nonparticipants. Twenty-eight percent of the sample reported being eligible for free/reduced school lunch status, which is an indicator of low socioeconomic status (SES). The obtained percentage is in keeping with the most recent statistics of youth living in low-income families (Annie E. Casey Foundation, 2009). The data reported herein were granted approval by the first author's institutional review board and collected in 2010.

Measures

The Ostracism Experience Scale for Adolescents (OES–A). This scale is a 19-item, self-report measure designed to assess an individual's perceptions of being ignored by or excluded from the social group. The scale items represent general perceptions of being ostracized and are not specific to any one source (i.e., a particular friend, romantic partner, relative, and so on). All items begin with the stem "In general, others . . ." followed by wording that reflects each ostracism subtype. The response to each item is made on a 5-point rating scale (1 = *never*, 5 = *always*). Scale scoring was such that higher scores reflected higher levels of perceived ostracism.

Behavioral Assessment System for Children, 2nd Edition, Self-Report (BASC–2–SRP; Reynolds & Kamphaus, 2004). The BASC–2–SRP is a 180-item scale, suitable for ages 2 through 25, that assesses adaptive and maladaptive psychological and behavioral functioning. Our study used the protocol for ages 12–18. The BASC–2–SRP Depression (α = .89), Social Stress (α = .89), and (external) Locus of Control (α = .81) were used as indicators of psychological distress. In addition, three items from the BASC–2–SRP Self-Esteem Scale were used to assess self-reported personal appearance ("I like the way I look," "I get upset about my looks," and "My looks bother me"; α = .85). Negatively keyed items were reversed scored so that higher scores indicate more favorable levels of perceived appearance. All questions on the BASC–2–SRP are reported as either true or false, or on a 4-point scale (1 = *never*, 2 = *sometimes*, 3 = *often*, and 4 = *almost always*), with higher domain scores reflecting higher levels of the targeted construct. The BASC–2 manual reports adequate internal consistency and solid evidence for the construct validity of each scale (see Reynolds & Kamphaus, 2004).

Student's Life Satisfaction Scale (SLSS; Huebner, 1991). The SLSS was used to assess global satisfaction (i.e., satisfaction

without reference to any specific life domain). Students respond to seven items on a 6-point rating scale (1 = *strongly disagree*, 6 = *strongly agree*). Scoring of the scale consists of adding the items and dividing them by the total number. Negatively worded items are reverse scored, so that higher scores indicate higher global satisfaction. Studies of the SLSS consistently reveal solid evidence of construct validity (Gilman, Huebner, & Laughlin, 2000), as well as convergent and discriminant validity (e.g., Rice, Ashby, & Gilman, 2011). The internal consistency of the SLSS in this study was .86.

Self-reported victimization. A definition adopted from Olweus (1993) was first provided to each participant to create a common consensus of what constituted *bullying*. Participants were then asked one yes/no question: "Have you ever been bullied since you have been in high school?" A total of 287 students replied in the affirmative (136 males and 151 females), who were then asked to endorse the frequency that they were bullied by answering questions beginning with the stem "How often do peers . . .." Six questions were presented, each representing three specific domains: verbal ("tease or make fun of you?"; "call you names to hurt your feelings"), physical ("hit or push you?'; "punch or kick you?"), and indirect/relational ("gossip or say mean things about you when you are not around?"; "hurt your feelings by excluding you?"). Responses to items were made on a 5-point rating scale (1 = *never*, 2 = *less than one time per month*, 3 = *1–2 times per month*, 4 = *1–2 times a week*, 5 = *almost every day*). The items were combined to form a single score for each of the three bullying subtypes (α = .88 for verbal, α = .96 for physical, and α = .87 for indirect/relational). Over 85% of the respondents reported that they were bullied across more than one subtype. There were no statistically significant differences with respect to gender and any of the bullying subtypes ($p > .05$ for all analyses). Analyses of skewness and kurtosis for all respondents revealed no significant departure from normality (skewness = 1.32, kurtosis = 2.35 for physical; skewness = .87, kurtosis = –.98 for indirect/relational; skewness = .81, kurtosis = .18 for verbal). Distribution of scores based on gender closely matched the overall results, with the exception of a slightly higher kurtosis estimate for males on the physical subtype (kurtosis = 5.36). Although the bullying subtypes yielded high internal consistency, the correlations between subtypes were quite high (*r*s ranged from .81 for physical and indirect/relational to .91 for verbal and indirect/relational), which is consistent with other studies (e.g., Marsh et al., 2011; Turner, Finkelhor, & Ormrod, 2010). We also were not aware of any studies in the adolescent literature that have established one form of bullying as more damaging than another. Thus, we decided to combine all items to form a total victimization score based on all respondents who replied in the affirmative (α = .94).

Self-reported aggression. All respondents were asked to respond (applying the same definition of bullying) to one yes/no question: "Have you ever participated in bullying since you have been in high school?" Two hundred eleven students reported in the affirmative (112 males and 99 females). Follow-up questions were asked to determine the extent to which they bullied across the same three domains. The stem used on the peer-reported victimization items was slightly revised (e.g., "How often have *you* . . . called peers' names to hurt their feelings? . . . hit or pushed peers? . . . gossiped or said mean things about peers when they are not around?"). All rating options were identical to the self-reported victimization scale. Combined items yielded high internal consistency estimates for all three subtypes (α = .97 for physical aggression, α = .97 for indirect/relational aggression, and α = .90 for verbal aggression). Over 95% of the respondents reported that they bullied across more than one subtype. As with the self-reported victimization subtypes, there were no statistically significant gender differences on any of the bullied subtypes ($p > .05$). Correlations were r = .22 (physical aggression and verbal aggression), r = .67 (physical aggression and relational aggression), and r = .78 (verbal aggression and indirect/relational aggression). Analyses of skew and kurtosis, based on the entire sample, again revealed no significant departure from normal (no values were above 2.50), and these indices were almost identical to those obtained for each gender. Paralleling our rationale for self-reported victimization, all items were summed to derive a total aggression score based on respondents who replied in the affirmative, with higher scores denoting higher levels of self-reported aggression (α = .95).

The relationship between the self-reported victimization and aggression total scores was significant but relatively low (r = .27, $p < .05$), indicating a large degree of unshared variance.

Peer-reported peer victimization/social disruption. Participants first were presented with a randomized list of 20 names of fellow seniors, with the instruction to select names with whom they were familiar. As adapted from similar methods reported in Rubin and Mills (1988) and Terry and Coie (1991), experimenters then asked peers to evaluate each student on the list of selected names to evaluate how often "this person is a target of bullying,"[2] and "this person disrupts class" using a 3-point scale (0 = *never*, 1 = *sometimes*, 2 = *almost always*). The average number of endorsements was 8.90 (*SD* = 4.20) and 8.70 (*SD* = 4.30) for the peer-reported victimization and disruption questions, respectively. Average number of ratings for each question was computed by summing the ratings for each statement and dividing by the total number of nominations. Scores were standardized to correct for different school enrollment sizes.

Correlations between self- and peer-reported aggression and victimization were found to be mild at best, with correlations ranging between .01 (self-reported victimization and peer-reported class disruption, $p > .05$) and .22 (self- and peer-reported victimization, $p < .01$). Thus, the dimensions and methods used to assess bullying behaviors revealed little shared variance.

Disability status. Participants were asked one yes/no question on whether they have ever been diagnosed with a disability. For participants who replied in the affirmative (n = 48), they were then asked to select disability type(s): learning disability, emotional disability, physical disability, or "other." Learning disability constituted the largest endorsed category, followed by attention deficit/hyperactivity disorder (ADHD; combined n = 40). All disability categories were combined into one variable to preserve power.

Social network data. To assess each student's position in the network of social relationships, respondents were presented with a roster of the entire senior class and asked to identify "at least three and up to seven peers you consider to be your closest friends." This range was chosen given previous findings that the average number

[2] The same definition of bullying was provided for this question to maintain consensus.

of friends identified by adolescents is four (Steglich, Snijder, & West, 2006). Closest friends were defined as "people you spend lots of time with doing different activities and whom you can count on when you need help." To allow us to capture an inclusive array of social relationships and to account for those who may not have close relationships, participants were also instructed, "If you don't have any close friends among seniors in your class, please select the names of three people you feel at least somewhat close to." Of the names that were provided, students were then asked to rate each name on a 4-point rating scale (1 = *somewhat close*, 4 = *extremely close*). Although single-item measures can be problematic, they can effectively capture network relationships without undue burden on respondents, especially when they refer to behaviors that endure over some period of time (Marsden, 1990).

Procedure

Permission was given by each school district and each school's principal. Once parental consent and student assent were collected, the students were administered the instruments via computerized survey in a large central location. Disruptions and other extraneous variables were limited by separating participants from nonparticipants, who went to the library or other settings. At least one trained research assistant and a teacher or administrator were stationed in each classroom to address any questions and monitor students' behavior.

Data Analysis

Missing data. On average, 20% of the total enrollment did not participate on the day of the testing (either due to their not being present during the day of testing or their not providing consent/assent). Of the students who participated, less than 1% of the sample had missing data on any of the items on the study instruments. Given the low percentage of missing data, and following the advice of others (e.g., Noone, Stephens, & Alpass, 2010), we did not remove students with missing data from the data set.

Factor analysis. Validating the factor structure of the measure involved two separate steps. First, we conducted an exploratory factor analysis (EFA) on a data set of approximately half of the participants who were randomly selected from the entire data set. This analysis was conducted to cull items with elevated cross-loadings (.30 or higher) and to establish evidence of a two-factor structure. Next, using the findings of the EFA, we conducted a confirmatory factor analysis (CFA) on the remainder of data set. We analyzed several nested models using a number of fit statistics. First, chi-square analyses continues to be the most widely used indicator of model fit, with nonsignificant findings indicative of a "good fit." Nevertheless, considering our large sample, we anticipated that chi-square would be significant, and thus we supplemented our analyses with several alternative fit statistics: normed fit index (NFI), comparative fit index (CFI), and the Tucker–Lewis index (TLI), all of which, when yielding values greater than .90, reflect models with adequate fit (Bollen, 1989; Hu & Bentler, 1998). Root-mean-square error of approximation (RMSEA) also was used to assess the fit of the parameters specified in the model in comparison to its degrees of freedom. In general, while values at or lower than .05 represent "well-fitting" models, values lower than .08 are considered to represent an adequate fit (Browne & Cudeck, 1993). We also analyzed the 90% confidence interval around the RMSEA value to further evaluate model fit (MacCallum, Browne, & Sugawara, 1996). As the models were nested, determining the best fitting model was based on chi-square comparisons and differences in magnitude of the other fit statistics.

Social network extraction. Measures of social connection were extracted from the network survey data using UCInet 6.311 for Windows (Borgatti, Everett, & Freeman, 2002), a statistical package specifically designed for analyzing dyadic data. Results presented herein are based on items endorsed as "somewhat close" and above. *Indegree and outdegree centrality* is the sum of the closeness ratings received or given by respondent, divided by the number of possible ratings (i.e., N − 1) to control for variance across schools in the number of students available to nominate or be nominated. These variables then were standardized and relabeled *normalized indegree* and *normalized outdegree*. In terms of the social relationship data, measures of centrality are relatively robust to missing data such that even when missing up to 25% of actual relationships (which was not the case in this study), central nodes can still be identified with nearly 90% accuracy (Borgatti, Carley, & Krackhardt, 2006).

Results

Validation of the Factor Structure

Using the first random data set, we conducted the EFA (via principal component analysis) on 423 participants using all 19 items of the OES–A. Results found two separate factors with eigenvalues of 8.93 and 3.68, explaining 66.39% of the total variance. Varimax rotation found one item with low loadings on either OES–A factor (<.30) and seven items with high cross-loadings. Using information from this initial EFA, we dropped the eight items and performed a second EFA with the remaining 11 items. Results again supported two separate factors with eigenvalues of 5.95 and 2.48, explaining 76.65% of the total variance. A varimax rotation resulted in all loadings for each factor to be above .81, with no cross-loadings above .23, an improvement from the previous EFA. As shown in Table 1, the first factor was composed of five items that assessed being ignored by the peer group (α = .94) and the second factor was composed of six items that assessed being excluded by the peer group (α = .93).

Previous studies have shown moderate stability for children placed in sociometric categories (e.g., Walker, 2009), and without intervention, children of either unaccepted group (i.e., socially rejected and social neglected) often laterally move from one unaccepted group to the other (Coie & Dodge, 1983; see also Gilman, Schonfeld, & Carboni, 2009). Taking these findings into account, we conceptualized that both OES–A scales would be distinct but not orthogonal. To test for this hypothesized structure, we used CFA to test three different models using the second data set (n = 453). All models were tested on the 11 items suggested by the EFA. The first model loaded all OES–A items onto a single latent factor. Poor model fit (across the fit indices) would confirm what was obtained in the EFA and provide evidence for the multidimensional factor structure of the scale. The second model specified two separate but uncorrelated factors, while the final model allowed the two factors to correlate. All three models terminated normally.

Table 1
Original and Final Items for Social Ostracism Scale

Item	Original		Final	
	Ignored	Excluded	Ignored	Excluded
In general, others				
1. . . . treat me as if I am invisible	X		X	
2. . . . look through me as if I do not exist	X		X	
3. . . . give me the silent treatment	X			
4. . . . have ignored my greetings when we are walking by one another	X		X	
5. . . . ignore me during conversation	X		X	
6. . . . leave the area when I enter a room	X			
7. . . . ignore me	X		X	
8. . . . spread rumors about me	X			
9. . . . physically turn their backs to me when in my presence	X			
10. . . . do not call me on my cell phone	X			
11. . . . do not answer their phones when I call	X			
12. . . . pick me to be on their team		X		
13. . . . "hang out" with me at my home		X		X
14. . . . invite me to join their club, organization, or association		X		X
15. . . . include me in their plans for the holidays		X		X
16. . . . make an effort to get my attention		X		X
17. . . . invite me to go out to eat with them		X		X
18. . . . invite me to join them for weekend activities, hobbies, or events		X		X
In general, when I am around others				
19. . . . I am the center of attention		X		

Fit indices are reported in Table 2. As expected, the single-factor model yielded poor fit indices. Further, not all fit indices were adequate for the uncorrelated, two-factor model, with the RMSEA outside the accepted parameter of adequate fitting models. The 90% confidence intervals for this model also did not extend into the well-fitting range, 90% CI [.084, .108]. In comparison, the two-correlated factor model provided a better fit to the data than the uncorrelated factor model, $\chi_{diff}(1) = 86.29$, $p < .001$. All indices also were larger in magnitude in the correlated model, and the RMSEA demonstrated that the model adequately fit the data. In addition, the 90% confidence interval was between well-fitting and adequately fitting models, 90% CI [.054, .084]. For the correlated two-factor model, the standardized loadings for the five items on the Ignored factor ranged between .792 and .875, while the standardized loadings for the six items on the Excluded factor ranged between .766 and .904. As with the EFA sample, coefficient alphas were high for the Ignored and Exclusion Scales (α = .93 for both) using the second sample. The two factors correlated at .449, indicating a moderate degree of overlap. Collectively, these findings support our first hypothesis: there was sufficient evidence for a two-correlated factor structure of the OES–A, with items distinctly loading on either domain scale.

Table 2
*Fit Indices for Confirmatory Factor Analysis Models of Social Ostracism (*n = *453)*

Model	χ^2	*df*	NFI	CFI	TLI	RMSEA
Single-factor solution	1,576.83	44	.601	.606	.409	.278
Two uncorrelated factors	226.48	44	.943	.953	.930	.096
Two correlated factors	140.19	43	.965	.975	.962	.071

Note. NFI = normed fit index; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root-mean-square error of approximation.

To examine measurement invariance across genders, we first tested the two-correlated factor model separately for males and females, using the entire sample. It was found that the model provided a good fit for both genders (CFIs > .96, NFIs > .95, RMSEA < .081). Next, a multigroup analysis was conducted that constrained factor loadings to be equal across the genders for the model with two correlated factors. No difference was found between the constrained model and unconstrained model, $\Delta\chi^2(11) = 8.59$, $p > .05$.

Demographic Findings

Analyses were conducted to determine whether scores on the OES–A scales varied according to gender, school, race, or SES. Both the gender and SES variables (which were dichotomized) were dummy coded, with males and regular lunch status serving as the intercepts. The race variable was recategorized as White and "other" and then dummy coded, with White youth serving as the intercept. School location was dummy coded, with School 2 (which had the largest enrollment) serving as the intercept. Separate linear regressions had each OES–A scale serving as the dependent variable. No differences were found with respect to gender or race ($p > .05$) on the Ignored Scale. There was a significant school and SES effect for the Ignored Scale, $F(4, 858) = 4.73$, $p < .01$, which was specific to school membership (School 3) and students receiving free lunches, $b = 0.78$ and $b = 0.56$, respectively. There was a significant gender and lunch status effect for the Exclusion Scale, $F(4, 858) = 5.05$, $p < .01$, with males and

students receiving free lunches reporting slightly higher scores ($b = -1.40$ and $b = 1.18$, respectively). Nevertheless, the magnitude of the difference on mean scores across the significant demographic variables was low for both OES–A scales (less than 2 points), and the low overall effect size ($R^2 = .02$ for both scales) limited the practical difference of the findings. Thus, ratings on the OES–A scale were largely invariant with respect to demographic background.

Evidence of Convergent and Discriminant Validity

Table 3 reports all correlations between the OES–A scales and study variables. For the most part, our second hypothesis was supported via significant but differential correlations with each OES–A scale. For the self-report variables, regardless of ostracism subtype, higher levels of ostracism were positive and significantly associated with higher levels of depression, social stress, external locus of control, and disability status, and inversely associated with perceived physical attractiveness. Using Steiger's (1980) test of the significance of the difference between dependent correlations, we found that the coefficient between self-reported aggression and the OES–A Excluded Scale was significantly higher than for the Ignored Scale, while social stress was more strongly associated with the Ignore Scale than the Exclusion Scale ($p < .01$ for both analyses). A similar pattern of findings emerged between the peer-reported variables and each OES–A scale. Although the magnitude of these particular correlations was lower than what was obtained from many of the self-reported variables, the correlations were in keeping with those in studies examining self–other reports on behavioral dimensions (e.g., Chen, Zhang, & Wang, 2009; Gilman, Nounopolous, & Adams, 2011; Oberle et al., 2010). All self–other correlations were in the expected directions. For example, both OES–A scales were significantly and positively associated with peer-reported victimization. Further, each scale was significantly and negatively associated with both social network variables, that is, with the level of perceived exclusion/ignoring related to lower frequencies of closeness endorsements given to and received by peers. Finally, peer-reported disruption was significantly and positively associated with both scales (and somewhat higher for the Exclusion Scale).

Evidence for the discriminant validity of the OES–A scales also was demonstrated by nonsignificant findings with variables that theoretically should be irrelevant. For this study, we chose school (as a nominal variable) and the students' identification number. Correlations were small and nonsignificant (no correlations were above .10).

Table 3
Pearson's Correlations Between the Subscales of the Ostracism Experience Scale for Adolescents, Self-Reports, and Peer-Reports

Variable	Excluded	Ignored
Global Satisfaction	−.32**	−.40**
Depression	.34**	.53**
Social Stress	.45**	.66**
Victimization	.24**	.39**
Locus of Control[a]	.19**	.38**
Personal Appearance	−.28**	−.38**
Disability Status	.08*	.07*
Aggression	.12**	−.07*
Victimization[b]	.22**	.19**
Disruption[b]	.14**	.07*
Normalized Indegree[b]	−.12**	−.19**
Normalized Outdegree[b]	−.23**	−.19**

Note. Sample sizes ranged between 860 and 876.
[a] Domain assesses external locus of control. [b] Peer-reported variables.
* $p < .05$. ** $p < .01$.

Evidence of Predictive Validity

Two separate linear regressions were conducted to further assess if self-reported ostracism added unique variance above sociometric data and other self-reports on psychological distress and well-being. The BASC–2–SRP Depression and SLSS Global satisfaction variables served as the dependent variables, and correlations with the various dependent variables (which have yielded significant relationships with each outcome variable in previous studies; see Huebner, Furlong, & Gilman, 2009 and Rubin & Coplan, 2010) are presented in Table 4. Peer-reported disruption was not significantly related to either depression or global satisfaction and was thus dropped from further analyses.

Each regression was constructed such that self-reported variables were entered at Step 1, peer-reported variables at Step 2, and the OES–A scales entered at the final step. Changes in R^2 were significant at the second and third steps for each dependent variable (see Table 5), with 41.4% (Depression) and 27.8% (Global Satisfaction) of the total variance explained at the final step. After controlling for all other dependent variables, we found that the beta values for each OES-A scale were significant (as was perceived personal appearance[3]). Overall, results provided support for our third and final hypothesis: each OES–A subscale contributed a significant degree of predictive validity to measures of psychological distress and well-being.

Discussion

Given that this was the first study to examine the psychometric properties of the OES–A, the present results should be considered tentative pending future studies. Nevertheless, the findings reported herein provide initial promise for the scale in terms of its (a) underlying factor structure, (b) convergent and discriminant validity, and (c) predictive validity. In this regard, all hypotheses were supported and are briefly discussed.

Evidence in support of Hypothesis 1 was found by the OES–A yielding two distinct (but not orthogonal) dimensions of ostracism. The correlation between the two factors suggested a sizeable degree of shared variance but not to the point where one factor subsumed the other. Thus, the findings indicate that each OES–A scale was an adequate measure of different types of social ostracism. There was little meaningful difference on the OES–A scale

[3] Although not of primary interest in our study, given the robust predictive value of personal appearance on the final step, we were curious as to whether an interaction effect would be found between personal appearance and social ostracism on either depression or life satisfaction. When both predictors were centered and the interaction term was entered on the fourth step, results were not significant for either outcome. Thus, each predictor had a main effect (only) on psychological distress and well-being indicators.

Table 4
Pearson's Correlations Between Depression/Global Satisfaction, Self- and Peer-Reports, and Social Network Variables

Variable	BASC–2 Depression	Global Satisfaction
Global Satisfaction	.65**	—
Victimization	.31**	−.24**
Personal Appearance	−.52**	.42**
Aggression	.12**	−.10**
Victimization[a]	.16**	−.18**
Disruption[a]	−.01	−.02
Normalized Indegree[a]	−.11**	.10**
Normalized Outdegree[a]	−.15**	.16**

Note. BASC–2 = Behavioral Assessment System for Children, 2nd Edition, Self-Report.
[a] Peer-reported variables.
** $p < .01$.

scores across gender, school, race, and socioeconomic status, indicating that the scores were relatively uninfluenced by key demographic variables.

Hypothesis 2 was supported via significant and expected correlations between each OES–A scale and all self- and peer-reports. Researchers continue to explore the nature of social ostracism (Williams, 2009), and although no study has created a taxonomic "profile" of the complete array of dispositional and environmental factors that are associated with the experience, factors such as inhibition/excessive shyness (Menzer, Oh, McDonald, Rubin, & Dashiell-Aje, 2010; Rubin et al., 2009) and aggression/environment disruption (Crick et al., 2009; Newcomb & Bagwell, 1995; Newcomb et al., 1993) have been shown to be distinct reasons why young children become ostracized. The present findings were consistent with this early developmental literature. For example, the correlations between self-reported aggression/peer-reported social disruption and the OES-A Exclusion Scale were significantly higher than with the OES–A Ignored Scale (which was a *negative* and significant predictor of aggression). In contrast, correlations between the BASC–2–SRP Social Stress Scale (a measure of social anxiety) were significantly higher for the OES–A Ignored Scale than for the Exclusion Scale, which is in keeping with previous studies examining the relationship between anxiety and being ignored by peers (Rubin et al., 2009).

The obtained pattern of correlations also extends what is understood of youth who either aggress upon others or are recipients of aggression, and their perceived ostracism experiences. With respect to the former, research into various forms of aggression (e.g., verbal, relational) in younger youth have primarily used teacher, parent, or peer reports as the most common data collection method. Findings based on these methods have shown that while aggressive children may be disliked, they may not necessarily be ostracized by their peer group (Gini, Pozzoli, Borghi, & Franzoni, 2008). However, it has been difficult to capture a sense of how youth perceived their own experiences of being socially ostracized or whether they perceived these experiences accurately. For example, studies of aggressive children (up to middle school) have found that highly aggressive children tend to misinterpret social cues and tend to overestimate their social status (Kenny et al., 2007; Lansford, Malone, Dodge, Petit, & Bates, 2010). To date, none of the available self-report aggression measures (e.g., Fite, Stauffacher, Ostrov, & Colder, 2008; Leadbeater, Boone, Sangster, & Mathieson, 2006; Little, Jones, Henrich, & Hawley, 2003; Tackett & Ostrov, 2010; Verona, Sadeh, Case, Reed, & Bhattacharjee, 2008) have directly assessed how youth reporting comparatively high levels of aggression perceive themselves as being ignored or excluded by others. Our findings suggest that adolescents who report higher levels of aggression and disruption are somewhat sensitive to their social experiences. Admittedly, the correlations in this study were low (but nonetheless significant), which is to be expected given the different methods used to identify aggressive youth. Nevertheless, such findings provide initial evidence that measures such as the OES–A may yield important information on how certain segments of adolescents (i.e., those who are aggressive or disruptive) may perceive their ostracism experiences.

With respect to peer victimization, a strength of our study was the gathering of peer victimization data from multiple perspectives, which addresses longstanding concerns regarding method invariance (see Nakamoto & Schwartz, 2010). Our findings showed that regardless of method used to identify youth who were bullied, both the OES–A scales were positively and significantly related to this negative peer experience. Admittedly, it is quite

Table 5
Summary of Hierarchical Regression Analysis of Depressive Symptoms and Global Satisfaction on Self-Reports (Step 1), Peer-Reports (Step 2), and Scales of the Ostracism Experience Scale for Adolescents (Step 3)

	Depression (β values)			Global Satisfaction (β values)		
Predictor	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3
Victimization	.14**	.15**	.05	−.12**	−.10**	−.03
Personal Appearance	−.46**	−.45**	−.34**	.38**	.37**	.29**
Aggression	.04	.04	.04	−.04	−.04	−.05
PR Victimization		.08	.04		−.11**	−.08
Normalized Indegree		−.05	−.02		.01	.01
Normalized Outdegree		−.07	−.02		.07	.03
Ignored			.33**			−.19**
Excluded			.10**			−.11**
Adjusted R^2	.30	.31	.41	.19	.23	.28
ΔR^2		.02**	.10**		.04**	.05**

** $p < .01$.

possible that the type of victimization (e.g., verbal, physical) may differentially correlate with different ostracism experiences. However, given that (a) no study has established that one type of victimization is more damaging than another to an adolescent's well-being, (b) the correlations between domains in the present study were high, and (c) our study is one of the first to examine the relationship between ostracism and victimization among high school adolescents, we took a more conservative approach and examined the total victimization score. Nonetheless, future studies should explore how victimization types differentially correspond to ostracism experiences and how these experiences are perceived across raters (see Biggs et al., 2010, for a recent study among elementary school children).

Additional support for the convergent validity of the OES–A was evidenced by both scales being significantly and negatively related to network centrality. In general, higher scores on both the Exclusion and Ignore Scales were associated with lower numbers of closeness endorsements provided to and received by others. Although the use of social network analysis has had a rich tradition in the social sciences (see Borgatti, Mehra, Brass, & Labianca, 2009), rarely has the method been used to cross-validate self-report measures. Our findings represent the first attempt to compare self-reported ostracism against adolescents' entire social network. As such, our findings provide support for the utility of the method and can be viewed as an initial step toward a larger understanding of how network variables can themselves reinforce and maintain social exclusion (Gilman et al., 2009).

Support for our final hypothesis was found in that both OES–A scales yielded significant and different predictive validity estimates to psychological distress (depression) and global satisfaction, above other self- and peer-reports that have been theoretically and empirically related to each outcome. After all other variables (regardless of data collection method) were controlled, only the OES–A scales and physical appearance were significant predictors of each outcome. These findings suggest that the OES–A contributes a unique social perspective in the understanding of factors that contribute to both psychological distress and diminished well-being that is not offered by other, related measures. Future research is clearly needed to explicate these findings. For example, this study used global satisfaction as the outcome variable. It would be potentially useful to examine how the OES–A scales may differentially predict domain-specific satisfaction (e.g., school, friends, family) across different demographic groups and life experiences.

Supplemental Findings

Supplemental findings provided insight into other presumed factors that contribute to ostracism, such as displaying a poor physical appearance or having a disability (Honey et al., 2011; Magin et al., 2008). With respect to the former, both OES–A scales were significantly and negatively related to how an adolescent views his or her physical appearance. Although research has examined the role of physical appearance and its influence on peer relationships (Bešić & Kerr, 2009; Yoo, 2009), few studies have directly investigated the relationship between perceived appearance and social ostracism. The present findings indicate that higher levels of perceived unattractiveness are related to higher levels of perceived ostracism, both with respect to active social exclusion and (more robustly) social ignoring. These findings provide a starting point for research investigating the potentially mediating or moderating role of physical appearance and its relationship with social ostracism among older adolescents. On the other hand, disability status was minimally related to either OES–A scale. Our study was limited by our having to combine disability categories into one group to preserve power. The tradeoff to this method was that in doing so, our findings were somewhat inconsistent with previous studies examining poor peer relationships and specific disabilities, such as ADHD (Mrug et al., 2009) and learning disabilities (Simpson & Price, 2010). This concern is somewhat tempered by recent studies that have shown that the degree and severity of a disability often bring additional resources, such as teacher aides and community resources. The inclusion of such resources can moderate the impact of peer exclusion (Honey et al., 2009). Thus, our findings may have reflected the degree of social attention that was given to adolescents with disabilities, which in turn may have attenuated their perceived ostracism experiences. Nonetheless, additional research is needed to focus on a larger sample of youth having a variety of disabilities.

Limitations

There are a number of acknowledged limitations in this study. Specifically, the reported data set was cross-sectional and based on students from one geographical region. That mean score differences for the OES–A scales across schools were of limited practical significance (i.e., less than 2 points) may attenuate some concerns regarding sampling bias. Nevertheless, applying the OES–A to samples of adolescents across diverse geographical areas and settings is needed. Second, although social ostracism is often thought to be a chronic experience, experimentally induced ostracism can lead to reported discomfort in as little as 3 min (Williams, 2009). For this reason, test–retest reliability of the OES–A should be established to provide better understanding of the short-term and long-term outcomes associated with ostracism. Future studies incorporating longitudinal methods would help researchers to discern the long-term trajectory of ostracism reports, particularly as they interface with potentially harmful consequences (such as chronic victimization). Finally, as with any study examining a new self-report measure against established self-reported measures, the findings reported herein may be due to possible shared method variance rather than being due to hypothesized links between the theoretical constructs. Our inclusion of peer-reports helps weaken this concern, but additional studies are clearly needed to corroborate these findings.

Summary

In sum, for over a century, research has consistently documented how social relationships play a vital role in child development (Ladd, 2005). Among younger children, the harmful effects of social ostracism are well noted and include significant relationships with psychological distress (Schwartz, Gorman, Duong, & Nakamoto, 2008), poor school performance (Gazelle, & Ladd, 2003), negative self-concepts (Coplan, Prakash, O'Neil, & Armer, 2004), and peer victimization (Buhs et al., 2010). While recent evidence shows that the effects of ostracism on psychosocial development may be even more pronounced in older adoles-

cents (Pharo et al., 2011), comparatively little research has examined the phenomena at this age level. The impetus of this study was to create a self-report social ostracism measure that can be used either to complement existing methodologies commonly used by developmental or social psychologists or to serve as a valid measure of ostracism when other methods are inappropriate or contraindicated. The current article presents a new, valid means of assessing social ostracism in late adolescence. By better understanding how social ostracism is experienced, researchers may be better equipped to design interventions to reduce the relationships between being excluded and ignored on diminished well-being. Data supporting the initial psychometric properties of the OES–A represent a positive first step in this direction.

References

Annie E. Casey Foundation. (2009). *Kids Count data center*. Retrieved from http://datacenter.kidscount.org/data/acrossstates/Default.aspx

Asher, S. R., & Dodge, K. A. (1986). Identifying children who are rejected by their peers. *Developmental Psychology, 22,* 444–449. doi:10.1037/0012-1649.22.4.444

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117,* 497–529. doi:10.1037/0033-2909.117.3.497

Bellmore, A., Jiang, X. L., & Juvonen, J. (2010). Utilizing peer nominations in middle school: A longitudinal comparison between complete classroom-based and random list methods. *Journal of Research on Adolescence, 20,* 538–550. doi:10.1111/j.1532-7795.2010.00640.x

Bešić, N., & Kerr, M. (2009). Punks, Goths, and other eye-catching peer crowds: Do they fulfill a function for shy youths? *Journal of Research on Adolescence, 19,* 113–121. doi:10.1111/j.1532-7795.2009.00584.x

Biggs, B. K., Vernberg, E., Little, T. D., Dill, E. J., Fonagy, P., & Twemlow, S. W. (2010). Peer victimization trajectories and their association with children's affect in late elementary school. *International Journal of Behavioral Development, 34,* 136–146. doi:10.1177/0165025409348560

Blackhart, G. C., Nelson, B. C., Knowles, M. L., & Baumeister, R. F. (2009). Rejection elicits emotional reactions but neither causes immediate distress nor lowers self-esteem: A meta-analytic review of 192 studies on social exclusion. *Personality and Social Psychology Review, 13,* 269–309. doi:10.1177/1088868309346065

Bollen, K. A. (1989). *Structural equations with latent variables*. Oxford, England: Wiley.

Bong, M. (2001). Between- and within-domain relations of academic motivation among middle and high school students: Self-efficacy, task value, and achievement goals. *Journal of Educational Psychology, 93,* 23–34. doi:10.1037/0022-0663.93.1.23

Borgatti, S. P., Carley, K. M., & Krackhardt, D. (2006). On the robustness of centrality measures under conditions of imperfect data. *Social Networks, 28,* 124–136. doi:10.1016/j.socnet.2005.05.001

Borgatti, S. P., Everett, M. G., & Freeman, L. C. (2002). *UCInet Version 6.311 for Windows [Computer software]*. Harvard, MA: Analytic Technologies.

Borgatti, S. P., Mehra, A., Brass, D. J., & Labianca, G. (2009, February 13). Network analysis in the social sciences. *Science, 323,* 892–895. doi:10.1126/science.1165821

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), *Testing structural equation models* (pp. 136–162). Newburry Park, CA: Sage.

Buhs, E. S., Ladd, G. W., & Herald-Brown, S. L. (2010). Victimization and exclusion: Links to peer rejection, classroom engagement, and achievement. In S. R. Jimerson, S. M. Swearer, & D. L. Espelage (Eds.), *Handbook of bullying in schools: An international perspective* (pp. 163–172). New York, NY: Routledge/Taylor & Francis Group.

Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait–multimethod matrix. *Psychological Bulletin, 56,* 81–105. doi:10.1037/h0046016

Chen, G.-H., Zhang, W.-X., & Wang, S.-Q. (2009). Agreement among different informants over ratings of adolescent externalizing behaviors. *Acta Psychologica Sinica, 41,* 144–155. doi:10.3724/SP.J.1041.2009.00144

Cillessen, A. H. N. (2009). Sociometric methods. In K. H. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 82–99). New York, NY: Guilford Press.

Clifton, A., Turkheimer, E., & Oltmanns, T. (2007). Improving assessment of personality disorder traits through social network analysis. *Journal of Personality, 75,* 1007–1032. doi:10.1111/j.1467-6494.2007.00464.x

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

Connelly, B. S., & Ones, D. S. (2010). An other perspective on personality: Meta-analytic integration of observers' accuracy and predictive validity. *Psychological Bulletin, 136,* 1092–1122. doi:10.1037/a0021212

Coplan, R. J., Prakash, K., O'Neil, K., & Armer, M. (2004). Do you "want" to play? Distinguishing between conflicted-shyness and social disinterest in early childhood. *Developmental Psychology, 40,* 244–258. doi:10.1037/0012-1649.40.2.244

Crick, N. R., Murray-Close, D., Marks, P. E. L., & Mohajeri-Nelson, N. (2009). Aggression and peer relationships in school-age children: Relational and physical aggression in group and dyadic contexts. In K. H. Rubin, W. M. Bukowski, & B. Laursen (Eds.), *Handbook of peer interactions, relationships, and groups* (pp. 287–302). New York, NY: Guilford Press.

Deater-Deckard, K. (2001). Annotation: Recent research examining the role of peer relationships in the development of psychopathology. *Journal of Child Psychology and Psychiatry, 42,* 565–579. doi:10.1111/1469-7610.00753

Dixon, R. (2007). Ostracism: One of the many causes of bullying in groups? *Journal of School Violence, 6,* 3–26. doi:10.1300/J202v06n03_02

Eisenberger, N. I., & Lieberman, M. D. (2005). Why it hurts to be left out: The neurocognitive overlap between physical and social pain. In K. D. Williams, J. P. Forgas, & J. P W. von Hippel (Eds.), *The social outcast: Ostracism, social exclusion, rejection, and bullying* (pp. 109–127). New York, NY: Psychology Press.

Epkins, C. C., & Heckler, D. R. (2011). Integrating etiological models of social anxiety and depression in youth: Evidence for a cumulative interpersonal risk model. *Clinical Child and Family Psychology Review, 14,* 329–376. doi:10.1007/s10567-011-0101-8

Fite, P. J., Stauffacher, K., Ostrov, J. M., & Colder, C. R. (2008). Replication and extension of Little et al.'s (2003). forms and functions of aggression measure. *International Journal of Behavioral Development, 32,* 238–242. doi:10.1177/0165025408089273

Fox, C. L., & Boulton, M. J. (2006). Longitudinal associations between submissive/nonassertive social behavior and different types of peer victimization. *Violence and Victims, 21,* 383–400. doi doi:10.1891/vivi.21.3.383

Furman, W., & Buhrmester, D. (2009). The Network of Relationships Inventory: Behavioral Systems Version. *International Journal of Behavioral Development, 33,* 470–478. doi:10.1177/0165025409342634

Gazelle, H., & Ladd, G. W. (2003). Anxious solitude and peer exclusion: A diathesis–stress model of internalizing trajectories in childhood. *Child Development, 74,* 257–278. doi:10.1111/1467-8624.00534

Gilman, R., & Anderman, E. (2006). Levels of motivation and their relationship to intrapersonal, interpersonal and academic functioning

among high school youth. *Journal of School Psychology, 44,* 375–391. doi:10.1016/j.jsp.2006.03.004

Gilman, R., Huebner, E. S., & Laughlin, J. E. (2000). A first study of the Multidimensional Students' Life Satisfaction Scale with adolescents. *Social Indicators Research, 52,* 135–160. doi:10.1023/A:1007059227507

Gilman, R., Nounopoulos, A., & Adams, R. (2011). Self–other convergence on perfectionism reports. *Journal of Research on Adolescence, 21,* 505–511. doi:10.1111/j.1532-7795.2010.00689.x

Gilman, R., Schonfeld, D. J., & Carboni, I. (2009). Using social network analysis as a lens to examine socially isolated youth. In M. Kern (Ed.), *Bullying, rejection, and peer victimization: A social cognitive neuroscience perspective* (pp. 345–363). New York, NY: Springer.

Gini, G., Pozzoli, T., Borghi, F., & Franzoni, L. (2008). The role of bystanders in students' perceptions of bullying and sense of safety. *Journal of School Psychology, 46,* 617–638. doi:10.1016/j.jsp.2008.02.001

Honey, A., Emmerson, E., & Llewellyn, G. (2011). The mental health of young people with disabilities: Impact of social conditions. *Social Psychiatry and Psychiatric Epidemiology, 46,* 1–10. doi:10.1007/s00127-009-0161-y

Hu, L.-T., & Bentler, P. M. (1998). Fit indices in covariance structure modeling: Sensitivity to underparameterized model misspecification. *Psychological Methods, 3,* 424–453. doi:10.1037/1082-989X.3.4.424

Huebner, E. S. (1991). Initial validation of the Student's Life Satisfaction Scale. *School Psychology International, 12,* 231–240. doi:10.1177/0143034391123010

Huebner, E. S., Furlong, M., & Gilman, R. (2009). A conceptual model for research in positive psychology in children and youth. In R. Gilman, E. S. Huebner, & M. Furlong (Eds.), *Handbook of positive psychology in schools* (pp. 3–8). New York, NY: Routledge/Taylor & Francis Group.

Kenny, D. A., West, T. V., Cillessen, A. H. N., Coie, J. D., Dodge, K. A., Hubbard, J. A., & Schwartz, D. (2007). Accuracy in judgments of aggressiveness. *Personality and Social Psychology Bulletin, 33,* 1225–1236.

Ladd, G. W. (2005). *Children's peer relations and social competence: A century of progress*. New Haven, CT: Yale University Press.

Ladd, G. W. (2006). Peer rejection, aggressive or withdrawn behavior, and psychological maladjustment from ages 5 to 12: An examination of four predictive models. *Child Development, 77,* 822–846. doi:10.1111/j.1467-8624.2006.00905.x

Lansford, J. E., Malone, P. S., Dodge, K. A., Pettit, G. S., & Bates, J. E. (2010). Developmental cascades of peer rejection, social information processing biases, and aggression during middle childhood. *Development and Psychopathology, 22,* 593–602. doi:10.1017/S0954579410000301

Lau, G., Moulds, M. L., & Richardson, R. (2009). Ostracism: How much it hurts depends on how you remember it. *Emotion, 9,* 430–434. doi:10.1037/a0015350

Laursen, B., & Hafen, C. A. (2010). Future directions in the study of close relationships: Conflict is bad (except when it's not). *Social Development, 19,* 858–872. doi:10.1111/j.1467-9507.2009.00546.x

Leadbeater, B. J., Boone, E. M., Sangster, N. A., & Mathieson, L. C. (2006). Sex differences in the personal costs and benefits of relational and physical aggression in high school. *Aggressive Behavior, 32,* 409–419. doi:10.1002/ab.20139

Leary, M. R., Kowalski, R. M., Smith, L., & Phillips, S. (2003). Teasing, rejection, and violence: Case studies of the school shootings. *Aggressive Behavior, 29,* 202–214. doi:10.1002/ab.10061

Little, T. D., Jones, S. M., Henrich, C. C., & Hawley, P. H. (2003). Disentangling the "whys" from the "whats" of aggressive behavior. *International Journal of Behavioral Development, 27,* 133–183. doi:10.1080/01650250244000128

Maassen, G. H., & Verschueren, K. (2005). A two-dimensional ratings-based procedure for sociometric status determination as an alternative to the Asher and Dodge System. *Merrill-Palmer Quarterly, 51,* 192–212. doi:10.1353/mpq.2005.0011

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1,* 130–149. doi:10.1037/1082-989X.1.2.130

Magin, P., Adams, J., Heading, G., Pond, D., & Smith, W. (2008). Experiences of appearance-related teasing and bullying in skin diseases and their psychological sequelae: Results of a qualitative study. *Scandinavian Journal of Caring Sciences, 22,* 430–436. doi:10.1111/j.1471-6712.2007.00547.x

Marsden, P. V. (1990). Network data and measurement. In W. R. Scott & J. Blake (Eds.), *Annual review of sociology* (pp. 435–463). Palo Alto, CA: Annual Reviews.

Marsee, M. A., Barry, C. T., Childs, K. K., Frick, P. J., Kimonis, E. R., Muñoz, L. C., . . . Lau, K. S. L. (2011). Assessing the forms and functions of aggression using self-report: Factor structure and invariance of the Peer Conflict Scale in youths. *Psychological Assessment, 23,* 792–804. doi:10.1037/a0023369

Marsh, H. W., Nagengast, B., Morin, A. J. S., Parada, R. H., Craven, R. G., & Hamilton, L. R. (2011). Construct validity of the multidimensional structure of bullying and victimization: An application of exploratory structural equation modeling. *Journal of Educational Psychology, 103,* 701–732. doi:10.1037/a0024122

Mauss, I. B., Shallcross, A. J., Troy, A. S., John, O. P., Ferrer, E., Wilhelm, F. H., & Gross, J. J. (2011). Don't hide your happiness! Positive emotion dissociation, social connectedness, and psychological functioning. *Journal of Personality and Social Psychology, 100,* 738–748. doi:10.1037/a0022410

Mayeux, L., Bellmore, A. D., & Cillessen, A. H. N. (2007). Predicting changes in adjustment using repeated measures of sociometric status. *Journal of Genetic Psychology, 168,* 401–424. doi:10.3200/GNTP.168.4.401-424

Menzer, M. M., Oh, W., McDonald, K. L., Rubin, K. H., & Dashiell-Aje, E. (2010). Behavioral correlates of peer exclusion and victimization of East Asian American and European American young adolescents. *Asian American Journal of Psychology, 1,* 290–302. doi:10.1037/a0022085

Mishna, F. (2012). *Bullying: A guide to research, intervention, and prevention*. New York: Oxford University Press. doi:10.1093/acprof:oso/9780199795406.001.0001

Mrug, S., Hoza, B., Gerdes, A. C., Hinshaw, S., Arnold, L. E., Hechtman, L., . . . Pelham, W. E. (2009). Discriminating between children with ADHD and classmates using peer variables. *Journal of Attention Disorders, 12,* 372–380. doi:10.1177/1087054708314602

Nakamoto, J., & Schwartz, D. (2010). Is peer victimization associated with academic achievement? A meta-analytic review. *Social Development, 19,* 221–242. doi:10.1111/j.1467-9507.2009.00539.x

Newcomb, A. F., & Bagwell, C. L. (1995). Children's friendship relations: A meta-analytic review. *Psychological Bulletin, 117,* 306–347. doi:10.1037/0033-2909.117.2.306

Newcomb, A. F., Bukowski, W. M., & Pattee, L. (1993). Children's peer relations: A meta-analytic review of popular, rejected, neglected, controversial, and average sociometric status. *Psychological Bulletin, 113,* 99–128. doi:10.1037/0033-2909.113.1.99

Noone, J. H., Stephens, C., & Alpass, F. (2010). The process of Retirement Planning Scale (PRePS): Development and validation. *Psychological Assessment, 22,* 520–531. doi:10.1037/a0019512

Oberle, E., Schonert-Reichl, K. A., & Thomson, K. C. (2010). Understanding the link between social and emotional well-being and peer relations in early adolescence: Gender-specific predictors of peer acceptance. *Journal of Youth and Adolescence, 39,* 1330–1342. doi:10.1007/s10964-009-9486-9

Olweus, D. (1993). *Bullying at school: What we know and what we can do*. Malden, MA: Blackwell.

Parault, S. J., Davis, H. A., & Pellegrini, A. D. (2007). The social contexts of bullying and victimization. *The Journal of Early Adolescence, 27,* 145–174. doi:10.1177/0272431606294831

Park, Y., Killen, M., Crystal, D. S., & Watanabe, H. (2003). Korean, Japanese, and U.S. students' judgments about peer exclusion: Evidence for diversity. *International Journal of Behavioral Development, 27,* 555–565. doi:10.1080/01650250344000217

Peery, J. C. (1979). Popular, amiable, isolated, rejected: A reconceptualization of sociometric status in preschool children. *Child Development, 50,* 1231–1234. doi:10.2307/1129356

Pharo, H., Gross, J., Richardson, R., & Hayne, H. (2011). Age-related changes in the effect of ostracism. *Social Influence, 6,* 22–38. doi:10.1080/15534510.2010.525852

Reynolds, C. R., & Kamphaus, R. W. (2004). *Manual for the Behavioral Assessment System for Children* (2nd ed.). Circle Pines, MN: American Guidance Services.

Rice, K. G., Ashby, J. S., & Gilman, R. (2011). Classifying adolescent perfectionists. *Psychological Assessment,*

Rose, A. J., Swenson, L. P., & Waller, E. M. (2004). Overt and relational aggression and perceived popularity: Developmental differences in concurrent and prospective relations. *Developmental Psychology, 40,* 378–387. doi:10.1037/0012-1649.40.3.378

Roseth, C. J., Johnson, D. W., & Johnson, R. T. (2008). Promoting early adolescents' achievement and peer relationships: The effects of cooperative, competitive, and individualistic goal structures. *Psychological Bulletin, 134,* 223–246.

Rubin, K. H., Chen, X., McDougall, P., Bowker, A., & McKinnon, J. (1995). The Waterloo Longitudinal Project: Predicting adolescent internalizing and externalizing problems from early and mid-childhood. *Development and Psychopathology, 7,* 751–764. doi:10.1017/S0954579400006829

Rubin, K. H., & Coplan, R. J. (2004). Paying attention to and not neglecting social withdrawal and social isolation. *Merrill-Palmer Quarterly, 50,* 506–534. doi:10.1353/mpq.2004.0036

Rubin, K. H., & Coplan, R. J. (2010). *The development of shyness and social withdrawal*. New York, NY: Guilford Press.

Rubin, K. H., Coplan, R. J., & Bowker, J. C. (2009). Social withdrawal in childhood. *Annual Review of Psychology, 60,* 141–171. doi:10.1146/annurev.psych.60.110707.163642

Rubin, K. H., & Mills, R. S. (1988). The many faces of social isolation in childhood. *Journal of Consulting and Clinical Psychology, 56,* 916–924. doi:10.1037/0022-006X.56.6.916

Salvy, S.-J., Bowker, J. C., Nitecki, L. A., Kluczynski, M., Germeroth, L. J., & Roemmich, J. N. (2011). Impact of simulated ostracism on overweight and normal-weight youths' motivation to eat and food intake. *Appetite, 56,* 39–45. doi:10.1016/j.appet.2010.11.140

Sandstrom, M. J., & Bartini, M. (2010). Do perceptions of discrepancy between self and group norms contribute to peer harassment at school? *Basic and Applied Social Psychology, 32,* 217–225. doi:10.1080/01973533.2010.495645

Schwartz, D., Gorman, A. H., Duong, M. T., & Nakamoto, J. (2008). Peer relationships and academic achievement as interacting predictors of depressive symptoms in middle childhood. *Journal of Abnormal Psychology, 117,* 289–299. doi:10.1037/0021-843X.117.2.289

Sebastian, C. L., Tan, G. C. Y., Roiser, J. P., Viding, E., Dumontheil, I., & Blakemore, S.-J. (2011). Developmental influences on the neural bases of responses to social rejection: Implications of social neuroscience for education. *NeuroImage, 57,* 686–694. doi:10.1016/j.neuroimage.2010.09.063

Sebastian, C., Viding, E., Williams, K. D., & Blakemore, S.-J. (2010). Social brain development and the affective consequences of ostracism in adolescence. *Brain and Cognition, 72,* 134–145. doi:10.1016/j.bandc.2009.06.008

Simpson, G., & Price, V. (2010). From inclusion to exclusion: Some unintended consequences of valuing people. *British Journal of Learning Disabilities, 38,* 180–186. doi:10.1111/j.1468-3156.2009.00572.x

Sippola, L., Buchanan, C. M., & Kehoe, S. (2007). Correlates of false self in adolescent romantic relationships. *Journal of Clinical Child and Adolescent Psychology, 36,* 515–521. doi:10.1080/15374410701653740

Steglich, C., Snijders, T. A. B., & West, P. (2006). Applying SIENA: An illustrative analysis of the coevolution of adolescents' friendship networks, taste in music, and alcohol consumption. *Methodology: European Journal of Research Methods for the Behavioral and Social Sciences, 2,* 48–56. doi:10.1027/1614-2241.2.1.48

Steiger, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin, 87,* 245–251. doi:10.1037/0033-2909.87.2.245

Tackett, J. L., & Ostrov, J. M. (2010). Measuring relational aggression in middle childhood in a multi-informant multi-method study. *Journal of Psychopathology and Behavioral Assessment, 32,* 490–500. doi:10.1007/s10862-010-9184-7

Terry, R., & Coie, J. D. (1991). A comparison of methods for defining sociometric status among children. *Developmental Psychology, 27,* 867–880. doi:10.1037/0012-1649.27.5.867

Turner, H. A., Finkelhor, D., & Ormrod, R. (2010). Poly-victimization in a national sample of children and youth. *American Journal of Preventive Medicine, 38,* 323–330. doi:10.1016/j.amepre.2009.11.012

Verona, E., Sadeh, N., Case, S. M., Reed, A., & Bhattacharjee, A. (2008). Self-reported use of different forms of aggression in late adolescence and emerging adulthood. *Assessment, 15,* 493–510. doi:10.1177/1073191108318250

Walker, S. (2009). Sociometric stability and the behavioral correlates of peer acceptance in early childhood. *Journal of Genetic Psychology, 170,* 339–358. doi:10.1080/00221320903218364

Wentzel, K. R. (2005). Peer relationships, motivation, and academic performance at school. In A. J. Elliot & C. S. Dweck (Eds.), *Handbook of competence and motivation* (pp. 279–296). New York, NY: Guilford Press.

Wentzel, K. B., Baker, S., & Russell, S. (2009). Peer relationships and positive adjustment at school. In R. Gilman, E. S. Huebner, & M. Furlong (Eds.), *Handbook of positive psychology in schools* (pp. 229–243). New York, NY: Routledge/Taylor & Francis Group.

Williams, K. D. (2007). Ostracism: The kiss of social death. *Social and Personality Psychology Compass, 1,* 236–247. doi:10.1111/j.1751-9004.2007.00004.x

Williams, K. D. (2009). *Ostracism: A temporal need-threat model*. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 41, pp. 279–314). New York, NY: Academic Press.

Witvliet, M., Brendgen, M., Van Lier, P. A. C., Koot, H. M., & Vitaro, F. (2010). Early adolescent depressive symptoms: Prediction from clique isolation, loneliness, and perceived social acceptance. *Journal of Abnormal Child Psychology, 38,* 1045–1056. doi:10.1007/s10802-010-9426-x

Yoo, J.-J. (2009). Peer influence on adolescent boys' appearance management behaviors. *Adolescence, 44,* 1017–1031.

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

Zettergren, P. (2007). Cluster analysis in sociometric research: A pattern-oriented approach to identifying stable peer status in groups of girls. *Journal of Early Adolescence, 27,* 90–114. doi:10.1177/0272431606294827

Received April 27, 2011
Revision received October 10, 2012
Accepted October 16, 2012 ■