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by

Aaron Boyce

August 2015

Development and Validation of the Causes of Peer Rejection Scale

A Dissertation Presented to the
Faculty of the College of Education
University of Houston

In Partial Fulfillment
of the Requirements for the Degree

Doctor of Philosophy

by

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August 2015

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To my beautiful wife Lisa, who always accepted me for who I was but constantly pushed me to be more.

To my always supportive mother, who would work three and four jobs to provide for our family.

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Abstract

Elementary school children engage in multiple social interactions each day. These frequent interactions are a positive experience for most children; however, a minority of children experience peer rejection (Coie, Dodge, & Coppotelli, 1982). Multiple methods exist to assess for peer rejection, but none that include assessment of plausible etiological factors. Understanding the etiology of peer rejection may be the first step in developing effective intervention and preventative strategies and may lead to a more targeted approach (Coie, Miller-Johnson, & Bagwell, 2000; Mrazek & Haggerty, 1994).

The current study aimed to address this gap through a new parent assessment tool, the Causes of Peer Rejection Scale (CPRS). The measure examines etiological factors that may be contributing to peer rejection with the aim of identifying areas of intervention. This study aimed to extend the literature by focusing on etiology instead of topography on a group of children who are at a higher risk for peer rejection – those with developmental disabilities. The study was a two-phase process. The first phase was the development and refinement of the CPRS through a focus group. Four parents completed an early version of the measure and provided researchers with feedback regarding items and readability. The second phase examined the psychometric properties of the measure including concurrent validity with the Strengths and Difficulties Questionnaire (Goodman, 1997) and test-retest reliability. One hundred and fifty-five parents completed the measures for phase II. A confirmatory factor analysis was used to evaluate

the proposed structure. The hypothesized model did not fit the data so an exploratory factor analysis was utilized after items were discarded. The scale fit a six-factor solution but was forced into a five-factor solution based on item loadings and theory. The five latent factors were Appearance, Speech, Problem Behaviors, Academics, and Social Skills. The measure demonstrated adequate convergent validity, Cronbach Alpha reliability, and test-retest reliability. Other research questions were answered including determining which underlying factors were related to the most negative outcomes for children. Potential contributions to the literature in addition to limitations are discussed.

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Chapter I

The Importance of Understanding Etiology

“All human actions have one or more of these seven causes: chance, nature, compulsion, habit, reason, passion, and desire.” - Aristotle

The study and understanding of the cause, or etiology, of disorders and negative behaviors may provide researchers and clinicians with insight into prevention and intervention (Coie, Miller-Johnson, & Bagwell, 2000). In fact, Mrazek and Haggerty (1994) proposed that studying the epidemiology (which includes the etiology) of a phenomenon should be the first step in this process. This may be most relevant for psychological disorders and distress because these problems tend to be complex.

Psychosocial Interventions Based on Etiological Information

Determining the etiology of psychological dysfunction has led to the development of many psychosocial interventions for children and adolescents. For example, behavioral treatments have been shown to be effective in addition to stimulant medications for Attention Deficit Hyperactivity Disorder (ADHD; Fabiano et al., 2009; Pelham & Fabiano, 2008). These behavioral interventions typically emphasize changing previous routines to implement more structure. Clinicians focus on the etiology of the behavioral difficulties (e.g., inconsistent routines, lack of structure in the home) and attempt to alleviate the problem based on this information.

Clinicians delivering interventions for disruptive behavior disorders have also benefited from etiological information. For example, parent-child interaction therapy (PCIT), an evidenced-based intervention, focuses on parental interactions with the child and setting clear boundaries (Eyberg et al., 2001). During the early phase of treatment,

therapists typically observe the parents with their child to assess how they have interacted with the child in the past and present. This includes the parent giving a demand (e.g., put the toy in the box) to assess for previous and current strategies for compliance.

Clinicians typically conduct an interview with the parents to further assess previous strategies for compliance. This information is used to inform future treatment with the family as therapists introduce a (typically) more structured approach to compliance.

The field of adolescent depression has also benefited from etiological information to inform treatment. One evidence-based approach, cognitive behavioral therapy (CBT), has been shown to be effective using this information (Brent et al., 1997; Weisz & Kazdin, 2010). Within this theoretical framework, “first-onset and recurrence of depression are often preceded by negative psychosocial events, including family conflict, physical illness, breakup of romantic relationships, and loss of friendships” (Weisz & Kazdin, 2010, p. 127). According to CBT, these negative events lead to potentially negative or unrealistic thoughts which are the antecedents for depressive symptoms. CBT for adolescents attempts to change these thought patterns by first identifying them and then replacing them with more healthy ones. Without focusing on etiology, the therapist and client may lack insight regarding what thoughts are important to reframe.

Another evidence-based intervention which focuses on etiology, Coping Cat (Kendall, 1990; Kendall & Hedtke, 2006a, 2006b), uses etiological information during the “Feeling Frightened?” phase of the intervention to help children cope with anxiety. During this phase, therapists use information regarding previous anxiety-provoking situations in conjunction with relaxation techniques to alleviate anxiety (Weisz & Kazdin, 2010). These techniques may include deep breathing or relaxing specific muscles.

Without information regarding the etiology of the child's anxiety, clinicians would have to undertake the task of guessing and checking which scenarios may elicit anxious behaviors.

An evidence-based treatment for treating children and adolescents with antisocial behaviors, multisystemic therapy (MST), also relies on etiological information to inform treatment. This form of therapy attempts to use systemic variables such as the family, community, and peers to change the behavior of the child (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009; Weisz & Kazdin, 2010). Within the framework of this model, "the ultimate aim is to surround the youth with a context that supports prosocial behavior (e.g., prosocial peers, involved and effective caregivers, supportive school), replacing the context that is conducive to antisocial behavior" (Weisz & Kazdin, 2010, p. 261). As with CBT for youth with depressive symptoms, MST aims at targeting old ways and replacing them with new. Determining the systemic etiology of the antisocial behavior plays a role in replacing dysfunctional aspects with supportive ones.

One final example within psychological therapy is the use of genograms in Bowen's family systems therapy (Nichols, 2009). Genograms provide families with a context to their potential family problems. When completing a genogram, families recall previous relationships throughout their family history and how those relationships may be influencing current behavior. For example, through the use of a genogram, a mother and father may recognize a pattern of estranged relationships over time and similar behavioral patterns are now manifesting in their current marriage. Through the process of a therapist taking careful history and assisting families in constructing a genogram, individuals are

able to conceptualize their problems within the context of broader familial patterns.

Without knowledge of this etiological information, family therapists may lack the details necessary to proceed with therapy.

Psychosocial Interventions Not Based on Etiological Information

While many evidence-based psychological interventions for children and adolescents use etiological information to inform treatment, not all do. For example, interventions based on principles on applied behavior analysis (ABA) tend to place less emphasis on past behavior and only on modifying current and future behavior (Lovaas, 1987; Miltenberger, 2011; Skinner, 1969; Smith, McAdam, & Napolitano, 2007).

According to this paradigm, modification of the current environmental state will lead to behavioral change. Although ABA deemphasizes the past and etiology of the problem, many clinicians still collect this information to inform treatment. These antecedents are termed distal antecedents because they are not found in the immediate situation (which are termed proximal). Proximal antecedents may be assessed through a functional behavior assessment (FBA) and distal through a parent or teacher interview.

Needs for Future Etiological Research

While the field of psychology has made progress in identifying etiological factors related to multiple symptomologies, more work needs to be done in identifying factors which lead to interventions for children in other areas. One example of this gap is in identifying areas of intervention for social skills in children. In fact, “despite the numerous scales to assess social skills in children, few treatment studies use assessment measures to identify treatment targets or to monitor treatment progress” (Boisjoli & Matson, 2009, p. 71). To explain this problem another way, the field of psychology has

become proficient in determining when a problem exists; the issue arises when clinicians need to know what to focus on during intervention (e.g., the etiology). This type of information may lead to more targeted and efficient interventions for children and adolescents.

One specific area of social skills where a gap in etiologically-focused measurement exists is a youth's peer social status and, more specifically, peer rejection. The following section will describe peer social status and peer rejection and why this area is in need of efficient measurement of etiological factors when a child or adolescent is rejected by peers.

Chapter II

Peer Social Status

Elementary school children engage in multiple social interactions each day. This can be something as simple as sitting beside a classmate during lunch, participating in group assignments and activities, or playing on the playground during recess. These frequent interactions are a positive experience for most children; however, a minority of children experience peer rejection (Coie, Dodge, & Coppotelli, 1982; Cook, Williams, Guerra, Kim, & Sadek, 2010; Waasdorp, Bradshaw, & Leaf, 2012). Peer rejection is the active rejection of a child by their peers (Coie, et al., 1982). For example, a child may be interested in sitting with a group of peers at the lunch table but the peers actively move away from him or her and state that they do not want the child to sit with them. Although similar to peer rejection, peer neglect is the passive process of being left out by peers (Coie et al., 1982). In the same example, the group of peers would not actively move away from the child but may just not realize the child is not there. Finally, peer acceptance is achieved when a child is actively included in his/her peer group (Gresham, 1986). Active peer rejection is the category which typically leads to the most negative outcomes for children and adolescents (Gifford-Smith & Brownell, 2003). Children who are rejected are at a higher risk for multiple negative outcomes that will be described in more detail later.

Understanding of the construct of peer rejection may be enhanced through measurement of the etiology and potential impact of this construct. The following sections aim to introduce the reader to these areas. Following this, a specific subset of children, those with a developmental disability, will be explored further because these

children are typically at higher risk for being rejected by peers (Dodge, 1986; Gomez & Hazeldine, 1996; Jacobs, Turner, Faust, & Stewart, 2002; Volkmar, Carter, Grossma, & Klin, 1997). In Chapter IV, the reader will be exposed to many of the current methods clinicians, educators, and researchers use to assess for peer status including strengths and limitations of the current methods. Finally, the current proposal will be presented aiming to fill gaps identified in this area of research.

What Leads to Peer Rejection?

Researchers have identified many factors that may contribute to potential acceptance or rejection within ones' peer group. These include physical attractiveness (Coie et al., 1982), externalizing behaviors (Fite, Wimsatt, Vitulano, Rathert, & Schwartz, 2012), genetic makeup (Caspi et al., 2002), language patterns/usage (Laws, Bates, Feuerstein, Mason-Apps, & White, 2012), academic performance (Veronneau, Vitaro, Brendgen, Dishion, & Tremblay, 2010), social awareness (Spence, 1987), and the presence of psychopathology (Jewell, Jordan, & Evertt, 2011).

Physical Attractiveness. A child or adolescent's appearance has been shown to be related to peer rejection. One example of this is pediatric obesity (Gray, Kahhan, & Janicke, 2009). A child with obesity has "one of the most stigmatizing and least socially acceptable conditions in childhood" (Schwimmer, Burwinkle, & Varni, 2003, p. 1818). In a study examining this phenomenon, Richardson, Goodman, Hastorf, and Dornbusch (1961) asked children to rank order hypothetical classmates. The classmates were represented by six drawings where one of the students appeared healthy and the other five had a physical difference. For example, some of the drawings had children in wheelchairs, crutches, etc. Each of the presentations also included a child who was

overweight. The results indicated that the child who was overweight was consistently given the lowest rank by the participants.

Externalizing Behavior. Problem behaviors (e.g., aggression, noncompliance) have also been shown to be related to peer rejection (Cook et al., 2010). In one example, Wood, Cowan, and Baker (2002) assessed 76 children aged three to five at a university nursery on measures of social withdrawal, hyperactivity, aggression, and non-compliance. Peer rejection was assessed through peer nomination ratings of other children in the class. More specifically, the researchers showed pictures of other children in the nursery and asked how much they played with the child (more about this method of assessment will be detailed later in Chapter IV). The results of the study indicated that preschool children who engaged in externalizing behaviors (e.g., aggression) were significantly more likely to be rejected by their peers. The authors, given the age range of the sample, suggested that this pattern of behavior is noticed more in older children and adolescents, but that it has roots in preschool aged children and is relatively stable (Hinshaw & Anderson, 1996). The authors suggest that this can be understood through the theoretical model of early behavioral deficits and potential insecure attachments. According to this view, some parents may not place appropriate boundaries in the home setting that their child needs to succeed in school and other social areas (Jacobvitz & Sroufe, 1987). Therefore, when the child begins preschool, they are at a higher risk for peer rejection because of behavioral dysregulation. Further, if a child has an insecure attachment to their parental figures during the early years, this could also manifest itself as aggression or withdrawal behavior during preschool because of the child's negative social schemas (Lyons-Ruth, Easterbrooks, & Cibelli, 1997).

Genetic Factors. Some researchers have found that genetic factors may play a role in peer rejection (Bolger & Patterson, 2001). In a study examining epigenetic factors, Caspi et al. (2002) examined the genotypes of 442 males. Multiple measures of externalizing behaviors were collected such as criminality, conduct disorder, disposition towards violence, and antisocial personality disorder. The data that Caspi and colleagues analyzed followed the participants from age 3 to 26. Based on previous research results, the authors were interested in a specific gene located on the X chromosome, monoamine oxidase A (MAOA). In previous studies, deficiencies in the activity of this gene resulted in aggression in animals and humans (Cases et al., 1995; Rowe, 2001). The results of the study indicated that having increased activity of MAOA was a protective factor for children who were maltreated. In fact, children who were severely maltreated and had low MAOA activity were more likely to meet diagnostic criteria for conduct disorder, be convicted of violent offenses, have a disposition toward violence, and exhibit symptomatology of antisocial personality disorder. The author indicated that it is not just the act of trauma or maltreatment that may lead to aggression, peer rejection, and other negative outcomes, but also the presence (or lack thereof) of potential genetic information that may act as protective factors.

Language Patterns/Usage. The way children speak has also been shown to play a significant role in peer rejection (Laws, Bates, Feuerstein, Mason-Apps, & White, 2012). In order to highlight this phenomenon, Laws and colleagues examined 249 children at a public primary school in the United Kingdom. Peer acceptance was measured by peer nomination where peers were read the names of children in their classroom and were instructed to point to a smiling face, frowning face, neutral face, or

question mark to determine how the children felt about that individual (these methods are outlined by Frederickson & Furnham, 1998). The authors wanted the children to respond non-verbally because communication was an important variable in their study. To determine the children's language and communication status, teachers completed the Children's Communication Checklist (Bishop, 2003). The data indicated that children who had more speech and language difficulties were less accepted by their peers, and that acceptance decreased as severity of communication difficulty increased. Additionally, there was a significant correlation between mainstreamed children who were rejected by peers and negative classroom behavior. Although this study highlights the potential social impact of communication problems, the study included only nine children who had speech and language impairment and five who had an autism spectrum disorder within a sample of 249 children.

Academic Performance. In addition to physical attractiveness, externalizing behaviors, genetic factors, and speech patterns, children who perform well academically tend to be more accepted by peers than those who do not (Veronneau et al., 2010). This finding tends to be true for both elementary children and adolescents (Chen, Rubin, & Li, 1997; O'Neil, Welsh, Parke, Wang, & Strand, 1997). According to Veronneau and colleagues (2010), multiple factors converge in determining whether academic competence is influential for peer status. These include parents' and teachers' valuing of higher grades and the trend that the more popular groups in school are typically those who perform well academically and are in gifted classes. These factors appear to be especially influential during middle school. Even in childhood, children who perform

better academically tend to be accepted more by peers-possibly because they make ideal group partners (Coie & Krehbiel, 1984; Veronneau et al., 2010).

Social Awareness. Another factor that may contribute to potential peer rejection is a child's ability to adequately decode facial expressions and determine the appropriate emotion displayed by others. Children who lack this skill may be at higher risk for offending others by not recognizing social cues. For example, Spence (1987) examined this phenomenon in 60 kindergarten children between the ages of three and five years who lived in Australia. Sociometric status was assessed by peer nomination strategies and intelligence by the Stanford-Binet Intelligence Scale: Form L-M (Terman & Merrill, 1960). In addition to these two variables, the researcher also assessed for decoding of facial expressions. For this construct, the children were shown 10 photographs and were asked to identify the correct emotion. For affective role taking, children were read short stories and asked how the child in the story felt. Finally, the author also collected data regarding physical attractiveness (by peer nomination) and behavior problems (by the Walker Problem Identification Checklist, Revised; Walker, 1983). The authors found support for the hypothesis that affective role taking and the appropriate decoding of facial emotions was significantly related to peer status. Overall, children who were better able to perform these functions were more apt to be liked by peers than those who did not perform these behaviors as well. Using a linear regression, Spence identified affective role taking as the strongest predictor of peer social status. This finding was significant when controlling for intelligence, sex, and age.

Other important social skills have been shown to be related to peer social status. These include facial expressions and posture and body movement (Miers, Blote, &

Westenberg, 2010). Behavioral skill deficits in these areas may lead to peers perceiving the child/adolescent as more anxious or awkward thus resulting in negative social status.

Psychopathology. The literature presents multiple examples of children and adolescents with psychopathology who are at a higher risk of peers rejecting them. This includes children with mood disorders, anxiety disorders, and externalizing disorders. One potential reason for this etiological factor of peer rejection is that many of the children with these diagnoses may have social skills deficits related to their diagnosis that could impact their acceptance by peers. See Jewell, Jordan, and Evertt (2011) for a more thorough review.

Impact of Peer Rejection

In an early review of the literature, Parker and Asher (1987) concluded that, overall, individuals who were not socially accepted as children tended to be at higher risk for future maladjustment. The researchers found the most support for predicting variables such as dropping out of school and criminality. It is important to note a distinct difference here between low social acceptance and being a shy or introverted child. While the constructs may be similar, the constructs are different and outcomes for active peer rejection are more severe than for shy children (Gazelle & Rudolph, 2004; Karevoid, Ystrom, Coplan, Sanson, & Mathiesen, 2012; Parker & Asher, 1987). To help highlight the distinction between these constructs, Gazelle & Rudolph (2004) explained it thusly: “In the realm of peer relations, the peer environment can be viewed as moving toward (positive peer treatment and acceptance), away from (indirect peer exclusion), or against (direct peer exclusion and victimization) a youth” (p. 829). A shy child may move away

from youth because of social anxiety. A child who is experiencing peer rejection may want to participate in activities but is actively being left out by other children.

Future Involvement with Antisocial Peers. Being rejected as a child has been shown to be related to future involvement with antisocial peers. To highlight this, Dishion, Patterson, Stoolmiller, & Skinner, (1991) examined 201 boys and their families when the children were 9 and 10 years old, and then again at 11 and 12. The researchers were interested in determining if factors such as peer rejection (as measured by peer nomination) and academic failure were significant predictors of future difficulties. Dishion and colleagues indicated that both peer rejection and early academic failure predicted involvement with antisocial peers, after controlling for previous contact with antisocial peers. According to the authors, early academic failure may significantly predict future involvement with antisocial peers because schools typically group children according to their academic levels. Therefore, children may be grouped with other children who have behavioral and academic difficulties. Additionally, early peer rejection may predict involvement with antisocial peers because "...other rejected children are more tolerant, even encouraging, of antisocial behavior" (p. 179).

Academic Problems. Peer rejection may also act as a mechanism of academic impairment associated with rule breaking behavior (Fite, Wimsatt, Vitulano, Rathert, & Schwartz, 2012; Lubbers, Van Der Werf, Snijders, Creemrs, & Kuyper, 2006). In a sample of 147 children ranging from 3 years of age to 13, peer rejection was found to be a mediating effect in the relationship between rule breaking behavior and academic performance (Fite et al., 2012). This finding highlighted the importance of peer rejection in the presence of other variables (e.g., rule-breaking behavior is significantly related to

peer rejection, which in turn is significantly related to academic performance). Other studies have found that social skills significantly predict academic performance; however, this finding depends on the age of the child (Miles & Stipek, 2006). A unique difference exists between social skills in the elementary grades as opposed to later grades (e.g., 3rd and 5th grade). In the early years, peer relationships are not as important to children and therefore may not have as much of an impact on their academic performance (Gifford-Smith & Brownell, 2003); however, once a child reaches the age where peer relationships become more salient than the relationships between themselves and the teacher, peers can significantly impact academic performance. This highlights an important developmental consideration for social skills and their impact on academic performance. As children become older, positive peer relationships become more important and therefore will likely have a positive impact on performance in school whereas negative peer relationships may negatively impact school performance (Miles & Stipek, 2006).

Externalizing Behaviors. The etiology of peer rejection is likely a multiple-pathway model (Laird, Jordan, Dodge, Pettit, & Bates, 2001). Longitudinal studies indicate that peer rejection is a significant predictor of future externalizing behaviors, especially for children who are rejected repeatedly during the middle school years. In general, “behavior problems in early childhood, peer rejection in middle childhood, and involvement with antisocial peers in early adolescence all were associated with externalizing problems in adolescence” (p. 15). The longitudinal data indicates a complex and multiple-pathway model towards externalizing problems from childhood into adolescence.

Although a great deal of the research has been conducted on typically developing children, Mrug et al. (2012) examined the potential outcomes of peer rejection in children with attention-deficit/hyperactivity disorder (ADHD). The sample included children from a multisite research project ranging from 7 to 9.9 years old at baseline. All of the children included in the study were diagnosed with ADHD, Combined Type (the final sample included 300 participants). The children were exposed to both evidence-based psycho-social and/or pharmacological interventions and then reassessed periodically. In addition to peer social status, other diagnostic information was collected including oppositional defiant disorder (ODD), conduct disorder (CD), delinquency, drug use, depression, anxiety, and global impairment. Overall, the results indicated that even though the children with ADHD had received evidence-based treatment, they were still significantly more rejected by their peers than their classmates. Peer rejection was positively associated with delinquency at the 24 month and 6 year period, smoking after 6 years, anxiety at both 6 and 8 years after treatment, and global impairment at all time points. Overall, the researchers found that the impact of childhood peer rejection of children with ADHD has the most impact during middle adolescence (ages 14 to 15).

Social Avoidance and Distress. Although most of the research regarding the impact of peer rejection on children and adolescents has been conducted in the United States, Beerli and Lev-Wiesel (2012) distributed self-report questionnaires to 511 adolescents ranging from age 12 to 17 in Israel. The self-report measures included measures of trauma, social rejection, post-traumatic stress disorder, depression, perceived social support, and social avoidance and distress. In this study, around one third of the participants reported being socially rejected. Additionally, social rejection was related to

increased amounts of psychological distress and social avoidance; however, this relationship was buffered by protective factors such as perceived social support and potency. For the current study, potency was described as "...self-confidence, self-control, and beliefs in a just, orderly society..." (p. 219).

In another study, La Greca and Harrison (2005) examined 421 adolescents with a mean age of 16.5 in the United States. The teenagers were administered multiple measures regarding their peer social group, relational victimization, and friendship quality. The results indicated that these three factors significantly predicted social anxiety. More specifically, adolescents were more likely to have social anxiety if they were not part of a peer group (e.g., either high or low status crowds), had a history of relational victimization, and negative best friends. The authors reported that relational victimization was the most contributing factor when predicting social anxiety and depressive symptoms.

Emotional Responses. Peers delivering rejecting or accepting statements can impact emotional response and even eye movement. In a study integrating technology to assess the impact of peer rejection, Silk et al. (2012) tracked the eye movements of 60 children and adolescents between the ages of 9 and 17. During the study, the participants were exposed to accepting or rejecting messages from peers (who actually did not exist) in an online chat room. Overall, the researchers found that eye pupils were more dilated for rejecting statements. On self-report measures, the participants reported feeling significantly angrier, sad, and excluded when presented with rejecting statements. The authors also found that participants who were presented with rejecting statements were more likely to look away from themselves on the computer (there was a picture of

themselves and the person they were conversing with). According to Silk et al., this may suggest a coping mechanism. “Looking at the self when rejected may be associated with negative emotions such as shame, embarrassment, or anger” (p. 103).

Post-Traumatic Stress Symptomatology. While most individuals would not consider peer exclusion a traumatic event and a natural part of development, children and adolescents who experience this (especially daily) express similar negative symptomology as a result. For example, in a study of 387 undergraduate students, Lev-Wiesel, Nuttman-Shwartz, and Sternberg (2006) examined multiple factors and constructs and their predictive value of post-traumatic stress disorder (PTSD) symptomatology. Of the constructs examined, social peer rejection and an individual’s belief in social support were shown to be the strongest predictors of the severity of PTSD symptoms (Lev-Wiesel et al., 2006). In fact, 25% of the variance was explained by one’s belief in social support. Social peer rejection has also been shown to be a significant predictor of depression severity (Lev-Wiesel et al., 2006). Within this framework, Lev-Wiesel and colleagues suggested that peer rejection should be considered a traumatic event, especially in the lives of adolescents. One limitation of the study is that little information about the participants is included. For example, the authors did not report how many students were actually diagnosed with PTSD or another psychological condition. This information could be a confounding variable to the results.

Neural Impact. Thus far several psychological and social factors have been reported regarding the potential impact of peer rejection. These factors are likely most important for teachers and individuals working in the social sciences but research has also demonstrated the neural impact of rejection. For example, Masten et al. (2009)

examined the fMRI images of 23 adolescents who were rejected during their study by computer controlled opponents whom the participants thought were real. The participants were 12 and 13 years of age, 14 of which were female. The adolescents played two virtual games. In one game they were included in the activity by the computer controlled opponents and in the other game they were excluded in the activity. During both trials fMRI scans were acquired. The researchers found enhanced activity in the right ventrolateral prefrontal cortex, the subgenual portion of the anterior cingulate cortex, and the ventral striatum in the excluded group only. The latter portion of activation was not expected by the researchers. The ventral striatum is traditionally associated with reward processing (McClure et al., 2003) and emotional regulation (Wager et al., 2008) and has not been associated with activation during peer rejection in adult populations. The authors hypothesized that this region of the brain may be an important area for regulating negative affect during this developmental time period. This study highlights that adolescents who are excluded may display different neuronal activation compared to those not rejected.

Gene Expression. Social status among peers can also impact gene expression (Cole, 2009). For example, adults who felt more socially isolated showed different transcription profiles for their white blood cells (Cole et al., 2007). Because of this gene by environment interaction, socially isolated individuals were at a higher risk for viral infection and other diseases. This also extends to cancerous cells. Researchers have found that women with decreased levels of social support and increased depression had tumors that were regulated differently than women who did not have these risk factors (Lutgendorf, 2008).

Neutral Findings. Not all studies have shown significant correlations between peer rejection and negative outcomes. For example, Li (2007) found that peer victimization (in this case, cyberbullying) was not significantly related to academic performance. These results were found in 177 seventh grade students in Canada. However, Tokunaga (2010) suggested that this finding may not be typical because of methodological flaws in the study. Tokunaga highlighted the fact that academic performance was operationalized by students selecting one of the following options: above average, average, and below average. Li (2007) asked the students what their grades were “usually” (p. 1789). The term usually, according to Tokunaga, is ambiguous. Further, this three point scale is not an objective measure of academic performance. The adolescents may have just chosen options at random to pass time more quickly or “above average” to make themselves appear to be a better student.

The present literature base regarding the impact of peer rejection on social and emotional outcomes is noticeably skewed. The vast majority of the articles found in common search databases such as PsycINFO indicate a significant relationship between peer rejection and negative outcomes. This may be due to multiple reasons. The first potential reason for the lack of neutral or null findings is that the construct of peer rejection is actually related to multiple negative outcomes for children. The second potential reason is that researchers who find neutral or null findings do not publish their results. Researchers may feel as though publishing the findings are not useful or that the results may be misleading. Also, peer-reviewed journals typically publish significant findings over non-significant findings. This phenomenon is known as the file drawer problem (Rosenthal, 1979). This may be especially problematic for the field of peer

rejection because publishing such findings may result in backlash from others in the field (e.g., publishing research indicating that peer rejection is not a negative occurrence on a particular outcome measure). This noticeable lack of data is worth highlighting because the above review of the literature may be a biased perspective of the construct and the impact of various variables.

Summary of the Impact. As a summary, the literature presents the following potential impacts peer rejection can have on behavior. These include:

- Involvement with anti-social peers (Dishion et al., 1991)
- Dropping out of school and potential criminality (Parker and Asher, 1987)
- Academic performance (Fite et al., 2012; Miles & Stipek, 2006)
- Externalizing difficulties (Laird et al., 2001)
- Social Avoidance (Beeri & Lev-Wiesel, 2012)
- Smoking, anxiety, and global impairment (Mrug et al., 2012)
- Enhanced activity in the right ventrolateral prefrontal cortex, the subgenual portion of the anterior cingulate cortex, and the ventral striatum (Masten et al., 2009)

Because these factors have been associated with peer rejection, efficient measurement may be useful to appropriately screen for and determine contributing factors to rejection (Coie et al., 2000). Section five details some of these assessment measures and highlights potential strengths and weaknesses of the tools; however, before detailed information regarding assessment is presented, a brief section follows highlighting a group of children and adolescents who are at a higher risk for peer rejection - those with developmental disabilities.

Chapter III

Developmental Disabilities

A large body of research suggests that children and adolescents who have a developmental disability are at a higher risk for peer rejection when compared to typically developing youth (Dodge, 1986; Gomez & Hazeldine, 1996; Jacobs et al., 2002; Volkmar et al., 1997). The term developmental disabilities encompass a wide range of disabilities typically first observed in childhood and, in some cases, adolescence (American Association on Intellectual and Developmental Disabilities (AAIDD), 2013). These conditions can be caused by genetics, environments (e.g., teratogens), or a combination of both and are conditions that typically impair the functioning level of an individual during the lifespan. Developmental disabilities may include intellectual disabilities (ID), autism spectrum disorders (ASD), Fragile X Syndrome and other genetic conditions, Fetal Alcohol Spectrum Disorders, Hearing Loss, and Vision Impairments. The prevalence of developmental disabilities between the years of 1997 and 2008 was 13.87% (Centers for Disease Control and Prevention (CDC), 2013a) and developmental disabilities can be associated with significant stress among children and adolescents who have the diagnosis as well as their family members. Two of the more common developmental disabilities, ID and ASD, are described in more detail below including a section on the potential for increased risk of peer rejection.

Intellectual Disabilities

IDs are characterized by deficits in intellectual functioning and adaptive behavior (AAIDD, 2013; American Psychiatric Association, 2013). These deficits need to be present during childhood or adolescence and cannot be caused by external events such as

a traumatic brain injury. IDs range from mild to severe based on the intelligence quotient (IQ) of the individual and the level of adaptive behavior.

The prevalence of IDs globally is an estimated 10 out of every 1,000 individuals with higher rates in low income countries (Maulik, Nascarenhas, Mathers, Dua, & Saxena, 2010). Individuals with IDs may exhibit deficits in adaptive behavior and/or social functioning. These include the manifestation of aggressive behaviors (Cooper et al., 2009), difficulties in attaining or retaining employment (Taylor & Seltzer, 2011), deficits in peer interactions and academic problems (AAIDD, 2013), an increased prevalence of injuries and falls (Finlayson, Morrison, Jackson, Mantry, & Cooper, 2010), and deficits in self-help skills such as toileting or bathing (Matson & Lovullo, 2009).

Increased Risk for Peer Rejection. Individuals with an ID are at increased risk for peer rejection (Berkson, 1993). This increased risk may be due, at least in part, to deficits in three areas of social skills: interpreting situations, selecting strategies, and implementing strategies in social situations (Dodge, 1986; Jewell et al., 2011). These deficits tend to be more pronounced depending on the level of intellectual functioning and/or adaptive behavior skills.

Individuals in this population may be at higher risk for teasing and peer victimization. Bramston, Fogarty, and Cummins (1999) compared the responses on a survey assessing reasons for stress between 459 individuals with a mild or moderate ID to 135 typically developing undergraduate students. The ages for ID group ranged between 20 and 30 and the average age for the college population was 21.4. On their survey, 37% of individuals with ID reported victimization and 47% of being teased. The control group reported 25% and 30% respectively. In a separate study, Sheard, Clegg, Standen,

and Cromby (2001) found that around one out of ten individuals with ID experience bullying. The authors' sample included individuals between the ages of 20 and 26 with a profound ID. It is important to note that while the authors found one out of ten to be victims of bullying, one out of five were bullies themselves. This may be due, in part, to the profound level of ID within the sample.

The potential for increased risk of peer rejection includes adolescents. In a sample of 46 families who had a 13 year old child with ID and 91 who were typically developing, 52% of mothers and 62% of children with ID reported victimization. The rate for typically developing children and their parents was 41%. Although the rates were significantly different, the authors did not find a difference between chronicity (i.e., both samples experienced around the same number of bullying incidents). There was also no significant difference regarding the intensity. The authors also examined predictors for victimization and found that social skills problems and social withdrawal were significant predictors.

Autism Spectrum Disorders

ASDs are a spectrum of disorders in which individuals have significant impairments in social interactions, verbal and nonverbal communication, and stereotypic or repetitive behaviors (APA, 2013; Autism Speaks, 2013). According to the CDC, the prevalence for Autism is 1 in 88 children and is five times more likely to occur in boys than in girls (CDC, 2013b).

Individuals with an ASD frequently have a comorbid condition (up to 70%) of an intellectual disability (LaMalfa, Lassi, Bertelli, Salvini, & Placidi, 2004). Compared to individuals with ASD or ID, individuals with comorbid ASD and ID manifest higher

levels of aggressive behaviors (Farmer & Aman, 2011), employment difficulties (Hendricks, 2010), difficulties with peer interactions (Klin et al., 2007), academic problems (Estes, Rivera, Bryan, Cali, & Dawson, 2011), and deficits in adaptive behavior (Kanne et al., 2011).

Because of the increased prevalence and less stigmatization, educators, clinicians, and researchers may begin to see more individuals with developmental disabilities.

Adequate measurement of peer rejection may be helpful in order to deliver the appropriate services to these families. The following section presents the reader with the current state of assessment of peer social status in children and adolescents.

Increased Risk for Peer Rejection. Children and adolescents with an ASD are also at a higher risk for peer rejection. For example, within a sample of 192 parents of individuals between the age of 5 and 21 and diagnosed with ASD, “seventy-seven percent of parents reported that their child had been bullied at school within the last month, with 11% reporting victimization only once, 23% reporting victimization two or three times, 13% reporting victimization once per week, and 30% reporting victimization two or more times per week” (Cappadocia, Weiss, & Pepler, 2011, p. 269). Using a regression analysis, the authors found multiple significant predictors of peer victimization including age (with younger age predicting more victimization), communication difficulties, internalizing problems, parent mental health problems, and having fewer friends at school.

In a study examining the bullying statistics in 40 countries for adolescents (N = 202,056), the bullying rates were found to be between 8.6% and 45.2% for boys and 4.8% and 35.8% for girls (Craig et al., 2009). This suggests that individuals with ASD

may be bullied at a higher rate than those in the general population (77% vs. 4.8% to 45.2%). The rates of individuals with ASD who are bullied likely vary between studies based on the informant with teachers reporting significantly higher rates than student or parent reports (Chen & Schwartz, 2012).

The previous sections of the paper have exposed the reader to some of the correlates with peer rejection and the negative outcomes. Additionally the reader was introduced to a group of individuals who may be at higher risk for being rejected by peers. The next section highlights some of the interventions the field of psychology has developed in order to intervene on peer rejection.

Chapter IV

Interventions for Peer Rejection

Interventions focusing on the prevention and remediation of peer rejection tend to fall into two categories: targeting the system and targeting the individual(s) (Card & Hodges, 2008). The systems-level interventions tend to focus on changing the climate of a school or other institutions to reinforce prosocial behavior and provide consistent consequences for negative behaviors. In addition, other key personnel such as parents and teachers are trained in the model so that the system can be implemented across settings (Olweus, 1993; Smith, Schmedler, Smith, & Ananiadou, 2004). One specific example of this is Schoolwide Positive Behavioral Supports (Waasdorp et al., 2012). In a longitudinal study following 12,334 children from kindergarten to second grade, Waasdorp and colleagues implemented this schoolwide intervention in a randomized controlled trial and found that the program significantly decreased incidents of bullying and rejection.

While systems level change is preferable when attempting to prevent and intervene on peer rejection, there may be problems with this approach (Card & Hodges, 2008). These concerns include this approach requiring multiple individuals implementing the program, financial constraints, problems with staff and parent buy-in, and time constraints. As Card and Hodges note, because of some of the practical limitations to these system-wide approaches, other more individualized interventions should be used when necessary. More individualized approaches may focus on changing the rejected peer's social skill repertoire or interventions targeting the aggressor(s) (Boxer & Frick, 2008; Card & Hodges, 2008). One individualized approach is positive peer

reporting (Rathvon, 2008). This intervention is intended for students who may exhibit aggressive or hostile behaviors and/or verbalizations towards students by provoking them. This intervention is also appropriate for students who are being rejected by peers. During this intervention, students in the classroom provided compliments to their peers and received reinforcement similar to a token economy. The target student(s) have more opportunities to respond to practice their skills. For more on this intervention see Moroz and Jones (2002).

The individualized approaches may be helpful for children and adolescents experiencing peer rejection, but this approach has been criticized by some. According to Greene (2006), "...the bullying literature emphasizes a social ecological approach to reduce levels of bullying in a school, that is, bullying in a school can only be reduced if interventions are made on the individual, peer group, school, and family levels" (p. 1). While many researchers would likely agree that a systems level intervention is preferable, the literature (as highlighted earlier) presents many examples where significant change can occur at the individual level. In chapter 1, many evidence-based interventions for children were highlighted. A majority of the evidence-based interventions within the field of psychology are not focused on systems-wide change (Weisz & Kazdin, 2010). These include PCIT (Eyberg et al., 2001), child-focused treatment for anxiety (Kendall, 1990), group CBT for adolescent depression (Clark, Lewinsohn, & Hops, 1990), individual CBT for adolescent depression (Clarke et al., 2002), trauma-focused CBT (Jaycox et al., 2010), and intensive ABA therapy for children with autism (Lovaas, 1987). Some evidence-based interventions, do, however, emphasize systemic change such as Multisystemic Therapy for adolescents with antisocial behavior (Henggeler et al., 2009).

Although many of the highlighted interventions do not focus specifically on peer rejection, these interventions highlight both systemic and individualized evidence-based treatments for children that may both be realistic and efficient service delivery models.

Thus far in the proposal the reader has been introduced to the potential importance of focusing on etiological factors to understand phenomenon in Chapter 1, an area of social skills that may benefit from more research – peer social status in Chapter 2, a subset of individuals who may be at higher risk for peer rejection in Chapter 3, and finally a brief overview of some of the available interventions for children and adolescents who may be experiencing peer rejection in Chapter 4. Chapter 5 examines some of the available measures for peer social status and highlights some of the relevant strengths and weaknesses of the current available measures.

Chapter V

Measurement of Peer Social Status

The most common method used to assess peer neglect, rejection, and acceptance is the peer nomination system by Coie et al. (1982). Although Coie and colleagues did not create the original sociometric assessment of peer status among children, their approach is still widely used and they were the first to standardize the procedures and determine cut off criteria. Additionally, the authors suggested multiple behavioral indicators of peer status and suggested the creation of a new peer group within the nomenclature of peer status: the controversial child (high peer liking and high peer disliking). The procedure for identifying the social status of children as described by Coie, et al. includes children identifying who they like most and least in the classroom, and then identifying three children in the classroom who best fit behavioral descriptions. In the 1982 study, these behaviors included fighting, cooperating with others, disrupting classmates, and being a leader.

Since the procedures described by Coie and colleagues (1982) are the earliest attempts to standardize the procedures within the area of peer social status, their method for determining the different groups is worth quoting at length:

“The raw nominations for the liked most and liked least categories were tallied, standardized, and transformed into social preference and social impact scores... (a) The popular group consisted of all of those children who received a social preference score of greater than 1.0, a like most standardized score of greater than 0, and a like least standardized score of less than 0. (b) The rejected group consisted of all of those children who received a social preference score of less than -1.0, a like least standardized score of

greater than 0, and a like most standardized score of less than 0. (c) The neglected group consisted of all of those children who received a social impact score of less than -1.0 and an absolute like most score of 0. The neglected children, therefore, had no one identifying them as among the three people they liked most. They differed from the rejected children in that the rejected children received many nominations as liked least, whereas the neglected children did not. (d) The controversial group consisted of those children who received a social impact score of greater than 1.0 and who received like most and like least standardized scores that were each greater than 0. Thus, members of this controversial group were all above their class mean for both positive and negative sociometric nominations, (e) The average group consisted of all of those children who received a social preference score that was greater than $-.5$ and less than $.5$ " (p. 564).

The criteria for determining the various social categories within peer nomination differ among researchers (for a more complete review see Frederickson & Furnham, 1998). For example, some use a quadrant system (e.g., Peery, 1979; Sabornie, Marshall, & Ellis, 1990) while others use the traditional peer nomination method described by Coie et al. (1982). In addition to the peer nomination system, other measures assess for similar constructs within the realm of peer social status. These are listed below and are summarized in Table 1 following the measures. The measures below should not be considered all-encompassing since a multitude of measures assess constructs related to or similar to peer exclusion. These measures were chosen because of particularly relevant subscales or as a representation of similar measures. For example, the Achenbach System of Empirically Based Assessment is included in the review but many other similar broadband ratings scales exist. Many additional resources exist for interested

readers in this area including the *Mental Measurement Yearbook, Clinical Assessment of Child and Adolescent Personality and Behavior* (Kamphaus & Frick, 2009), and Boisjoli and Matson's (2009) chapter in *Social Behavior and Skills in Children*.

Social Rejection Scale. The Social Rejection Scale was created by Lev-Wiesel, Nuttman-Shwartz, and Sternberg (2006) in order to measure social rejection in undergraduate students. The measure was based on Asher, Rose, and Gabriel's (2001) social categories. It includes 21 self-report items such as "I was ignored" and the constructs are measured on a 5-point Likert scale. Limited information regarding validity evidence and score reliability is available for the measure. In fact, the only indication found for psychometric properties is a Cronbach alpha of .89 (Lev-Wiesel et al., 2006), which falls in the good range.

Achenbach System of Empirically Based Assessment. The Achenbach is a measure intended to measure child and adolescent social and emotional functioning (Achenbach & Rescorla, 2001). There are two versions: one for children (age one and a half to five) and one for older children and adolescents (age six to eighteen). The focus of this review will be on the teacher rating form. While the child version does not include a subscale for social problems, the adolescent version does. The Social Problems scale for adolescents is composed of 11 items which includes "Complains of loneliness" and "Gets teased a lot" as example items. The teacher rating form was normed on over 4,000 teachers, most of which were Caucasian (75%). The Cronbach alpha for the Social Problems scale of the teacher rating form was .82 and the test retest coefficient was .54 for two months and .38 for four months. The relatively low Cronbach alpha at four months may be due to problems in reliability, a change in topography of social problems

change over time, or that the problems tend to alleviate. For validity evidence, the Social Problems scale was correlated moderately ($p = .53$) with the Withdrawal subscale of the Behavior Assessment System for Children (BASC; Reynolds & Kamphaus, 1992). More broadly, the Achenbach has been shown to possess sufficient content, criterion, and construct validity evidence through a variety of different measures and decades of research (Achenbach et al., 2008; Achenbach, 2009; Berube, 2004; Janssen & Deboutte, 2009).

Child Behavior Scale. The Child Behavior Scale is a 59 item teacher rating scale intended to assess a child's social behavior in the classroom (Ladd & Profilet, 1996). The scale is composed of six subscales. These include Aggressive with Peers, Prosocial with Peers, Asocial with Peers, Anxious-Fearful, Excluded by Peers, and Hyperactive-Distractible. Of particular interest to the current paper are the Prosocial with Peers, Asocial with Peers, and Excluded by Peers subscales. Example items from the Prosocial scale include "Helps," "Concerned with distress," and "Cooperative with peers." For the Asocial scale, items such as "Prefers to play alone" and "Avoids peers" were included. Finally, Excluded by Peers examples were "Not much liked" and "Peers avoid this child." The measure was normed on two cohorts of kindergarten children and their teachers. The total N for the norm group was 412 children and 31 teachers. The internal consistencies for the subscales were adequate ranging from .87 to .96. Additionally, test retest reliability was determined by administering the measure between two cohorts with a four month interval. The stability of the scales ranged from .54 to .72. Concurrent validity was determined by correlating the measure with behavioral observations. The correlations ranged from low to moderate but fell within the expected direction.

Social Skills Tests for Children (SST-C). The Social Skills Tests for Children (SST-C) is a role-play assessment measure intended to assess various aspects of a child's social skills through several scenarios (Williamson, Moody, Granberry, Lethermon, & Blouin, 1983). During the assessment a narrator reads the child 30 scenarios and rates their reaction to the prompt. For example, this is the scenario for the Assertiveness domain: "Narrator: You brought a pencil to school and one of the boys breaks it. He laughs and says---Prompt: Ha, Ha, I broke your pencil" (p. 468). The responses of the child are rated on different criteria (which were videotaped in the study) including smiling, eye contact, and tone. Interrater reliability for these criteria are primarily above .85, but one of the criteria termed Overall Skill Rating was a .75. Although this measure presents practitioners and researchers with a novel way to assess for social skills and peer relationships, Williamson et al. (1983) found that the measure had questionable criterion-related validity when compared to multiple ratings scales with most coefficients below .2.

PLAY Observational Assessment. PLAY is a play-based assessment tool intended to determine a child's cognitive and social functioning (Farmer-Dougan & Kaszuba, 1999). During this assessment procedure, 42 pre-school children were observed during free play time based on multiple criteria (for all of the criteria used, see Farmer-Dougan & Kaszuba, 1999, Appendix A). These criteria included solitary, parallel, and cooperative play. The PLAY assessment tool was administered in addition to the Battelle Developmental Inventory (Newborg et al., 1984) and the Social Skills Rating Scale-Teacher Form (Gresham & Elliot, 1990) to determine validity. Mean interrater reliability ranged from 80 to 100% with a mean of 92%. A regression analysis was performed in order to determine if the PLAY observations significantly predicted

scores on the Battelle and the Social Skills Rating Scale. Both of the regressions were significant in predicting these outcomes indicating at least emerging validity with a multiple R of .458 ($p = .002$) for the Battelle and .413 ($p = .007$) for the Social Skills Rating Scale.

Home and Community-Based Social Behavior. The Home and Community-Based Social Behavior scale is a 64 item scale for parents of children and adolescents between the ages of 5 and 18 (Coladarci, 2013; Merrell & Caldarella, 2002). The measure uses two broad scales, Social Competence and Antisocial Behavior and takes the user around 10 minutes to complete. The Social Competence scale is most important for the current review and includes two subscales: Peer Relations and Self-Management/Compliance. The Peer Relations scale is intended to measure belongingness to a peer group and how liked the child or adolescent is by other peers. The Self-Management/Compliance scale is intended to measure how a child or adolescent responds to social expectations by others. All items are rated on a 5-point Likert scale based on how frequently the behavior occurred in the previous three months. The scores are converted to t-scores and clinicians are also provided with percentiles. The norming group included 1,562 individuals that were representative of the U.S. population. Split-half reliability and coefficient alphas for the subscales across ages range from .91 to .97. Test-retest reliability ranges from .82 to .91 depending on the scale. The manual reports multiple correlations between relevant measures to demonstrate convergent and discriminant validity (including the Child Behavior Checklist and the Social Skills Rating System). The correlations are within the moderate to high range with all above .6.

Social Skills Improvement System. The Social Skills Improvement System (SSIS) is a rating scale designed to measure social skills important for the school environment (Doll & Jones, 2013; Gresham & Elliott, 2008). The SSIS contains two forms, one for ages 8-12 and the other for 13-18, both of which can be completed by the student, teacher, and parents. The items include a 4-point scale ranging from never to almost always regarding behaviors. The measure takes between 15 and 20 minutes to complete. The current version of the test was normed on 4,700 students and the demographics were based on the 2006 U.S. census. The measure includes four broad scales: The Social Skills scale, Behavior Problems, Autism Spectrum, and Academic Competence. The Social Skills scale is intended to assess a student's positive social behaviors. Coefficient alpha for the Social Skills scale ranged from .83 to .97 for the teacher version, .74 to .96 for the parent form, and .72 to .95 for the student form. Test-retest reliability ranged from .79 to .83. The manual reports moderate to high correlations (depending on the subscale) with related measures such as the SSRS (.46-.89), BASC-2 (.44-.90), and the Vineland Adaptive Behavior Scales, Second Edition (.48-.64; Vineland-II; Sparrow, Cichetti, & Balla, 2005, 2006).

Direct Observations. In addition to rating scales and peer nominations, researchers have also assessed for peer acceptance through direct observations based on specific behavioral criteria (Wood, Cowan, & Baker, 2002). Wood and colleagues had observers watch and record data for children in a classroom for five second intervals. The names on the observer's list were randomized and for each five second interval the observer coded a child based on six criteria. These included appropriate social or rule following behavior, prosocial behavior (e.g., sharing), noncompliance (rule breaking),

aggression (such as hitting or kicking), appropriate-solitary (watching other children play), and solitary-disengaged (alone and doing nothing related to what the other children in the classroom were doing). For the study, the authors determined it was most appropriate to combine the appropriate-solitary category with solitary-disengaged. Because the time sampling was so brief, the researchers were able to collect multiple snapshots of the child's behavior in the classroom (an average of 163 intervals for each child). The kappa value for the interrater reliability ranged from .74 to .93.

The Strengths and Difficulties Questionnaire (SDQ). The SDQ is a brief continuous rating scale intended to screen for difficulties in social skills and problem behaviors (Goodman, 1997). The SDQ will be detailed more than other measures because the current project utilizes the measure. The SDQ has a self, parent, and teacher rating form but only the parent form will be used for the current project. Four subscales form the composite scale termed the Total Difficulties score. These scales are emotional symptoms, conduct problems, hyperactivity/inattention, and peer relationship problems. Another subscale, prosocial behaviour, is included in the measure but does not add to the Total Difficulties score. Each of the subscales is five items which combines into a 25 item measure. There are two forms, one for children aged 4-10 and one for adolescents aged 11-17.

The norming group in the United States included 9,878 individuals during the 2001 National Health Survey. The measure has established psychometric properties including an average Cronbach alpha of .70 (Goodman, 2001; Muris, Meesters, & van den Berg, 2003) with the Total Difficulties composite score demonstrating a .84 Cronbach alpha. Test-retest at four and six months for the measure is also in the

acceptable range (.62; Goodman, 2001) and the measure appears to have strong convergent and discriminate validity. For example, the composite score has been shown to be significantly correlated with the Child Behavior Checklist Total Score ($r = .70$; Goodman, Ford, Simmons, Gatward, & Meltzer, 2000; Muris, Meesters, & van den Berg, 2003).

Critique of Existing Measurement

An overview of the measures reviewed and the constructs they assess within the area of peer social status are included in Table 1.

Table 1

Existing Measures of Peer Social Status

Measure	Age Group	Form	Construct
Peer Nomination (Coie, Dodge, & Coppotelli, 1982)	3 rd , 5 th , 8 th grade	Peer	Popular, Rejected, Neglected, Controversial, Average
Social Rejection Scale (Lev-Wiesel, Nuttman-Shwartz, & Sternberg, 2006)	Undergraduate Students	Self	Social Rejection
Achenbach System of Empirically Based Assessment	1 ½-5; 6-18; 18-59; 60-90+	Self, Parent, Teacher	Social Problems

(Achenbach &
Rescorla, 2001)

Child Behavior Scale (Ladd & Profilet, 1996)	4-6	Teacher	Prosocial with Peers, Asocial with Peers, Excluded by Peers
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Social Skills Tests for Children (Williamson, Moody, Granberry, Lethermon, & Blouin, 1983)	2 nd – 6 th grade	Self	Assertiveness
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PLAY Observational Assessment (Farmer-Dougan & Kaszuba, 1999)	3-5	Direct Observation	Social Functioning
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Home and Community-Based Social Behavior	5-18	Community Rater	Peer Relations and Self-Management/ Compliance
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(Merrell &

Caldarella, 2002)

Social Skills Improvement System (Gresham & Elliott, 2008)	8-12; 13-18	Self, Teacher, Parent	Social Skills
Direct Observation (Wood, Cowan, & Baker, 2002)	3-5	Direct Observation	Prosocial Behavior, Appropriate-Solitary, Solitary-Disengaged
Strengths and Difficulties Questionnaire (Goodman, 1997)	4-10; 11-17	Self, Teacher, Parent	Peer Relationship Problems, Prosocial Behaviour

A majority of the research examining the construct of peer social status uses a version of peer nomination delineated by Coie et al. (1982). Using this measurement technique, researchers and clinicians are better able to understand a child's social status based on five social groups: popular, rejected, neglected, controversial, and average. One criticism of the existing measurement of peer social status, and the one most salient to the current paper, is that no current measures assess for the etiology of peer rejection. This

information has potential to be of value when screening children for potential difficulties with peer status. As highlighted in chapter 1, determining the etiology of a phenomenon can be important in altering the phenomenon's trajectory or manifestation (Coie et al., 2000; Mrazek and Haggerty, 1994). The current measurement tools available provide individuals with a sense of the current situation and potential problem behaviors in the present (e.g., who would you like to play with at this moment), not necessarily how these problems developed or contributing factors. While it is certainly difficult to pinpoint one specific cause of peer rejection, assessment of etiological information may provide clinicians with additional data to inform intervention. Research and practice within the field of peer social status may benefit from the assessment of etiological data in addition to topographical data. Measures that assess etiological data would expand on the literature base by providing clinicians and researchers with an ecological perspective on the phenomenon (Bronfenbrenner, 1977). Assessing etiological information also may better inform intervention and prevention strategies (see Chapter 1) by providing clinicians with potential targets for programs.

Chapter VI

Purpose of the Study

The current study aims to add to the peer social status literature by developing and validating a brief parent rating scale for children to assess the etiology of peer rejection. The measure included in this study is intended for use with clinicians and researchers interested in assessing the etiology of peer rejection with a brief instrument.

Understanding the etiology of a problem for children may be beneficial in understanding, changing, and eventually preventing it (Coie et al., 2000; Mrazek & Haggerty, 1994). This has been highlighted in evidence-based interventions created for children with ADHD (Fabiano et al., 2009), anxiety (Kendall, 1990), and disruptive behavior disorders (Eyberg et al., 2001) among other problems. Although the field of evidence-based interventions for children has made large strides in the past, more work needs to be done for other disorders and problem areas for children (Weisz & Kazdin, 2010) including children who have been rejected by peers. The current study aims to inform clinicians of the etiology associated with a child being rejected by peers through the creation of a new measure, the Causes of Peer Rejection Scale (CPRS). There are many factors that may lead a child to being rejected by peers including attractiveness (Coie et al., 1982), speaking ability (Laws et al., 2012), and externalizing behaviors such as breaking rules (Fite et al., 2012). This information may be important when considering which intervention(s) to use for children rejected by their peers and is included within the measure.

Theoretical Underpinnings of the Proposed Measure

The goal of the CPRS is to obtain etiological information to inform individualized intervention. The measure is based on the theoretical assumption that peer rejection is caused by factors within the child, the environment, and broader socio/cultural factors. The CPRS focuses on factors where intervention is potentially useful (e.g., an educator could deliver a psycho-educational talk to other students instructing them about genetic conditions but they would likely be unable to change a cultural norm). These factors are highlighted by relevant literature found in Chapter II. The relevant areas identified in the literature make up the five hypothesized factors of the scale: Appearance, Speech, Problem Behaviors, Academics, and Social Skills.

Research Questions

The primary focus of the study was to develop and refine the CPRS and determine the psychometric properties; therefore, the research questions targeted score reliability, validity evidence, and the factor structure of the measure. The specific research questions for the study are presented below:

1. Are the five hypothesized scales for the CPRS an adequate fit for the structure of the measure?
2. Does the CPRS demonstrate sufficient Cronbach Alpha reliability?
3. Does the CPRS demonstrate sufficient test-retest reliability?
4. Does the total score of the CPRS correlate with social and emotional problems?
5. Which subscales of the CPRS are related to the most negative social and emotional outcomes for children with intellectual and/or developmental disabilities?

6. What percentage of variance do the subscales of the CPRS account for in social and emotional outcomes for children with intellectual and/or developmental disabilities?

Chapter VII

Methodology

The development and validation of the CPRS was a two-phase process. Phase I included item development and refinement. The second phase of the study included validation of the measure and answering relational and predictive hypotheses. Since the CPRS is unique in that it focuses on etiological factors related to peer rejection, a systematic process may be beneficial in item creation and measure development.

Phase I: Development and Refinement

Gershon et al. (2012) proposed the following steps when creating a measure: “(1) identification of extant items results in the creation of the...item library; item classification and selection; (2) item classification and selection, (3) item review and revision, (4) cognitive interviews...to assess...understanding of individual items and (5) field testing” (p. 478). This systematic process was used as a model for the creation of the CPRS. The first four steps were conducted during phase I of the project. Step five included formal hypotheses testing and validation of the measure during phase II.

Step 1. Step one involved identification of relevant items from reviewing the literature base and creating an item bank. Multiple relevant items were identified for use in the measure. This process included an extensive literature review within the field of peer social status and compiling items that are relevant for the CPRS.

Step 2. Step two involved classifying items and selecting them based on the constructs used. Items were identified that would hypothetically load onto the five latent factors: rejected because of Appearance, Speech, Problem Behaviors, Academics, and Social Skills.

Steps 3 and 4. Steps three and four were conducted at the Mental Health and Mental Retardation Agency of Harris County (MHMRA) STARS clinic. The MHMRA STARS clinic is a community mental health outpatient agency located in Houston, Texas. The STARS clinic specifically provides therapy and psychopharmacological services to individuals with intellectual and developmental disabilities and their families. Research assistants administered a preliminary version of the measure and conducted interviews with parents after the administration. Parents were asked if they wanted to participate in the study after their therapy session. Parents who agreed were taken to a confidential room where the measure was administered. The goal of the interviews was to obtain parent feedback regarding readability and item relevance.

Inclusion and exclusion criteria. Parents with children who have an intellectual and/or developmental disability from 4 to 10 years old were eligible for the study. The child also needed to have significant problems with peer interactions. In order to screen for this, questions were administered at the beginning of recruitment to determine if parents were eligible for participation. The first question ascertained how often their child was rejected per week. The second question inquired about the severity of the peer rejection.

Parents were asked the following questions after they had completed the measure:

1. Was the survey difficult to understand? If so, why?
2. Does this survey have the potential to accurately measure the reasons your child is rejected by peers? If not, why?
3. Were any of the individual questions difficult to understand? If so, which ones?
4. Anything else you would like to see changed or added to the measure?

The CPRS was modified based on responses to more accurately represent etiological factors related to peer rejection.

Step 5. The final step for the development process was field testing. This is where specific hypotheses regarding the psychometric properties of the instrument were analyzed. Details regarding this process are described below.

Phase II: Validation

Participants and Setting. Institutional Review Board (IRB) approval was obtained before beginning steps 3, 4, and 5 of the project. Participants for the study were recruited from multiple locations: MHMRA, referrals from parents, Facebook, and other institutions who serve children with intellectual and/or developmental disabilities. Informed consent was obtained (see Appendix C) and parents were encouraged to ask questions before completing the surveys.

Inclusion and Exclusion Criteria. The same inclusion and exclusion criteria during phase I were used for phase II.

Time Commitment and Reimbursement. The materials were anticipated to take parents between 20 and 45 minutes to complete and parents were entered to win one of two \$25 Target gift cards by providing their choice of contact information (either an e-mail or mailing address if they do not have internet access). The contact information collected for this project was separate from the research forms (i.e., a separate online survey and a separate piece of paper not connected with responses).

Sample Size. The goal of phase II was to obtain at least 150 parents to run the appropriate analysis. Using Crocker and Algina's (2008) rule of thumb for sample size for confirmatory factor analysis, 10 participants should be used per indicator. The

current proposed assessment has 30 items, which would mean 300 participants would be required based on this argument. Although rule of thumb recommendations are used to determine sample sizes in papers, MacCallum, Widaman, Zhang, and Hong (1999) note that these recommendations are not useful. This is due to multiple factors that must be considered when conducting a factor analysis. For example, when communalities are all above .6, sample size matters less for model fit. As communalities decrease, sample size has more of an impact. MacCallum and colleagues state that a sample size with 300 or more is only necessary when the scale has a small number of factors and few indicators (e.g., three or four). Of the hypothesized five subscales for the CPRS, only the Social Skills subscale has relatively few indicators with four. It is important to note that the recommendations MacCallum et al. provided are for exploratory factor analysis (EFA) and not confirmatory factor analysis (CFA); however, the authors note that these recommendations likely apply to CFA as well. The lower number of 150 participants as a minimum was adopted because it is a realistic goal based on the relatively narrow inclusion criteria (i.e. parents of children with an intellectual and/or developmental disability who are rejected by peers) and the inclusion of phase I assisted in identifying problematic items before the formal analyses were conducted.

Recruitment. Parents from Facebook groups and other organizations related to autism spectrum disorders, parenting, bullying, peer rejection, and other areas were recruited. The lead researcher posted a recruitment script (found in Appendix E) to these groups or contacted leaders within the groups to share the survey. A total of 575 groups or organizations were contacted about the project (see Appendix F). Parents who

completed the survey were encouraged to pass the survey along to other parents who may wish to complete it.

Measures

The CPRS. The primary measure for the current project is the CPRS. The full measure can be found in Appendix B. The development of the CPRS included examining other measures that assessed similar constructs (many of the ones included in the earlier review), identifying relevant indicators and subscales from an extensive literature review, and attempting to create a measure that assessed the etiology of peer rejection instead of limiting the focus to only the topography of the existing constructs. The goal of the measure is to assist clinicians and researchers in the identification of etiological factors related to peer rejection and to inform intervention.

In this regard, the CPRS should be primarily seen as a measure to determine appropriate intervention(s) for children who are rejected by peers. While the measure can certainly be used as a screening instrument, the understanding is that researchers and clinicians (same note as above) have already determined that that the child is being rejected by peers and that an appropriate intervention is necessary. This explains the etiology focused nature of the measure. The CPRS aims to answer the question “why” instead of “what”.

The Strengths and Difficulties Questionnaire (SDQ). The SDQ was reviewed in detail earlier in this document (see Chapter V). The SDQ was selected for the current project for three reasons: the measure contained the constructs of interests, measures the constructs efficiently, and has adequate psychometric properties. Of particular interest to the current project were scales for Peer Problems, Prosocial Behaviour, and the Total

Difficulties score which represents a more global measure of social/emotional functioning. The SDQ can be administered in 10 minutes or less which lessens the time parents would need to complete the forms for the current proposal. The complete parent rating form for children ages 4-10 can be found in Appendix B.

Demographic Form. In addition to the CPRS, participants also received a demographic form (also included in Appendix B). The demographic form contained items regarding sex, ethnicity, age, IQ, and diagnostic information for their child.

Chapter XIII

Results

The results section is divided between phase I (parent review) and phase II (validation and hypothesis testing).

Phase I

Demographics. A total of four parents completed the measure and provided feedback to the research assistants at MHMRA during phase I. The demographics for the parents are included in Table 2 below:

Table 2

Focus Group Demographics

	Age	Child's Age	Sex	Child's Sex	Ethnicity	Child's Diagnosis
Parent 1	27	7	F	M	Hispanic or Latino	ASD, ADHD, SI
Parent 2	55	10	F	M	African American or Black	ID, ASD, LD
Parent 3	46	8	M	M	Caucasian or White	ASD
Parent 4	25	6	F	M	African American or Black	ASD, ADHD

Note. ASD = Autism Spectrum Disorder; ADHD = Attention Deficit Hyperactivity Disorder; SI = Speech Impairment; ID = Intellectual Disability; LD = Learning Disability

The average age of parents participating in the focus group was 38.25 with most parents being female and all of the children being male. Each of the children had an autism spectrum disorder diagnosis and three of the four children had an additional diagnosis. It is important to note that the diagnoses are parent-reported diagnoses and not confirmed by a treatment provider or records review.

Results. The variability of the items appeared to be acceptable upon visual inspection. The Appearance subscale was the exception. This lack of variability is somewhat expected within the subscale because of the population targeted (e.g., autism spectrum disorders and not Fragile X). Parents tended to endorse the full range of options (1-5) in the other subscales. Parents did not report that any items were difficult to understand; however, they did have feedback regarding additional content. No feedback was provided for the Appearance and Academics subscale but specific recommendations were made for the Speech, Problem Behaviors, and Social Skills subscales.

Two parents indicated that their child was non-verbal during the Speech subscale. The parents stated that their child was “pretty much non-verbal and rarely engaged” and “non-verbal, makes sounds with hands and wants other to play with him.” These comments were determined to be significant enough to modify the measure. An item was not initially included for parents to express that their child was non-verbal. The following item was added to incorporate parent feedback: Your child is rejected by peers because he or she does not respond to peers with words.

Parents reported specific events when asked about modifications to the Problem Behaviors subscale. For example, one parent reported that their child wanted to play patty-cake. The addition of specific events such as this would likely not be a good fit for inclusion in the measure because of its narrow application. Another parent reported that their child was rejected “because he doesn’t understand the rules of the game.” This reason would likely be encompassed with two already existing items:

1. Because he or she lacks the skills to play games with others.
2. Because he or she has difficulties taking turns.

Finally, one parent had feedback for the Social Skills subscale. They reported that “he gets mad when he doesn’t get his way.” This behavior is likely already encompassed in an existing item: because he or she has tantrums; however, another parent reported that apathy played a key role in their child’s rejection. This was an important components absent from the original version of the measure. Children with autism can lack emotional salience which could result in others interpreting their behavior as apathetic (Kleinhans et al., 2010). This parent feedback led to the inclusion of an additional item: Because he or she does not appear to care for other people’s feelings.

In summary, two additional items were added based on parent feedback of the measure during phase I. These items were added to the Speech and Social Skills subscale. The focus group responses were encouraging given that item responses ranged the full range of the responses (with the exception of the Appearance subscale). The version of the CPRS used during phase I can be found in Appendix A. The modified version of the measure after the implementation of parent feedback can be found in Appendix B.

Phase II

Demographics. A total of 258 parents began the survey and 190 completed it (74%). One hundred and fifty-five parents met the inclusion and exclusion criteria and provided valid responses to the survey (60%). Surveygizmo, the online survey tool used to administer the measures, reported that the average completion time of the online survey was around seven and a half minutes. The average age of the participating parents was 37.33 years (n = 153, ranging between 25 and 66,) with the majority being female

(92%). Two parents did not report their age. The average age of the children reported on was 7 with the majority being male (74%). A summary of the parent ethnicities are reported below from most to least.

Table 3

Phase II Parent Ethnicity

Ethnicity	N	% of Participants
Caucasian or White	139	90
Hispanic or Latino	5	3
Asian, Asian American, or Pacific Islander	3	2
American Indian or Native American	3	2
Biracial/Multiracial	3	2
African American or Black	2	1
Total	155	100

The majority of the parents reported being Caucasian or White (90%) followed by Hispanic or Latino (3%), Asian, Asian American, or Pacific Islander (2%), American Indian or Native American (2%), Biracial/Multiracial (2%), and African American or Black (1%).

Surveygizmo also tracked referral data and reported the referral source for most, but not all, of the participants. The majority of the participants completed the survey through a Facebook link (n = 132, 85%). Five hundred and seventy-five parents' groups and organizations were contacted regarding posting the survey to either their Facebook page, newsletter, or website. It is not surprising that most of the participants found the

survey through Facebook as many groups and organizations communicate with their followers via social media. Three of the participants found the survey through Autism Speaks (2%) with the rest being unknown but likely through social media outlets (n = 20, 13%).

The average subscale score for the Peer Problems subscale on the SDQ was 6.21. This falls within the very high range (Goodman et al., 2000; Goodman & Goodman, 2009). This suggests that the children reported on in the current sample are having frequent and severe peer problems when compared to their same-aged peers.

Results. The following section separates the results of phase II by research question. The first was answered with Mplus version 6.11 and the remaining research questions were answered using SPSS version 20.

1. Are the five hypothesized scales for the CPRS an adequate fit for the structure of the measure?

A CFA was conducted to determine if the hypothesized scale structure of the CPRS was a good fit based for the data collected. The analysis was forced to a five factor model to determine if this factor structure is appropriate. CFA was initially used instead of EFA because the measure was created with a specific hypothesis. Although many researchers have made recommendations regarding when to use CFA or EFA, most agree that if an a priori hypothesis exists for the structure of the measure, CFA should be used (Crocker & Algina, 2008). Exploratory factor analysis would have been more appropriate for the initial analysis if the CPRS was created without any prior hypothesis about the potential factor structure. More specifically, the hypothesis was that items 1-8 would load onto the Appearance factor, 9-16 would load onto Speech, 17-22 would load

onto Problem Behaviors, 23-27 would load onto Academics, and 28-32 would load onto Social Skills. Table 4 below lists the hypothesized factor loadings based on item number.

Table 4

Hypothesized Factor Loadings for the Causes of Peer Rejection Scale

Subtest	Items	Factors				
		1	2	3	4	5
Appearance	1-8	X	0	0	0	0
Speech	9-16	0	X	0	0	0
Problem Behaviors	17-22	0	0	X	0	0
Academics	23-27	0	0	0	X	0
Social Skills	28-32	0	0	0	0	X

Jackson, Gillaspy, and Purc-Stephenson (2009) provided reporting practices and recommendations for conducting a CFA. The authors reported that the most commonly used method to determine the distributional assumptions of the estimation is maximum likelihood. This was used in addition to the variance-covariance matrix to analyze the data. How well the factors fit the data was determined by using the RMSEA index and the chi-squared goodness-of-fit test. Hu and Bentler (1999) recommended a cutoff value of .06 for RMSEA so this cutoff point was used in addition to the significance of the chi-squared goodness of fit test to determine model fit. In addition to the RMSEA index, CFI and TLI indices were used with $\geq .95$ for both being the determinant for an acceptable fit for the data (Schreiber, Nora, Stage, Barlow, & King, 2006).

The results of the CFA are reported below:

Table 5

Goodness-of-Fit Indicators of Five Factor Model (N = 155)

Model	X^2	df	X^2/df	CFI	TLI	RMSEA
Five Factor	975.91	459	2.13	.71	.69	.09

 $p = .0000$

The goodness-of-fit indicators indicated that the five factor solution for the measure was not a good solution. Each indicator did not fall in the expected range. An EFA was then conducted to determine the appropriate model fit for the data. This is justifiable because although a priori knowledge exists of the factor structure, the development of a scale focusing solely on the etiological features of peer rejection has never been created.

Items were examined based on correlations with other items prior to conducting the EFA. Field (2009) reports that items should have neither too low (lower than .3) or too high (greater than .8) correlations with other items. This is both to ensure that items are both measuring the same construct and to avoid high multicollinearity. No items had a correlation of .8 or above; however, multiple items appeared to have relatively low correlations with other items. Nine total items had either zero, one, or two other items that correlated above .3. These items tended to be items with high specificity upon visual inspection. The items are included below:

Table 6

Items Correlated at Least .3 with Zero, One, or Two Other Items

Item (Your child is rejected by peers...)	Hypothesized Subscale
Because of his or her teeth	Appearance
Because of his or her ears	Appearance
Because he or she wears glasses	Appearance
Because he or she wears braces	Appearance
Because he or she has a lisp	Speech
Because he or she stutters	Speech
Because he she has an overly high pitch (e.g., sounds like he or she is talking through their nose)	Speech
Because he or she mumbles	Speech
Because he or she performs better academically than other children	Academics

Four items were in the hypothesized Appearance subscale, four in Speech, and one in Academics. No items in the Behavior or Social Skills subscales appeared to be inadequately correlated with other items on the scale. The only item that did not appear to be overly specific may not have been as relevant with a sample of intellectual and/or developmental disabilities. This item inquired about being rejected because of performing better academically than other children. Additionally, other items appeared to be just as specific but still correlated above .3 with more than two other items on the scale (e.g., rejection because of hair and weight). One hypothesis is that although these

items are still relatively specific in nature they may be frequent targets of peer rejection and therefore more consistently endorsed by caregivers. The nine items listed in Table 6 were discarded from the scale and an EFA was used to determine the factor structure of the remaining 23 items with an orthogonal (varimax) rotation.

The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, $KMO = .79$ (Hutcheson & Sofroniou, 1999). Bartlett's test of sphericity $X^2(253) = 1700.00, p < .001$, indicated that correlations between items were sufficiently large for principle component analysis. An initial analysis was run to obtain eigenvalues for each component in the data. Six components had eigenvalues over Kaiser's criterion of 1 and in combination explained 68.16% of the variance. Visual analysis of the scree plot revealed that no more than six components should remain. See Figure 1 below.

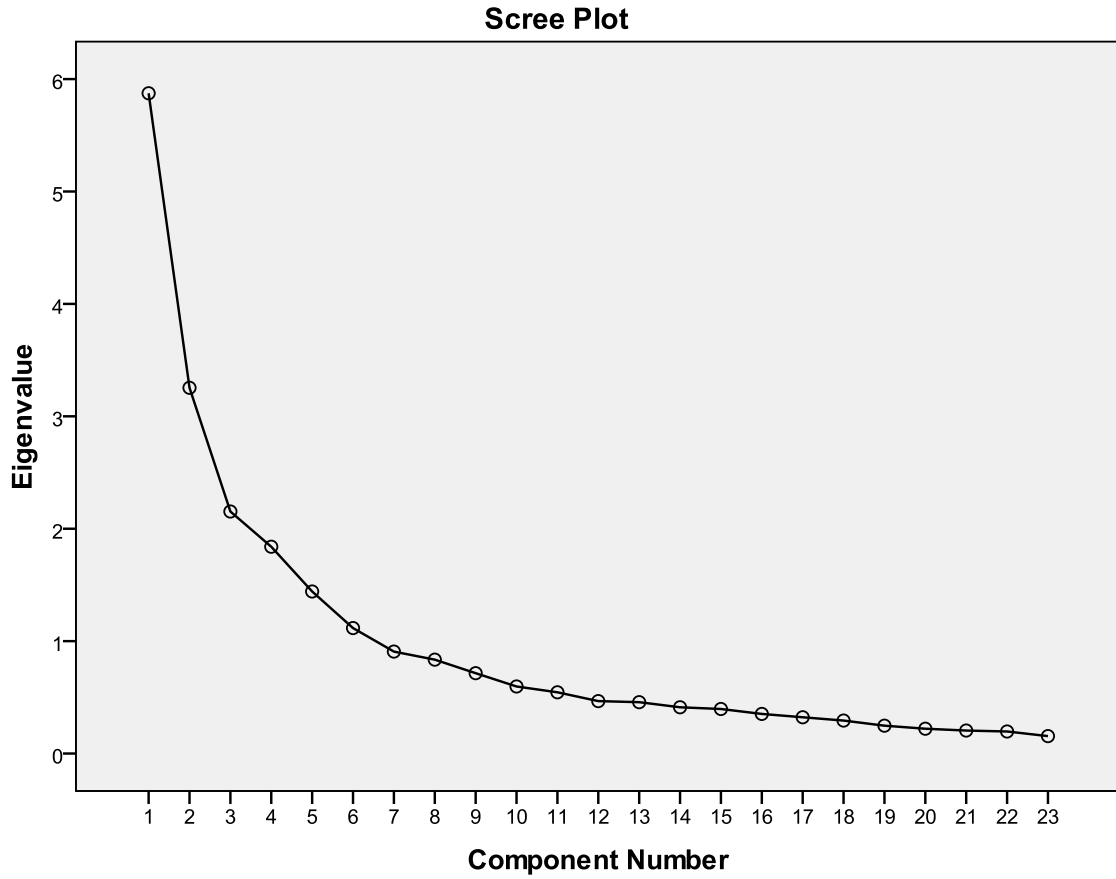


Figure 1. Scree Plot for Initial EFA

Table 7 shows the factor loadings after rotation. Please note that for spacing purposes the items are abbreviated. These items correlate to the numbered item in the scale in Appendix B.

Table 7

Summary of Initial EFA Results (N = 155)

Item	Rotated Factor Loadings					
	1	2	3	4	5	6
App2	.15	.07	.24	-.08	.73	-.31
App4	.14	.26	.09	-.03	.70	.26
App5	-.02	.16	.22	.05	.71	.25
App8	.04	.08	.03	.04	.16	.90
Spc4	.11	.71	.21	.02	.07	.11
Spc6	.04	.75	.13	-.04	.27	.06
Spc7	-.04	.87	.08	.01	.18	-.03
Spc8	.70	-.34	.06	.04	-.14	.11
Beh1	.14	-.14	-.11	.75	.11	.16
Beh2	.43	.57	.14	.38	-.24	-.03
Beh3	.42	.42	.12	.48	-.15	-.16
Beh4	.12	.21	.14	.77	-.13	.05
Beh5	.03	-.12	.11	.80	.12	-.11
Beh6	.31	.26	.24	.57	-.25	.02
Aca1	.12	.11	.82	.03	.18	-.08
Aca2	.07	.23	.80	.01	.33	.03
Aca3	.03	.04	.80	.04	-.07	.12
Aca4	.06	.16	.75	.25	.18	-.05
SS1	.72	.19	.02	.15	.01	.2

SS2	.82	-.06	.13	.02	.09	.05
SS3	.71	.10	.02	.15	.26	-.19
SS4	.77	.23	.08	.17	.13	-.08
SS5	.76	.08	.02	.12	.00	-.02
Eigenvalues	3.91	2.87	2.87	2.66	2.13	1.24
% of variance	17.00	12.47	12.46	11.56	9.28	5.40

Note: App = Appearance, Spc = Speech, Beh = Behavior, Aca = Academics, SS = Social skills. Factor loadings over .40 appear in bold.

The sixth component only had one item with greater than a .40 loading and accounted for 5.4% of variance. Therefore, the model was forced into a five-factor solution. The results of the forced model is reported in Table 8.

Table 8

Summary of Forced Five-Factor EFA Model (N = 155)

Rotated Factor Loadings					
Item	1	2	3	4	5
App2	.20	.41	.08	-.24	.45
App4	.16	.16	.21	-.08	.73
App5	.00	.29	.14	-.01	.72
App8	.00	-.11	.05	.17	.61
Spc4	.10	.19	.71	.05	.12
Spc6	.05	.16	.75	-.05	.27
Spc7	-.03	.11	.87	.00	.16
Spc8	.68	.01	-.35	.08	-.09
Beh1	.14	-.11	-.16	.73	.22
Beh2	.42	.10	.56	.42	-.20
Beh3	.42	.12	.41	.49	-.19
Beh4	.11	.11	.19	.79	-.05
Beh5	.04	.15	-.13	.74	.08
Beh6	.30	.19	.25	.62	-.19
Aca1	.13	.84	.11	.03	.07
Aca2	.08	.82	.23	.01	.26
Aca3	.01	.74	.04	.11	-.05
Aca4	.06	.77	.16	.25	.10
SS1	.71	-.02	.18	.19	.10

SS2	.82	.12	-.07	.03	.08
SS3	.73	.09	.10	.08	.12
SS4	.77	.11	.23	.10	.07
SS5	.76	.02	.08	.12	-.01
Eigenvalues	3.91	3.03	2.84	2.76	2.02
% of	17.01	13.18	12.36	12.00	8.80
variance					

Note: App = Appearance, Spc = Speech, Beh = Behavior, Aca = Academics, SS = Social skills. Factor loadings over .40 appear in bold.

The items that clustered on the same components suggested that the original hypothesized factor structure is congruent with the data. Component 1 represents rejection because of Social Skills, component 2 Academics, component 3 Speech, component 4 Problem Behavior, and component 5 Appearance. Three items had factor loadings of greater than .40 on multiple components. Appearance item number two, rejected because of his or her hair, loaded on both Academics and Appearance. Since rejection because of hair does not appear to be related to Academics, it was determined that the item is best represented on the Appearance component. Problem Behavior item number two, rejected because he or she has difficulties taking turns, loaded greater than .40 on Social Skills, Speech, and Problem Behavior. The highest loading of the three was on Speech; however, from a theoretical perspective, the item is most congruent with Social Skills over Problem Behavior and Speech. Because of this, the item was changed from the behavior component to social skills. Problem Behavior item number three, rejected because he or she has tantrums, loaded greater than .40 on Social Skills, Speech, and Problem Behavior.

The highest loading was on the Problem Behavior component and appears to fit best in that category. It was determined that the item will stay clustered with the Problem Behavior items. Finally, Speech item number eight, rejected because he or she does not respond to peers with words, did not load greater than .40 on the Speech component but it did on the Social Skills component. The item was moved to the Social Skills component because of loadings. The final measure and component loadings are presented in Table 9 followed by means and standard deviations in Table 10.

Table 9

Final Measure and Component Loadings (N = 155)

Item: Rejected by peers because...	Component	Factor Loading
Of his or her hair	Appearance	.45
Of his or her weight	Appearance	.73
Of his or her height	Appearance	.72
He or she has a physical deformity	Appearance	.61
He or she talks too loudly	Speech	.71
He or she frequently speaks off topic	Speech	.75
He or she talks too much	Speech	.87
He or she bites others	Problem Behavior	.73
He or she has tantrums	Problem Behavior	.49
He or she hits others	Problem Behavior	.79
He or she spits on others	Problem Behavior	.74
He or she does not follow rules	Problem Behavior	.62
He or she does poorly on classwork	Academics	.84
He or she takes too long to complete classwork	Academics	.82
He or she cannot read well	Academics	.74
He or she takes up too much of the teacher's time	Academics	.77
He or she lacks the skills to play games with others	Social Skills	.71
He or she lacks the skills to begin conversations	Social Skills	.82
He or she lacks appropriate eye contact	Social Skills	.73

CAUSES OF PEER REJECTION SCALE

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He or she does not pay close attention when other children are speaking to them	Social Skills	.77
He or she appears uninterested in others	Social Skills	.76
Because he or she has difficulties taking turns	Social Skills	.42
Because he or she does not respond to peers with words	Social Skills	.68

Table 10

Means and Standard Deviations for Individual Items and Subscales (N = 155)

Item: Rejected by peers because...	Mean	Standard Deviation
CPRS Total Score	53.98	13.65
Appearance Subscale	4.87	1.89
Of his or her hair	1.21	.58
Of his or her weight	1.33	.91
Of his or her height	1.26	.71
He or she has a physical deformity	1.06	.37
Speech Subscale	7.50	3.29
He or she talks too loudly	2.25	1.22
He or she frequently speaks off topic	2.77	1.29
He or she talks too much	2.48	1.36
Problem Behaviors Subscale	10.13	3.84
He or she bites others	1.23	.61
He or she has tantrums	3.01	1.32
He or she hits others	1.97	1.21
He or she spits on others	1.29	.73
He or she does not follow rules	2.63	1.26
Academics Subscale	7.65	4.22
He or she does poorly on classwork	1.76	1.20
He or she takes too long to complete classwork	2.10	1.36
He or she cannot read well	1.74	1.26

He or she takes up too much of the teacher's time	2.05	1.25
Social Skills Subscale	21.27	6.53
He or she lacks the skills to play games with others	3.37	1.27
He or she lacks the skills to begin conversations	3.23	1.33
He or she lacks appropriate eye contact	2.90	1.23
He or she does not pay close attention when other children are speaking to them	3.24	1.20
He or she appears uninterested in others	2.94	1.34
Because he or she has difficulties taking turns	3.03	1.26
Because he or she does not respond to peers with words	2.56	1.35

The final version of the CPRS contains 23 items. Four items in the Appearance components, three in Speech, five in Problem Behavior, four in Academics, and seven in Social Skills. A total of nine items were deleted based on low correlations with other items and two items changed components based on theory and loadings.

2. Does the CPRS demonstrate sufficient coefficient alpha reliability?

One method of establishing reliability for the CPRS is by using Cronbach alpha. The reliability coefficients for the measure and its subscales are reported below in Table 11.

Table 11

Cronbach Alpha Reliability for Total Scale and Subscales (N = 155)

Scale	Cronbach Alpha α
CRPS Total	.86
Appearance	.66
Speech	.81
Problem Behavior	.77
Academics	.85
Social Skills	.85

The CPRS demonstrated adequate coefficient alpha reliability at .86 (Field, 2009). Three of the five subscale also demonstrated adequate coefficient alpha reliability above .80; however, two subscales, Problem Behaviors and Appearance, fell below the .80 criteria. The Problem Behavior subscale appeared to approach the adequate range at .77 while Appearance had relatively low coefficient alpha reliability at .66. This is likely influenced by the relatively low item count (3).

3. Does the CPRS demonstrate sufficient test-retest reliability?

Test-retest reliability was obtained from 55 (35%) of parents. Parents were asked if it would be acceptable to contact them in the future to take the measure again two to four weeks after the initial administration. The total score from the first administration was correlated with the second in order to determine test-retest reliability. A correlation of .70 was considered acceptable with .80 and higher considered good evidence for test-retest reliability. Parents who participated in the second administration of the CPRS were

entered to win one of two additional \$25 Target gift cards. The test-retest reliability for the total score and each of the subscales is reported below.

Table 12

Test-Retest Reliability for Total Scale and Subscales (N = 55)

Scale	Pearson Correlation
CRPS Total	.76**
Appearance	.80**
Speech	.77**
Problem Behavior	.76**
Academics	.88**
Social Skills	.69**

** $p < .01$

The total scale and all of the subscales met the .70 criteria with the exception of Social Skills which approached .70.

4. Does the total score of the CPRS correlate with social and emotional problems?

The literature base indicates that children who experience peer rejection often have difficulties in social/emotional functioning (Beeri & Lev-Wiesel, 2012; Dishion, Patterson, Stoolmiller, & Skinner, 1991; Laird, Jordan, Dodge, Pettit, & Bates, 2001; Mrug et al., 2012). While the CPRS is not a measure of peer rejection, etiological indicators of peer rejection should still be correlated with negative outcomes. One method of determining if the CPRS is a valid measure is to correlate the total score of the CPRS with the composite score from the SDQ. The composite score is continuous score composed of four of the five subscales of the SDQ. These scales are Emotional

Symptoms, Conduct Problems, Hyperactivity/Inattention, and Peer Relationship Problems.

The CPRS was significantly correlated with the SDQ, $r = .61$, p (two-tailed) $< .01$. This demonstrates initial evidence of strong convergent validity. The criteria for strong convergent validity at $.60$ was determined based on correlations between peer rejection and negative symptomatology reported in previous studies (e.g., Prinstein & La Greca, 2004). A post-hoc analysis was conducted in order to determine discriminant validity with the Prosocial scale of the SDQ. The CPRS was negatively correlated with the scale ($r = -.27$) providing initial evidence of discriminant validity between the CPRS and a five item subscale assessing prosocial behavior.

5. Which subscales of the CPRS are related to the most negative social and emotional outcomes for children?

One advantage of focusing on the etiology of peer rejection instead of the topography is that researchers have the potential to analyze which of the potential causes are correlated to the worst outcomes for children. Each individual subscale of the CPRS was correlated with the total score of the SDQ in order to answer this hypothesis. The results are reported in Table 13 and are ordered from the highest correlation to the lowest.

Table 13

Pearson Correlations Between Subscales and SDQ (N = 155)

Subscale	Pearson Correlation with SDQ
Speech	.52**
Problem Behaviors	.51**
Academics	.40**
Social Skills	.36**
Appearance	.28**

** $p < .01$

These data provide preliminary (albeit correlational) evidence that children with intellectual and developmental disabilities who are rejected because of speech or problem behavior issues may be at the most risk for negative social/emotional outcomes.

6. What percentage of variance do the subscales of the CPRS account for in social and emotional outcomes for children with intellectual and/or developmental disabilities?

Finally, a linear regression was used to determine the percentage of variance the individual subscales of the CPRS account for social and emotional outcomes for children with intellectual and/or developmental disabilities. Since it is unknown which predictor accounts for the most variance in the SDQ, each subscale was entered at one time (i.e., not hierarchically). The regression analysis revealed that the model significantly predicted social and emotional problems in children with intellectual and/or developmental disabilities, $F_{(5, 149)} = 26.86, p < .001$. R^2 for the model was .47, and the adjusted R^2 was .46. The results can be found in Table 14.

Table 14

Multiple Linear Regression Between CPRS Subscales and SDQ (N = 155)

	B	SE B	β
Constant	9.88	1.3	
Appearance	.14	.19	.05
Speech	.58	.11	.37***
Problem Behavior	.49	.10	.36***
Academics	.17	.08	.14*
Social Skills	.06	.06	.08

Note: $R^2 = .47$, * $p < .05$, *** $p < .001$

The following subscales were significant in predicting social and emotional problems: Speech ($t = 5.49$, $p < .001$), Problem Behaviors ($t = 5.12$, $p < .001$), and Academics ($t = 2.02$, $p < .05$). The Appearance ($t = .73$, $p > .05$) and Social Skills ($t = 1.10$, $p > .05$) subscales were not significant in predicting problems. Forty-seven percent of the variability of social and emotional outcomes was accounted for by the CPRS subscales.

Chapter IX

Discussion

The current study aimed to extend the peer rejection literature through the creation and validation of a new measure, the CPRS. The CPRS was designed to provide clinicians and researchers with information regarding the etiology of peer rejection through a brief parent rating scale. This is in contrast to many established measures that focus on the existence of the construct alone. The study was completed in two phases. Four caregivers completed the measure and provided feedback to the research team during phase I. The CPRS was modified based on caregiver feedback and was then administered to a larger sample for validation and hypothesis testing. One hundred and fifty-five parents of children with an intellectual and/or developmental disability completed the online survey containing the CPRS and the SDQ, a valid and reliable measure of social and emotional functioning.

A CFA was conducted to determine if the data fit the hypothesized five-factor model. The fit indices revealed that the model was not a good fit. Items were then analyzed based on correlations with other items to determine if they should be discarded. This analysis revealed that nine total items only correlated .30 or above with one, two, or three other items on the scale. Those items were then discarded. Eight of the discarded items appeared to be overly specific in nature (e.g., your child is rejected because of his or her glasses); however, one of the items was more general but may have been inappropriate to include in a sample asking about children with intellectual and developmental disabilities. This item inquired about being rejected because of high academic performance.

An EFA was conducted with the remaining 23 items with an orthogonal (varimax) rotation once the items with low correlations with other items were discarded. The EFA revealed a six-factor solution for the data; however, one of the components only had one item and accounted for 5.4% of the variance; therefore, a five-factor model was forced and another EFA was conducted with the remaining data. Three items had greater than .40 loadings on multiple components and were either moved or kept on the same components based on theory and loading. The final measure included 23 items with four items on the Appearance subscale, three on Speech, five on Problem Behavior, four on Academic, and seven on Social Skills. All components loadings were above .40.

Specific hypothesis testing was conducted once the final 23 item measure was created. Cronbach Alpha and two week test-retest reliability was conducted on the measure. The results demonstrated adequate Cronbach Alpha reliability of .86; however, two of the five scales did not display .80 or higher Cronbach Alpha reliability, Problem Behaviors and Appearance. Test-retest reliability revealed that the CPRS was a reliable measure when taken two weeks apart ($r = .76$). All subscales also correlated .70 or above for two week test-retest reliability with the exception of the Social Skills subscale which correlated .69. The CPRS also demonstrated strong convergent validity with the SDQ ($r = .61$).

One of the major advantages of creating a measure that focuses on the etiology of peer rejection is that hypotheses regarding relationships between certain types of rejection and negative outcomes can be answered. For example, the current study found that Speech ($r = .52$) and Problem Behaviors ($r = .51$) were correlated with the most negative outcomes for children with intellectual and/or developmental disabilities.

Although these results are correlational in nature, they provide at least initial evidence that children rejected by peers because of speech and problem behaviors are related to the most negative social and emotional outcomes; however, these results may be different if examined in children without intellectual and developmental disabilities. In addition, a linear regression analysis revealed that the five subscales of the CPRS accounted for 47% of the variance of negative social and emotional outcomes with Speech and Problem Behavior predicting the largest amount of variance.

Implications

The development and validation of the CPRS has several implications for researchers and clinicians.

Implications for research. The current study is the first known to combine potential etiological factors related to peer rejection into one measure. Indeed, the creation and validation of the CPRS answers the following gap in the assessment of social skills in children: “despite the numerous scales to assess social skills in children, few treatment studies use assessment measures to identify treatment targets” (Boisjoli & Matson, 2009, p. 71). Mrazek and Haggerty (1994) stated that understanding epidemiology should be the first step in the conceptualizing of a problem. Within this framework, the construct of peer rejection may now be more accurately conceptualized within the framework of etiological antecedents such as rejection because of academic problems, behavior problems, appearance, social skills, and speech. This may be the first step in developing interventions derived from etiological information for peer rejection rather than only the presence of the construct. The CPRS may have the potential to advance the peer rejection literature similarly to ADHD (Fabiano et al., 2009), Disruptive

Behaviors (Eyberg, 2001), and Adolescent Depression (Kazdin, 2010) in that each of these areas can now have targeted interventions based on etiological information.

The CPRS also validates decades of literature demonstrating that peer rejection is related to many negative outcomes (see Chapter II). Additionally, the five hypothesized factors identified from the literature base appear to be important contributing factors to peer rejection. However, future research could identify other relevant etiological areas related to peer rejection.

The development and validation of the CPRS provides researchers with access to a parent rating form for peer rejection which focuses on the etiology instead of topography of peer rejection. Some researchers may want access to the measure to help determine potential correlates of etiological indicators of peer rejection and various outcomes. This could include behavioral (e.g., aggression) and physiological (e.g., sleep) outcomes. Researchers may also want to use the CPRS as a screening measure for peer rejection. While screening for the existence of the construct is not the primary goal of the CPRS, it may be used in this manner as an indicator of problems with peer social status. The CPRS may serve this role in providing information about peer social status without having to obtain informed consent from all of the parents of the children involved in their projects as described earlier in Chapter V (which would not be the case by using peer nomination).

The current study provides the peer rejection literature with another assessment measure in addition to the currently existing measures that do not examine etiological factors (see Table 1). The existing measurement tools available provide researchers with peer social status and potential problem behaviors in the present (e.g., who would you

like to play with at this moment), not necessarily how these problems developed or contributing factors. The CPRS may be an important next direction in understanding peer rejection by not only answering “what” but “why.”

Implications for clinicians. The development and validation of the CPRS has several implications for clinicians. The primary intent for the CPRS is providing school and mental health professionals with an efficient parent measure of the etiology of peer rejection. Professionals may be interested in using this information to tailor potential intervention strategies to the needs of the child. For example, if parents indicate that the child frequently has problems taking turns, a clinician would likely focus on the externalizing behaviors influencing their peer social status. In another example, if clinicians use the CPRS to determine if a child is rejected because of appearance, including a psychoeducational intervention to the child’s peers may be indicated. It is important to note that while the goal of the measure is intended to inform treatment, the results of the CPRS will be correlates, not causes. The CPRS should be used in addition to sound clinical judgment (which may include other measures) in determining the goals for treatment.

Educators may find the measure particularly useful when determining eligibility criteria under the Individuals with Disabilities Education Improvement Act (IDEIA, 2004). For example, in Texas, one of the eligibility categories for special education services is Emotional Disturbance. One of the criteria for an Emotional Disturbance is “An inability to build or maintain satisfactory interpersonal relationships with peers and teachers” (Texas Education Code, 2013). While the CPRS should never be used in

isolation, it may be integrated into a multi-informant multi-method full and individual evaluation to determine potential eligibility criteria.

One implication for clinicians is the impact of the discarded items on the measure. Nine total items were discarded because they did not correlate well with other items in the measure. Four of the items were hypothesized to fall on the Appearance subscale, four on Speech, and one on Academics. Some specificity will be lost from discarding the items (e.g., rejected because he or she wears glasses). This may impact targeted interventions for individuals who are rejected by peers. Additionally, the current sample only included parents who had a child with an intellectual and/or developmental disability; therefore, the item regarding performing better academically may be more relevant for other populations. Clinicians concerned about rejected because of performing well academically will need to ask additional questions to assess for this etiology of rejection. The loss of specificity in the items was necessary for validity and reliability but may have lowered the ability for clinicians to identify targets for intervention.

Limitations

The current study has several limitations that should be considered. The first limitation is that the sample for phase II was largely a convenience sample. While parents from many different organizations participated in the study, all of them were accessible online (either through social media or through organization newsletters and other publications).

Another limitation to the current study is the use of a screening measure to answer research questions. There are various advantages and disadvantages to using a screening

measure instead of a more in-depth measure like the SSIS (Doll & Jones, 2013; Gresham & Elliott, 2008). One limitation is that the SDQ may not fully assess the constructs of interest in this proposal; however, using a screening measure puts less strain on the participants of the study by having a shorter completion time which likely led to less survey fatigue (recall that the average time to complete the online survey for phase II was under eight minutes).

Obtaining information from parents who have a child with an intellectual and/or developmental disability and who is rejected by peers was difficult since the target population was relatively narrow. Because of this and other factors, the target sample size was less than recommendations for conducting CFA. This limitation may be a threat to construct validity.

Another limitation to the current study is that collecting data online may have posed additional threats to validity. Surveys conducted face-to-face or with more direct means tend to have higher response rates than online surveys which may lead to bias (Dillman, 2000). To describe this limitation another way, there may have been important differences between individuals who would respond to a face-to-face survey as opposed to an online survey.

The current sample primarily included parents who endorsed being White/Caucasian. This limitation could limit the generalizability of the results to other ethnic groups. The differentiation in responding between White and Non-White parents may be, in part, due to the online delivery of the survey and the recruitment through support groups. Future studies using the CPRS should incorporate a more diverse group of individuals to complete the measure.

The current study utilized the CPRS total score as an outcome variable for hypothesis testing; however, there may be potential issues with this method. The primary concern is the meaning behind the total score of the CPRS. The total score is a combination of the various etiologies and the frequency of the rejection. It is not necessarily a measure of severity of rejection, although this may be the case. To put this another way, a child may receive a total score of thirty if the parent endorsed “all of the time” for each of the Speech subscale items (three total items); however, if a parent endorsed “somewhat true” for each item on the scale, the total would be sixty-four. A sixty-four in this case does not necessarily equate to an increased severity of peer rejection. It may mean that the parent perceives their child as rejected to some extent because of the thirty-two reasons. The total score was used in the current study to test convergent validity and in the regression analysis. A more appropriate way to utilize the CPRS in the future may be to examine subscales in isolation over a total score. One example of another measure that utilizes this method is the Aberrant Behavior Checklist (Aman, Singh, Stewart, Field, 1985). The individual subscales of this measure are summed and interpreted instead of the total score.. The creator of the scale, Michael Aman, published an article stating additional reasons why utilizing the total score of the measure may be problematic (Aman, 2012). Many of the reasons are also applicable to the CPRS.

Finally, the current project relied exclusively on parent report for all information (including diagnosis information). While this makes the research process less cumbersome, it allowed for potential errors related to parents being unsure about what their child’s diagnosis was. Additionally, by obtaining only parent report, the current

project is only receiving information regarding the etiology of peer rejection or exclusion from one source. Teachers and clinicians have valuable information to share regarding the construct and by only focusing on parents, this information is excluded from the project. In addition, the current study may be more accurately described as a measure of parent perception of peer rejection. No direct observations of rejection were obtained. The data were exclusively reliant on parent perspective and, therefore, may be either an over or underrepresentation of peer rejection.

Future Directions

Many potential avenues for future research exist utilizing the CPRS. One future direction is to use the factor structure identified through the EFA and confirm it with a CFA with a larger more representative sample. This may confirm whether the proposed model is adequate and may provide clinicians and researchers with additional confidence in the structure of the measure.

Another area for future research is expanding the norm group outside of younger children with intellectual and/or developmental disabilities. This could include adolescents above the age of 10 and typically developing children. Additional hypothesis could be answered regarding specific emotional/behavioral disorders. For example, are children with ADHD more likely to be rejected because of Problem Behaviors? Are there certain groups of children that are rejected more because of their speech patterns? Researchers could also use the CPRS to create predictive models of exhibiting externalizing/internalizing disorders.

Future research could also demonstrate additional convergent or discriminant validity. As mentioned in the limitations, the SDQ is intended as a screening tool.

Future research could use more inclusive measures to demonstrate validity. The CPRS was negatively correlated with the Prosocial scale on the SDQ ($r = -.27$) providing some initial evidence of divergent validity; however, the Prosocial scale only includes five items so more robust measures should be used in the future.

One of the goals of creating the CPRS was to drive intervention. Future research could evaluate treatment decision models which incorporate the CPRS when addressing peer rejection or exclusion. For example, does the CPRS predict treatment effectiveness? Do clinicians think that it is a useful tool? Can specific treatment components be derived from the results of the CPRS?

The Speech subscale currently only has three items. Future research could focus on expanding the scale to include more items. This could improve reliability and ensure that the subscale is truly capturing rejection because of speech issues.

Future studies could also focus on other negative outcomes. The current study only included a broad measure of social and emotional function; however, researchers could focus on singular behaviors such as loss of sleep or increases in self-injurious behaviors for children with intellectual and/or developmental disabilities.

Finally, additional versions of the CPRS could be created. This could include a self and teacher version. Peer rejection is likely perceived differently based on the reporter and additional reporters could provide clinicians and researchers with a better representation of the etiology of peer rejection.

Conclusion

The current study provides initial evidence that the CPRS may be a valid and reliable instrument for assessing the etiology of peer rejection in children with intellectual

and/or developmental disabilities. This is the first known step in creating a measure to assess the etiology of peer rejection and has several implications for researchers and clinicians. The CPRS has the potential to be used as a screening tool and/or provide more targeted intervention for children who are rejected by their peers.

The limitations of the study included the use of a convenience sample, a screening measure for many of the dependent variables, the relatively low sample size for conducting a CFA, the recruitment of parents through online tools, and relying solely on parent information. These limitations should be considered when interpreting the results and implications of the study.

Finally, the current study provided many potential avenues for future research. This included using a CFA to confirm the current factor structure of the instrument with a larger sample size, using a different sampling group outside of children with intellectual and/or developmental disabilities, using other measures to obtain additional evidence for convergent and divergent validity, intervention studies that use the CPRS to inform treatment, expanding upon the Speech subscale, determining relationships with other negative outcomes in children, and creating parent and teacher versions of the instrument.

References

- Achenbach, T. M. (1981). *Developmental psychopathology* (2nd ed.). New York: Wiley.
- Achenbach, T. M., & Edelbrock, C. S. (1981). Behavioral problems and competencies reported by parents of normal and disturbed children aged four through sixteen. *Monographs of the Society for Research in Child Development, 46*, 1-82.
- Achenbach, T. M., & Rescorla, L. A. (2001). *Manual for the ASEBA school-age forms and profiles*. Burlington: University of Vermont Department of Psychiatry.
- Achenbach, T. M., Becker, A., Dopfner, M., Heiervang, E., Roessner, V., Steinhausen, H. C., & Rothenberger, A. (2008). Multicultural assessment of child and adolescent psychopathology with ASEBA and SDQ instruments: Research findings, applications, and future directions. *Journal of Child Psychology and Psychiatry, 49*(3), 251-275.
- Achenbach, T. M. (2009). *Achenbach System of Empirically Based Assessment (ASEBA): Development, Findings, Theory, and Applications*. University of Vermont, Research Center of Child, Youth & Families.
- Aman, M. G., Singh, N. N., Stewart, A. W., & Field, C. J. (1985). The aberrant behavior checklist: A behavior rating scale for the assessment of treatment effects. *American Journal of Mental Deficiency, 89*, 485-491.
- Aman, M. G. (2012). Aberrant behavior checklist: Current identity and future developments. *Clin Exp Pharmacol, 2*(3), 2161-1459
- American Association on Intellectual and Developmental Disabilities (2013). Definition of Intellectual Disability. Retrieved from http://aamr.org/content_100.cfm?navID=21

- American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: Author.
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: Author.
- Asher, S. R., Rose, A. J., & Gabriel, S. W. (2001). Peer rejection in everyday life. In M. R. Leary (Ed.), *Interpersonal rejection* (pp. 105–142). New York: Oxford University Press.
- Autism Speaks (2013). What is Autism? Retrieved from:
<http://www.autismspeaks.org/what-autism>
- Beeri, A., & Lev-Wiesel, R. (2011). Social rejection by peers: A risk factor for psychological distress. *Child and Adolescent Mental Health*, 17, 216-221.
- Berube, R. L. (2004). *Bibliography of published studies using the Achenbach System of Empirically Based Assessment (ASEBA): 2004 edition*. Burlington, VT: Research Center for Children, Youth and Families, University of Vermont.
- Bishop, D. V. M. (2003). *The Children's Communication Checklist: CCC-2*. London: Harcourt Assessment.
- Boisjoli, J. A., & Matson, J. L. (2009). General methods of assessment. In J. L. Matson (Ed.), *Social Behavior and Skills in Children*. New York, NY: Springer.
- Boxer, P., & Frick, P. J. (2008). Treating conduct problems, aggression, and antisocial behavior in children and adolescents: An integral view. In R. G. Steele, T. D. Elkin, & M. C. Roberts (Eds.) *Handbook of evidence-based therapies for children and adolescents: Bridging science and practice* (pp. 241-259). New York, NY: Springer.

- Bramston, P., Fogarty, G., & Cummins, R. A. (1999). The nature of stressors reported by people with an intellectual disability. *Journal of Applied Research in Intellectual Disabilities, 12*(1), 1-10.
- Brent, D. A., Perper, J. A., Moritz, G., Allman, C., Roth, C., Schweers, J., et al. (1993). Psychiatric risk factors of adolescent suicide: A case control study. *Journal of the American Academy of Child and Adolescent Psychiatry, 32*, 521-529.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist, 32*(7), 513-531.
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin, 56*(2), 81-105.
- Cappadocia, M. C., Weiss, J. A., & Pepler, D. (2012). Bullying experiences among children and youth with autism spectrum disorders. *Journal of Autism and Developmental Disorders, 42*(2), 266-277.
- Card, N. A., & Hodges, E. V. (2008). Peer victimization among schoolchildren: Correlations, causes, consequences, and considerations in assessment and intervention. *School Psychology Quarterly, 23*(4), 451-461.
- Cases, O., Seif, I., Grimsby, J., Gaspar, P., Chen, K., Pournin, S., ... & De Maeyer, E. (1995). Aggressive behavior and altered amounts of brain serotonin and norepinephrine in mice lacking MAOA. *Science, 268*(5218), 1763-1766.
- Cassidy, J., & Asher, S. R. (1992). Loneliness and peer relations in young children. *Child Development, 63*(2), 350-365. doi:10.2307/1131484

- Centers for Disease Control and Prevention (2013a). Key findings: Trends in the prevalence of developmental disabilities in U.S. children, 1997-2008. Retrieved from: <http://www.cdc.gov/ncbddd/features/birthdefects-dd-keyfindings.html>
- Centers for Disease Control and Prevention (2013b). Autism spectrum disorders data & statistics. Retrieved from <http://www.cdc.gov/ncbddd/autism/data.html>
- Chen, P. Y., & Schwartz, I. S. (2012). Bullying and victimization experiences of students with autism spectrum disorders in elementary schools. *Focus on Autism and Other Developmental Disabilities, 27*(4), 200-212.
- Chen, X., Rubin, K. H., & Li, D. (1997). Relation between academic achievement and social adjustment: Evidence from Chinese children. *Developmental Psychology, 33*, 518-525.
- Clarke, G. N., Hornbrook, M., Lynch, F., Polen, M., Gale, J. O'Connor, E. et al. (2002). Group cognitive-behavioral treatment for depressed adolescent offspring of depressed parents in a health maintenance organization. *Journal of the American Academy of Child and Adolescent Psychiatry, 41*, 305-313.
- Coie, J. D., Dodge, K. A., & Coppotelli, H. (1982). Dimensions and types of social status: A cross-age perspective. *Developmental Psychology, 18*(4), 557.
- Coie, J. D., & Krehbiel, G. (1984). Effects of academic tutoring on the social status of low-achieving, socially rejected children. *Child Development, 55*, 1465-1478.
- Coie, J. D., Miller-Johnson, S., & Bagwell, C. (2000). Prevention science. In A. J. Sameroff, M. Lewis, & S. M. Miller (Eds.), *Handbook of developmental psychopathology* (pp. 93-112). New York: Plenum Press.

Coladarci, T. (2013). [Review of the test Home and Community Social Behavior Scales].

In *The sixteenth mental measurements yearbook*. Available from

<http://buros.unl.edu/buros/> Retrieved on March 4th, 2013.

Cole, S. W., Hawkey, L. C., Arevalo, J. M., Sung, C. Y., Rose, R. M., & Cacioppo, J. T.

(2007). Social regulation of gene expression in human leukocytes. *Genome Biology*, 8(9), R189.1-189.13.

Cole, S. W. (2009). Social regulation of human gene expression. *Current Directions in Psychological Science*, 18(3), 132-137.

Cook, C. R., Williams, K. R., Guerra, N. G., Kim, T. E., & Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly*, 25(2), 65-83.

Conners, C. K. (1997) *Conners' teacher rating scale. Revised (S)*. New York: Multi-Health Systems.

Cooper, S. A., Smiley, E., Jackson, A., Finlayson, J., Allan, L., Mantry, D., & Morrison, J. (2009). Adults with intellectual disabilities: Prevalence, incidence and remission of aggressive behavior and related factors. *Journal of Intellectual Disability Research*, 53(3), 217-232.

Craig, W., Harel-Fisch, Y., Fogel-Grinvald, H., Dostaler, S., Hetland, J., Simons-Morton, B., ... & Pickett, W. (2009). A cross-national profile of bullying and victimization among adolescents in 40 countries. *International Journal of Public Health*, 54(2), 216-224.

Crocker, L., & Algina, J. (2008). *Introduction to classical and modern test theory*. Holt, Rinehart and Winston, Orlando, FL.

- Dillman, D. A. (2000). Mail and internet surveys: *The Tailored Design method, 2nd edition*. New York: John Wiley & Sons, Inc.
- Dishion, T. J., Patterson, G. R., Stoolmiller, M., & Skinner, M. L. (1991). Family, school, and behavioral antecedents to early adolescent involvement with antisocial peers. *Developmental Psychology, 27*(1), 172.
- Dodge, K. A. (1986). A social information processing model of social competence in children. In M. Perlmutter (Ed.), *The Minnesota symposium on child psychology* (Vol. 18, pp. 77-125). Hillsdale, NJ: Erlbaum.
- Doll, B. & Jones, K. (2013). [Review of the test Social Skills Improvement System]. In *The sixteenth mental measurements yearbook*. Available from <http://www.unl.edu/buros/> Retrieved on March 4th, 2013.
- Estes, A., Rivera, V., Bryan, M., Cali, P., & Dawson, G. (2011). Discrepancies between academic achievement and intellectual ability in higher-functioning school-aged children with autism spectrum disorder. *Journal of Autism and Developmental Disorders, 41*, 1044-1052.
- Eyberg, S. M., Funderburk, B. W., Hembree-Kigin, T. L., McNeil, C. B., Querido, J. G., & Hood, K. (2001). Parent-child interaction therapy with behavior problem children: One and two year maintenance of treatment effects in the family. *Child and Family Behavior Therapy, 23*, 1-20.
- Fabiano, G. A., Pelham, W. E., Coles, E. K., Gnagy, E. M. Chronis-Tuscano, A., & O'Conner, B. (2009). A meta-analysis of behavioral treatments for attention-deficit/hyperactivity disorder. *Clinical Psychology Review, 29*, 129-140.

- Farmer, C. A., & Aman, M. G. (2011). Aggressive behavior in a sample of children with autism spectrum disorders. *Research in Autism Spectrum Disorders*, 5(1), 317-323.
- Field, A. (2009). *Discovering statistics using SPSS*. Sage Publications Limited.
- Finlayson, J., Morrison, J., Jackson, A., Mantry, D., & Cooper, S. A. (2010). Injuries, falls and accidents among adults with intellectual disabilities. Prospective cohort study. *Journal of Intellectual Disability Research*, 54, 966-980.
- Fite, P. J., Wimsatt, A. R., Vitulano, M. L., Rathert, J. L., & Schwartz, S. (2012). Examination of peer rejection and depressive symptoms as mediators of the link between rule-breaking behavior and poor academic performance. *Journal of Psychopathology*, 34, 164-171.
- Frederickson, N. L. & Furnham, A. F. (1998). Sociometric classification methods in school peer groups: A comparative investigation. *Journal of Child Psychology and Psychiatry*, 39, 921–933. doi: 10.1111/1469-7610.00392
- Gazelle, H., & Rudolph, K. D. (2004). Moving toward and moving away from the world: Social approach and avoidance trajectories in anxious youth. *Child Development*, 75(3), 829-849.
- Gershon, R., Lai, J., Bode, R., Choi, S., Moy, C., Bleck, T., & ... Cella, D. (2012). Neuro-QOL: Quality of life item banks for adults with neurological disorders: item development and calibrations based upon clinical and general population testing. *Quality of Life Research*, 21(3), 475-486. doi:10.1007/s11136-011-9958-8

- Gifford-Smith, M. E., & Brownell, C. A. (2003). Childhood peer relationships: Social acceptance, friendships, and peer networks. *Journal of School Psychology, 41*(4), 235-284.
- Goodman, R. (1997). The strengths and difficulties questionnaire: A research note. *Journal of Child Psychology and Psychiatry, 38*, 581-586.
- Goodman, A., & Goodman, R. (2009). Strengths and difficulties questionnaire as a dimensional measure of child mental health. *Journal of the American Academy of Child and Adolescent Psychiatry, 48*(4), 400-403.
- Goodman, R., Ford, T., Simmons, H., Gatward, R., & Meltzer, H. (2000). Using the strengths and difficulties questionnaire (SDQ) to screen for child psychiatric disorders in a community sample. *The British Journal of Psychiatry, 177*, 534-539. doi: 10.1192/bjp.177.6.534
- Gomez, R., & Hazeldine, P. (1996). Social information processing in mild mentally retarded children. *Research in Developmental Disabilities, 17*, 217-227.
- Gray, W. N., Kahhan, N. A., & Janicke, D. M. (2009). Peer victimization and pediatric obesity: A review of the literature. *Psychology in the Schools, 46*(8), 720-727.
- Green, M. B. (2006). Seeing an elephant by touching its trunk. *PsychCritiques, 51*, article 20.
- Gresham, F. M. (1986). Conceptual and definitional issues in the assessment of children's social skills: Implications for classification and training. *Journal of Clinical Child Psychology, 15*, 3-15.
- Gresham, F. M., & Elliot, S. N. (1990). *Social Skills Rating System*. Circle Pines, MN, American Guidance Service, Inc.

- Gresham, F. M., & Elliott, S. N. (2008). *Social Skills Improvement System Ratings Scales*. Bloomington, MN: Pearson Assessments.
- Harrist, A. W., & Bradley, K. D. (2003). "You can't say you can't play": Intervening in the process of social exclusion in the kindergarten classroom. *Early Childhood Research Quarterly, 18*(2), 185-205.
- Hendricks, D. (2010). Employment and adults with autism spectrum disorders: Challenges and strategies for success. *Journal of Vocational Rehabilitation, 32*(2), 125-134.
- Henggeler, S. W., Schoenwald, S. K., Borduin, C. M., Rowland, M. D., & Cunningham, P. B. (2009). *Multisystemic therapy for antisocial behavior in children and adolescents* (2nd ed.). New York: Guilford Press.
- Hinshaw, S. P., & Anderson, C. A. (1996). Conduct and oppositional defiant disorders. In E. J. Mash & R. A. Barkley (Eds.), *Child psychopathology* (pp. 113-149). New York: Guilford Press.
- Hobfoll, S. E., Dunahoo, C. A., & Monnier, J. (1995). Conservation of resources and traumatic stress. In *Traumatic stress: From theory to practice. Plenum series on stress and coping.*, (pp. 29-47). New York, NY, US: Plenum Press
- Horner, R. H., Albin, R. W., Sprague, J. R., Storey, K., & Newton, J. S. (1997). *Functional assessment and program development for problem behavior: A practical handbook*. Pacific Grove, CA: Brooks/Cole Publishing.
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55

- Hutcheson, G. D. & Sofroniou, N. (1999). *The multivariate social scientist: Introductory statistics using generalized linear models*. London: Sage.
- Individuals with Disabilities Education Improvement Act (2004). Pub. L. No. 108-446.
- Jackson, D. L., Gillaspay Jr, J. A., & Purc-Stephenson, R. (2009). Reporting practices in confirmatory factor analysis: an overview and some recommendations. *Psychological Methods, 14*(1), 6-23.
- Jacobs, L., Turner, L. A., Faust, M., & Stewart, M. (2002). Social problem solving of children with and without mental retardation. *Journal of Developmental and Physical Disabilities, 14*, 37-50.
- Jacobvitz, D., & Sroufe, L. A. (1987). The early caregiver-child relationship and attention-deficit disorder with hyperactivity in kindergarten: A prospective study. *Child Development, 58*, 1496-1504.
- Janssens, A., & Deboutte, D. (2009). Screening for psychopathology in child welfare: The Strengths and Difficulties Questionnaire (SDQ) compared with the Achenbach System of Empirically Based Assessment (ASEBA). *European Child & Adolescent Psychiatry, 18*(11), 691-700.
- Jastak, J. F., & Jastak, S. R. (1978). *Wide Range Achievement Test* (rev. ed.). Wilmington, DE, Jastak Assoc Inc.
- Jaycox, L. H., Cohen, J. A., Mannarino, A. P., Walker, D. W., Langley, A. K., Gegenheimer, K. L., ... & Schonlau, M. (2010). Children's mental health care following Hurricane Katrina within a randomized field trial of trauma-focused psychotherapies. *Journal of Traumatic Stress, 23*(2), 223-231.

- Jewell, J. D., Jordan, S. S., Hupp, S. D. A., & Everett, G. E. (2011). Etiology and relationships to developmental disabilities. In J. L. Matson (ed.), *Social Behavior and Skills in Children* (pp. 39-59). Springer.
- Kamphaus, R. W., & Frick, P. J. (2009). Clinical assessment of child and adolescent personality and behavior, third edition. New York, NY: Springer.
- Kanne, S. M., Gerber, A. J., Quirnbach, L. M., Sparrow, S. S., Cicchetti, D. V., & Saulnier, C. A. (2011). The role of adaptive behavior in autism spectrum disorders: Implications for functional outcome. *Journal of Autism and Developmental Disorders*, 41, 1007-1018.
- Karevoid, E., Ystrom, E., Coplan, R. J., Sanson, A. V., & Mathiesen, K. S. (2012). A prospective longitudinal study of shyness from infancy to adolescence: Stability, age-related changes, and prediction of socio-emotional functioning. *Journal of Abnormal Child Psychology*, 40(7), 1167-1177.
- Kendall, P. C. (1990). *Coping Cat workbook*. Ardmore, PA: Workbook.
- Kendall, P. C., & Hedtke, K. A. (2006a). *Cognitive-behavioral therapy for anxious children: Therapist manual* (3rd ed.). Ardmore, PA: Workbook.
- Kendall, P. C., & Hedtke, K. A. (2006b). *Coping Cat Workbook* (2nd ed.). Ardmore, PA: Workbook.
- Kleinhans, N. M., Richards, T., Weaver, K., Johnson, L. C., Greenson, J., Dawson, G., & Aylward, E. (2010). Association between amygdala response to emotional faces and social anxiety in autism spectrum disorders. *Neuropsychologia*, 48(12), 3664-3670. Doi: 10.1016/j.neuropsychologia.2010.07.022

- Klin, A., Saulnier, C. A., Sparrow, S. S., Cicchetti, D. V., Volkmar, F. R., & Lord, C. (2007). Social and communication abilities and disabilities in higher functioning individuals with autism spectrum disorders: The Vineland and the ADOS. *Journal of Autism and Developmental Disorders, 37*, 748-759.
- Kosterman, R., Hawkins, J. D., Mason, W. A., Herrenkohl, T. I., Lengua, L. J., & McCauley, E. (2010). Assessment of behavior problems in childhood and adolescence as predictors of early adult depression. *Journal of Psychopathology and Behavioral Assessment, 32*(1), 118-127.
- La Greca, A. M., & Harrison, H. M. (2005). Adolescent peer relations, friendships, and romantic relationships: Do they predict social anxiety and depression? *Journal of Clinical Child and Adolescent Psychology, 34*(1), 49-61.
- Ladd, G. W., & Profilet, S. M. (1996). The Child Behavior Scale: A teacher-report measure of young children's aggressive, withdrawn, and prosocial behaviors. *Developmental Psychology, 32*, 1008-1024.
- Laird, R. D., Jordan, K. Y., Dodge, K. A., Pettit, G. S., & Bates, J. E. (2001). Peer rejection in childhood, involvement with antisocial peers in early adolescence, and the development of externalizing behavior problems. *Development and Psychopathology, 13*, 337-354.
- LaMalfa, G., Lassi, G., Bertelli, M., Salvini, R., & Placidi, G. F. (2004). Autism and intellectual disability: A study of prevalence on a sample of the Italian population. *Journal of Intellectual Disability Research, 48*, 262-267.
- Laws, G., Bates, G., Feuerstein, M., Mason-Apps, E., & White, C. (2012). Peer acceptance of children with language and communication impairments in a

- mainstream primary school: Associations with type of language difficulty, problem behaviours and a change in placement organization. *Child Language Teaching and Therapy*, 28(1), 73-86. doi:10.1177/0265659011419234
- Lev-Wiesel, R., Nuttman-Shwartz, O., & Sternberg, R. (2006). Peer rejection during adolescence: Psychological long-term effects—A brief report. *Journal of Loss & Trauma*, 11(2), 131-142.
- Li, Q. (2007). New bottle but old wine: A research of cyberbullying in schools. *Computers in Human Behavior*, 23, 1777-1791.
- Lovaas, O. I. (1987). Behavioral treatment and normal educational and intellectual functioning in young autistic children. *Journal of Consulting and Clinical Psychology*, 55, 3-9.
- Lubbers, M. J., Van Der Werf, M. P. C., Snijders, T. A. B., Creemers, B. P. M., & Kuyper, H. (2006). The impact of peer relations on academic progress in junior high. *Journal of School Psychology*, 44, 491-512.
- Lutgendorf, S. K., DeGeest, K., Sung, C. Y., Arevalo, J. M., Penedo, F., Lucci, J., ... & Cole, S. W. (2009). Depression, social support, and beta-adrenergic transcription control in human ovarian cancer. *Brain, Behavior, and Immunity*, 23(2), 176-183.
- Lyons-Ruth, K., Easterbrooks, M., & Cibelli, C. D. (1997). Infant attachment strategies, infant mental lag, and maternal depressive symptoms: predictors of internalizing and externalizing problems at age 7. *Developmental Psychology*, 33(4), 681.
- MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological methods*, 4(1), 84

- Masten, C. L., Eisenberger, N. I., Borofsky, L. A., Pfeifer, J. H., McNealy, K., Mazziotta, J. C., & Dapretto, M. (2009). Neural correlates of social exclusion during adolescence: understanding the distress of peer rejection. *Social Cognitive and Affective Neuroscience*, 4(2), 143-157.
- Matson, J. L., & Lovullo, T. V. (2009). Encopresis, soiling and constipation in children and adults with developmental disability. *Research in Developmental Disabilities*, 30, 399-807.
- Maulik, P. K., Mascarenhas, M. N., Mathers, C. D., Dua, T., & Saxena, S. (2011). Prevalence of intellectual disability: A meta-analysis of population-based studies. *Research in developmental disabilities*, 32(2), 419-436.
- Merrell, K. W., & Caldarella, P. (2002). *Home & Community Social Behavior Scales User's Guide*. Paul H. Brookes Publishing Company.
- McClure, S.M., Berns, G.S., Montague, P.R. (2003). Temporal prediction errors in a passive learning task activates human striatum. *Neuron*, 38, 339–346.
- Miers, A. C., Blote, A. W., & Westenberg, P. M. (2010). Peer perceptions of social skills in socially anxious and nonanxious adolescents. *Journal of Abnormal Child Psychology*, 38(1), 33-41.
- Miles, S. B., & Stipek, D. (2006). Contemporaneous and longitudinal associations between social behavior and literacy achievement in a sample of low income elementary school children. *Child Development*, 77(1), 103-117.
- Miltenberger, R. G. (2011). *Behavior Modification: Principles & Procedures*. Belmont, CA: Cengage.

- Moroz, K. B., & Jones, K. M. (2002). The effects of positive peer reporting on children's social involvement. *School Psychology Review, 31*, 235-245.
- Mrazek, P. J., & Haggerty, R. J. (Eds.) (1994). *Reducing risks for mental disorders: Frontiers for preventative intervention research*. Washington, DC: National Academy Press.
- Mrug, S., Molina, B. S., Hoza, B., Gerdes, A. C., Hinshaw, S. P., Hechtman, L., & Arnold, L. E. (2012). Peer rejection and friendships in children with attention-deficit/hyperactivity disorder: Contributions to long-term outcomes. *Journal of Abnormal Child Psychology, 40*, 1013-1026.
- Muris, P., Meesters, C., & van den Berg, F. (2003). The strengths and difficulties questionnaire (SDQ): Further evidence for its reliability and validity in a community sample of Dutch children and adolescents. *European Child & Adolescent Psychiatry, 12*, 1-8. doi: 10.1007/s00787-003-0298-2.
- Newborg, J., Stock, J. R., Wnek, L., Guidubaldi, J., & Svinicki, J. (1984). *Battelle Developmental Inventory*. Link Associates, Inc., DLM Teaching Resources.
- Nichols, M. P. (2009). *The Essentials of Family Therapy* (4th eds.). Boston, MA: Pearson.
- O'Neil, R., Welsh, M., Parke, R. D., Wang, S., & Strand, C. (1997). A longitudinal assessment of the academic correlates of early peer acceptance and rejection. *Journal of Clinical Child Psychology, 26*, 290-303.
- Olweus, D. (1993). *Bullying at school: What we know and what we can do*. Cambridge, MA: Blackwell.

- Parker, J. G., & Asher, S. R. (1987). Peer relations and later personal adjustment: Are low-accepted children at risk? *Psychological Bulletin*, *102*(3), 357-389.
doi:10.1037/0033-2909.102.3.357
- Pearl, R., Farmer, T. W., Van Acker, R., Rodkin, P. C., Bost, K. K., Coe, M., & Henley, W. (1998). The social integration of students with mild disabilities in general education classrooms: Peer group membership and peer-assessed social behavior. *The Elementary School Journal*, *99*, 167-185.
- Peery, J. C. (1979). Popular, amiable, isolated, rejected: A reconceptualization of sociometric status in preschool children. *Child Development*, *50*, 1231-1234.
- Pelham, W. E., & Fabiano, G. A. (2008). Evidence-based psychosocial treatment for attention deficit/hyperactivity disorder: An update. *Journal of Clinical Child and Adolescent Psychology*, *37*(1), 185-214.
- Prinstein, M. J., & La Greca, A. M. (2004). Childhood peer rejection and aggression as predictors of adolescent girls' externalizing and health risk behaviors: A 6-year longitudinal study. *Journal of Consulting and Clinical Psychology*, *72*(1), 103.
- Rathvon, N. (2008). *Effective school interventions: Evidence-based strategies for improving student outcomes*. Guildford Press.
- Reynolds, C. R., & Kamphaus, R. W. (1992). *BASC: Behavior Assessment System for Children: Manual*. American Guidance Service, Incorporated.
- Richardson, S. A., Goodman, N., Hastorf, A. H., & Dornbusch, S. M. (1961). Cultural uniformity in reaction to physical disabilities. *American Sociological Review*, *26*, 241-247.

- Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin*, 86(3), 638-641.
- Rowe, D. C. (2001). *Biology and crime*. Roxbury, Los Angeles.
- Rutland, A., Cameron, L., Jugert, P., Nigbur, D., Brown, R., Watters, C., & ... Le Touze, D. (2012). Group identity and peer relations: A longitudinal study of group identity, perceived peer acceptance, and friendships amongst ethnic minority English children. *British Journal of Developmental Psychology*, 30(2), 283-302. doi:10.1111/j.2044-835X.2011.02040.x
- Sabornie, E. J., Marshall, K. J., & Ellis, ES (1990). Restructuring of mainstream sociometry with learning disabled and nonhandicapped students. *Exceptional Children*, 56, 314-323.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99(6), 323-338.
- Schwimmer, J., Burwinkle, T., & Varni, J. (2003). Health-related quality of life of severely obese children and adolescents. *Journal of the American Medical Association*, 289, 1813-1819.
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton.
- Sheard, C. C., Clegg, J. J., Standen, P. P., & Cromby, J. J. (2001). Bullying and people with severe intellectual disability. *Journal of Intellectual Disability Research*, 45(5), 407-415. doi:10.1046/j.1365-2788.2001.00349.x

- Silk, J. S., Stroud, L. R., Siegle, G. J., Dahl, R. E., Lee, K., & Nelson, E. E. (2012). Peer acceptance and rejection through the eyes of youth: Pupillary, eyetracking and ecological data from the Chatroom Interact Task. *Social Cognitive and Affective Neuroscience*, 7(1), 93-105. doi:10.1093/scan/nsr044
- Skinner, B. F. (1976). *About Behaviourism*. Random House Digital Inc.
- Smith, J. D., Schneider, B. H., Smith, P. K., & Ananiadou, K. (2004). The effectiveness of whole-school antibullying programs: A synthesis of evaluation research. *School Psychology Review*, 33, 547-560.
- Smith, T., McAdam, D., & Napolitano, D. (2007). Autism and applied behavior analysis. In P. Sturmey & A. Fitzer (Eds.), *Autism spectrum disorders: Applied behavior analysis evidence and practice* (pp. 1-29). Austin, TX: PRO-ED.
- Sparrow, S. S., Cichetti, D. V., & Balla, D. A. (2005). *Vineland Adaptive Behavior Scales: Parent/Caregiver Rating Form (2nd ed.)*. Minneapolis: NCS Pearson, Inc.
- Sparrow, S. S., Cichetti, D. V., & Balla, D. A. (2006). *Vineland Adaptive Behavior Scales: Teacher Rating Form (2nd ed.)*. Minneapolis: NCS Pearson, Inc.
- Spence, S. H. (1987). The relationship between social—cognitive skills and peer sociometric status. *British Journal of Developmental Psychology*, 5(4), 347-356.
- Taylor, J. L., & Seltzer, M. M. (2011). Employment and post-secondary educational activities for young adults with autism spectrum disorders during the transition to adulthood. *Journal of Autism and Developmental Disorders*, 41(5), 566-574.
- Terman, L. M., & Merrill, M. A. (1960). *Stanford-Binet Intelligence Scale: Manual for the third revision, Form LM*. Oxford, England: Houghton Mifflin.

- Texas Education Code (2013). *89.1040. Eligibility Criteria*. Retrieved from <http://ritter.tea.state.tx.us/rules/tac/chapter089/ch089aa.html> on May 1st, 2013.
- Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior, 26*(3), 277-287.
- Veronneau, M. H., Vitaro, F., Brendgen, M., Dishion, T. J., & Tremblay, R. E. (2010). Transactional analysis of the reciprocal links between peer experience and academic achievement from middle childhood to early adolescence. *Developmental Psychology, 46*(4), 773.
- Volkmar, F. R., Carter, A., Grossma, J., & Klin, A. (1997). Social development in autism. In D. J. Cohen & F. R. Volkmar (Eds.), *Handbook of autism and developmental disorders* (pp. 173-194). New York: Wiley.
- Vreeman, R. C., & Carroll, A. E. (2007). A systematic review of school-based interventions to prevent bullying. *Archives of Pediatrics & Adolescent Medicine, 161*(1), 78-88.
- Waasdorp, T. E., Bradshaw, C. P., & Leaf, P. J. (2012). The impact of schoolwide positive behavioral interventions and supports on bullying and peer rejection: A randomized controlled effectiveness trial. *Archives of Pediatrics & Adolescent Medicine, 166*(2), 149-156.
- Wager, T. D., Davidson, M. L., Hughes, B. L., Lindquist, M. A., Ochsner, K.N. (2008). Prefrontal-subcortical pathways mediating successful emotion regulation. *Neuron, 59*, 1037–1050.

- Walker, H. M.(1983). *Walker Problem Behaviour Inventory Checklist: Manual*. Los Angeles, CA: Western Psychological Services.
- Weisz, J. R., & Kazdin, A. E. (Eds.). (2010). *Evidence-based psychotherapies for children and adolescents*. Guilford Press
- Wood, J. J., Cowan, P. A., & Baker, B. L. (2002). Behavior problems and peer rejection in preschool boys and girls. *The Journal of Genetic Psychology, 163*(1), 72-88.
- Woodcock, R. W., & Johnson, M. B. (1990). *Woodcock-Johnson psycho-educational battery-revised*. Allen, TX: DLM Teaching Resources.

Appendix A

The CPRS Used During Phase 1

****Please note that this is not the final version of the CPRS. The measure was modified during phase I of the research project****

How many times *per week* would you say your child is rejected by peers?

1. 0
2. 1-3
3. 4-6
4. 7-9
5. 10 or greater

How much of a problem do you feel it is when your child is rejected by peers (e.g., they are intentionally left out of activities, are made fun of, etc.)?

1. Not at all a problem
2. Minor problem
3. Average problem
4. Moderate problem
5. Large problem

Demographics

Your age:

Age of your child:

Your sex:

1. Male
2. Female

Sex of your child:

1. Male
2. Female

Your ethnicity:

1. African American or Black
2. Asian, Asian American, or Pacific Islander
3. Hispanic or Latino
4. American Indian or Native American
5. Caucasian or White
6. Biracial/Multiracial

Diagnosis

Please indicate which of the following diagnoses your child currently has. Please circle all that apply:

1. Intellectual Disability (Mental Retardation)
2. Autism Spectrum Disorder
3. Asperger's
4. Major Depressive Disorder
5. Generalized Anxiety Disorder
6. Oppositional Defiant Disorder
7. Conduct Disorder
8. Bi-polar Disorder
9. Down's Syndrome
10. ADHD
11. Angelman Syndrome
12. Cerebral Palsy
13. Fragile X Syndrome
14. Learning Disability
15. Prader-Willi Syndrome
16. Traumatic Brain Injury (TBI)
17. Other (please write in):
18. Other (please write in):
19. Other (please write in):
20. No diagnosis or Unknown Diagnosis

What is the intellectual functioning of your child (i.e. IQ)? If you are unsure or do not want to answer this question, please write "N/A" in the box below.

_____ (0-160)

The following questions will ask you about your child being rejected by peers. For the purpose of this survey, peer rejection is defined as any of the following activities: being intentionally left out of activities, made fun of, or bullied by his or her peers.

On the following scale please rate how true the following statements are about your child.

1. Not true at all.
2. Somewhat true.
3. True an average amount.
4. True most of the time.
5. True all of the time.

Your child is rejected by peers.....	Rating from 1-5 (please circle)				
<i>Appearance</i>					
1. Because of his or her teeth	1	2	3	4	5
2. Because of his or her hair	1	2	3	4	5
3. Because of his or her ears	1	2	3	4	5
4. Because of his or her weight	1	2	3	4	5
5. Because of his or her height	1	2	3	4	5
6. Because he or she wears glasses	1	2	3	4	5
7. Because he or she wears braces	1	2	3	4	5
8. Because he or she has a physical deformity (e.g., short limbs or cleft lip)	1	2	3	4	5
<i>Speech</i>					
9. Because he or she has a lisp.	1	2	3	4	5
10. Because he or she stutters.	1	2	3	4	5
11. Because he or she has an overly high pitch (e.g., sounds like he or she is talking through his nose).	1	2	3	4	5
12. Because he or she talks too loudly.	1	2	3	4	5
13. Because he or she mumbles.	1	2	3	4	5
14. Because he or she frequently speaks off topic.	1	2	3	4	5
15. Because he or she talks too much.	1	2	3	4	5
<i>Problem Behaviors</i>					
16. Because he or she bites others.	1	2	3	4	5
17. Because he or she has difficulties taking turns.	1	2	3	4	5
18. Because he or she has tantrums.	1	2	3	4	5
19. Because he or she hits others.	1	2	3	4	5
20. Because he or she spits on others.	1	2	3	4	5
21. Because he or she does not follow rules.	1	2	3	4	5
<i>Academics</i>					
22. Because he or she does poorly on classwork.	1	2	3	4	5
23. Because he or she takes too long to complete classwork.	1	2	3	4	5
24. Because he or she cannot read well.	1	2	3	4	5
25. Because he or she takes up too much of the teacher's time.	1	2	3	4	5
26. Because he or she performs better academically than other children.	1	2	3	4	5
<i>Social Skills</i>					
27. Because he or she lacks the skills to play games with others.	1	2	3	4	5
28. Because he or she lacks the skills to begin conversations.	1	2	3	4	5

29. Because he or she lacks appropriate eye contact.	1	2	3	4	5
30. Because he or she does not pay close attention when other children are speaking to them.	1	2	3	4	5

Please provide other areas that your child may be rejected by peers based on the following categories:

Appearance: Are there other aspects of your child's appearance that may be contributing to peer rejection? Please write them below.

Speech: Are there other aspects of your child's speech that may be contributing to peer rejection that are not included in the measure above? Please write them below.

Problem Behaviors: Are there other aspects of your child's problem behaviors that may be contributing to peer rejection that are not included in the measure above? Please write them below.

Academics: Are there other aspects of your child's academic performance that may be contributing to peer rejection that are not included in the measure above? Please write them below.

Social Skills: Are there other aspects of your child's social skills that may be contributing to peer rejection that are not included in the measure above? Please write them below.

Please provide your email address OR mailing address below to be entered for the chance to win one of two \$25 Target Gift Cards.

May I contact you again in the future to take this survey one additional time? If you participate, you will be entered into a drawing for another \$25 Target Gift Card.

1. Yes

2. No

Thank you for taking your time to complete the survey.

Appendix B
The Revised CPRS

How many times *per week* would you say your child is rejected by peers?

1. 0
2. 1-3
3. 4-6
4. 7-9
5. 10 or greater

How much of a problem do you feel it is when your child is rejected by peers (e.g., they are intentionally left out of activities, are made fun of, etc.)?

1. Not at all a problem
2. Minor problem
3. Average problem
4. Moderate problem
5. Large problem

Demographics**Your age:****Age of your child:****Your sex:**

1. Male
2. Female

Sex of your child:

1. Male
2. Female

Your ethnicity:

1. African American or Black
2. Asian, Asian American, or Pacific Islander
3. Hispanic or Latino
4. American Indian or Native American
5. Caucasian or White
6. Biracial/Multiracial

Diagnosis

Please indicate which of the following diagnoses your child currently has. Please circle all that apply:

1. Intellectual Disability (Mental Retardation)
2. Autism Spectrum Disorder
3. Asperger's
4. Major Depressive Disorder
5. Generalized Anxiety Disorder
6. Oppositional Defiant Disorder
7. Conduct Disorder
8. Bi-polar Disorder
9. Down's Syndrome
10. ADHD
11. Angelman Syndrome
12. Cerebral Palsy
13. Fragile X Syndrome
14. Learning Disability
15. Prader-Willi Syndrome
16. Traumatic Brain Injury (TBI)
17. Other (please write in):
18. Other (please write in):
19. Other (please write in):
20. No diagnosis or Unknown Diagnosis

What is the intellectual functioning of your child (i.e. IQ)? If you are unsure or do not want to answer this question, please write "N/A" in the box below.

_____ (0-160)

The following questions will ask you about your child being rejected by peers. For the purpose of this survey, peer rejection is defined as any of the following activities: being intentionally left out of activities, made fun of, or bullied by his or her peers.

On the following scale please rate how true the following statements are about your child.

1. Not true at all.
2. Somewhat true.
3. True an average amount.
4. True most of the time.
5. True all of the time.

Your child is rejected by peers.....	Rating from 1-5 (please circle)				
<i>Appearance</i>					
1. Because of his or her teeth	1	2	3	4	5
2. Because of his or her hair	1	2	3	4	5
3. Because of his or her ears	1	2	3	4	5
4. Because of his or her weight	1	2	3	4	5
5. Because of his or her height	1	2	3	4	5
6. Because he or she wears glasses	1	2	3	4	5
7. Because he or she wears braces	1	2	3	4	5
8. Because he or she has a physical deformity (e.g., short limbs or cleft lip)	1	2	3	4	5
<i>Speech</i>					
9. Because he or she has a lisp.	1	2	3	4	5
10. Because he or she stutters.	1	2	3	4	5
11. Because he or she has an overly high pitch (e.g., sounds like he or she is talking through his nose).	1	2	3	4	5
12. Because he or she talks too loudly.	1	2	3	4	5
13. Because he or she mumbles.	1	2	3	4	5
14. Because he or she frequently speaks off topic.	1	2	3	4	5
15. Because he or she talks too much.	1	2	3	4	5
16. Because he or she does not respond to peers with words.	1	2	3	4	5
<i>Problem Behaviors</i>					
17. Because he or she bites others.	1	2	3	4	5
18. Because he or she has difficulties taking turns.	1	2	3	4	5
19. Because he or she has tantrums.	1	2	3	4	5
20. Because he or she hits others.	1	2	3	4	5
21. Because he or she spits on others.	1	2	3	4	5
22. Because he or she does not follow rules.	1	2	3	4	5
<i>Academics</i>					
23. Because he or she does poorly on classwork.	1	2	3	4	5
24. Because he or she takes too long to complete classwork.	1	2	3	4	5
25. Because he or she cannot read well.	1	2	3	4	5
26. Because he or she takes up too much of the teacher's time.	1	2	3	4	5
27. Because he or she performs better academically than other children.	1	2	3	4	5
<i>Social Skills</i>					
28. Because he or she lacks the skills to play games with others.	1	2	3	4	5

29. Because he or she lacks the skills to begin conversations.	1	2	3	4	5
30. Because he or she lacks appropriate eye contact.	1	2	3	4	5
31. Because he or she does not pay close attention when other children are speaking to them.	1	2	3	4	5
32. Because he or she appears uninterested in others.	1	2	3	4	5

Appendix C

The SDQ

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of the child's behavior over the last six months or this school year.

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings			
Restless, overactive, cannot stay still for long			
Often complains of headaches, stomach-aches or sickness			
Shares readily with other children, for example toys, treats, pencils			
Often loses temper			
Rather solitary, prefers to play alone			
Generally well behaved, usually does what adults request			
Many worries or often seems worried			
Helpful if someone is hurt, upset or feeling ill			
Constantly fidgeting or squirming			
Has at least one good friend			
Often fights with other children or bullies them			
Often unhappy, depressed or tearful			

Generally liked by other children			
Easily distracted, concentration wanders			
Nervous or clingy in new situations, easily loses confidence			
Kind to younger children			
Often lies or cheats			
Picked on or bullied by other children			
Often offers to help others (parents, teachers, other children)			
Thinks things out before acting			
Steals from home, school or elsewhere			
Gets along better with adults than with other children			
Many fears, easily scared			
Good attention span, sees work through to the end			

Appendix D
Informed Consent

UNIVERSITY OF HOUSTON
CONSENT TO PARTICIPATE IN RESEARCH
CONFIDENTIAL RESEARCH

PROJECT TITLE: Validation of the Causes of Peer Rejection Scale.

You are being invited to participate in a research project conducted by Aaron Boyce from the College of Education at the University of Houston. This project is being conducted under the supervision of Dr. Samuel McQuillin.

NON-PARTICIPATION STATEMENT

Your participation is voluntary and you may refuse to participate or withdraw at any time without penalty or loss of benefits to which you are otherwise entitled. You may also refuse to answer any question.

PURPOSE OF THE STUDY

The purpose of this study is to help the researcher created a survey that could be used to help identify treatment goals for children who are rejected by peers. This research project will also assist the researcher in identifying which factors lead to peer rejection.

PROCEDURES

You will be one of approximately 300 subjects to be asked to participate in this project. If you decide to participate in this study, you will be asked to complete a questionnaire that should take you between 20 and 45 minutes to complete. This is a one-time survey if you choose and a two-time survey if you wish to help the research more in the future. You will be asked complete a short demographic questionnaire including your age, age of

your child, ethnicity, your gender, gender of your child, and specific questions regarding your child's involvement with peers. You will also complete a survey called the Strengths and Difficulties Questionnaire which asks you specific questions about your child's social and emotional functioning.

Some of the survey materials may be considered sensitive materials by some. This includes specific questions about your child's social/emotional functioning (such as his/her relationships with peers) and overall conduct (bullying behavior).

CONFIDENTIALITY

Your identity will not be known to any researcher at the University of Houston; however, if you decide to include your e-mail or mailing address in the survey, researchers would have that information in order to contact you in case you have won a gift card or if you wish to participate further in the research. Your contact information will not be connected with your responses to the survey.

RISKS/DISCOMFORTS

There is some risk for respondents to experience discomfort while completing information about their child. Some of the data may be considered sensitive.

BENEFITS

While you will not directly benefit from participation, your participation may help investigators better understand some of the factors related to children being rejected by peers.

ALTERNATIVES

Participation in this project is voluntary and the only alternative to this project is non-participation.

INCENTIVES/REMUNERATION

Once you have completed the study, you will have the option to enter an e-mail address or mailing address. If you do, you will be entered into a drawing for one of two \$25 Target gift cards. If you complete the follow up survey, you will be entered to win an additional \$25 Target gift card.

PUBLICATION STATEMENT

The results of this study may be published in professional and/or scientific journals. It may also be used for educational purposes or for professional presentations. However, no individual subject will be identified.

PARTICIPANT RIGHTS

1. I understand that informed consent is required of all persons participating in this project.
2. All procedures have been explained to me and all my questions have been answered to my satisfaction.
3. Any risks and/or discomforts have been explained to me.
4. Any benefits have been explained to me.
5. I understand that, if I have any questions, I may contact Aaron Boyce at 713-743-4698. I may also contact Dr. Samuel McQuillin, faculty sponsor, at 713-743-9830.
6. I have been told that I may refuse to participate or to stop my participation in this project at any time before or during the project. I may also refuse to answer any question.
7. ANY QUESTIONS REGARDING MY RIGHTS AS A RESEARCH PARTICIPANT MAY BE ADDRESSED TO THE UNIVERSITY OF HOUSTON COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS (713-743-9204). ALL RESEARCH

PROJECTS THAT ARE CARRIED OUT BY INVESTIGATORS AT THE UNIVERSITY OF HOUSTON ARE GOVERNED BY REQUIREMENTS OF THE UNIVERSITY AND THE FEDERAL GOVERNMENT.

8. All information that is obtained in connection with this project and that can be identified with me will remain confidential as far as possible within legal limits.

Information gained from this study that can be identified with me may be released to no one other than the principal investigator and his/her faculty sponsor. The results may be published in scientific journals, professional publications, or educational presentations without identifying me by name.

I HAVE READ (OR HAVE HAD READ TO ME) THE CONTENTS OF THIS CONSENT FORM AND HAVE BEEN ENCOURAGED TO ASK QUESTIONS. I HAVE RECEIVED ANSWERS TO MY QUESTIONS. I GIVE MY CONSENT TO PARTICIPATE IN THIS STUDY. YOU SHOULD PRINT A COPY OF THIS FOR YOUR RECORDS.

1. Yes

2. No

Appendix E

Recruitment

Sharing Request Script

Hi,

I hope all is well. I was curious if it would be possible to recruit parents to complete a survey through your website, newsletter, or facebook page? The survey is for my dissertation and we are creating a measure that will help assess the etiology of peer rejection in children with developmental disabilities. Parents will be entered to win target giftcards for participating. The survey is all online and should take between 20-30 minutes. Let me know if this is possible and I can send you a blurb (including the link) to post. Thank you so much for your help and I look forward to talking with you soon.

Email and Facebook Script

Hello,

My name is Aaron Boyce and I am conducting research through the University of Houston. I am looking for parents who have a child between the ages of 4 and 10 with a developmental disability (e.g., Autism, Intellectual Disability (MR) and has problems with peer rejection (for example, being made fun of, left out of activities, teased). I am attempting to create a survey measure that will help clinicians and research identify some of the predictors of peer rejection which will hopefully lead to more efficient interventions. Below is the link to my survey. It should take between 20 and 45 minutes and you will be entered to win one of two \$25 Target gift cards for your time.

Additionally, if you are ok with it, I will contact you in the future to see if you wish to take the survey again and be entered for an additional drawing for another gift card.

Thank you so much for your time and feel free to pass this message along to other parents who may be interested. Also feel free to ask any questions.

Link to survey: <http://www.surveygizmo.com/s3/1991041/Causes-of-Peer-Rejection-Scale>

Test-Retest Reliability Script

Hello,

My name is Aaron Boyce and I am conducting research through the University of Houston. About two weeks ago you completed a survey for my dissertation. Just as a reminder, I am attempting to create a survey measure that will help clinicians and researchers identify some of the predictors of peer rejection which will hopefully lead to more efficient interventions. When you completed the survey, you indicated that it was ok for me to contact you a second time. If you complete this portion of the survey, you will be entered into a drawing for an additional \$25 Target giftcard. Below is the link to second part of the survey. It should take between 10 and 15 minutes.

Thank you again for your time. Let me know if you have any questions or if you know anyone that might be interested in completing the initial survey.

Here is the link: <http://www.surveygizmo.com/s3/2042355/Causes-of-Peer-Rejection-Scale-Second-Administration>

Face-to-Face Script:

Hi, my name is XXXXXX and I doing a research study looking at parents who have children with a development disability such as Autism and who have a child who may have problems with peer rejection. Would you like to participate in this research?

If Yes: Recruiter will present the parent with informed consent, making sure to describe it and answer any question. The first two questions of the survey will be delivered first to see if the participants qualify for the survey (i.e., presence of frequent and severe peer rejection).

If No: Ok, no problem. Thank you so much for your time.

Appendix F

Groups and Organizations Contacted for Phase II Recruitment in Alphabetical Order

"Mommy Buddy" from the planet Autism

"Speaking of Apraxia: A Parents' Guide to Childhood Apraxia of Speech"

104.1 KRBE

50 Things An Aspie Girl May Say

A Day on The Life of an Autism Dad

A is for Adam not Autism

A Is for Autism, F Is for Friend & In His Shoes - Autism Awareness for Kids

A Mighty Girl

A Thread of Magic

A Very Special Needs Resource

A.S.P.I.E. - Autism Spectrum Pride In Everything

Adelaide Autism Adventures

ADHD Kids Care - Support Group for Parents

Adventures of a Dancing Mommy

Adventures with Eli the Incredible

Advocates for Adults and Children with Developmental Disabilities

Aeon's Autism Journey

Aiden's heroes

Aidens Autistic World

All Over The Spectrum

Always Unique Totally Intelligent Sometimes Mysterious

Amazing Strong Zadder

An Awkward Mama's Life

Anthony Rocks Autism

Anti-Bullying

Anti-Bullying Leadership Network

Arc of Pickens County

Arc of South Carolina

ASD Dad

ASD Dad and Monkey Boy

Ask FB To Ban ALL Pages That Hate Against Special Needs

Asperger Operating System

Asperger Parent Network

Asperger Syndrome Awareness

Asperger Women's Association

Asperger's Kids and Loss

Asperger's with a Cup of Coffee

Asperger's Women's Association

Asperger's: A Lighter Shade of Blue

Asperger's Support Network

Asperkids

Asperlutely Autsome

ASPie

Aspie Friends

Aspie Mom

Aspie Moms and Dads

Aspie Moms Blog

Aspie Much?

ASPIE of Houston

Aspie-Evansville

AspieMom: Adventures in Autismland

Association for Children with a Disability (ACD Vic)

Attention Deficit Dad

Autism Awareness

Autickles and Autears, Life with Autism

Autimates

Autism - Evolution of Expansion

Autism & Music

Autism AcceptanceTree Project

Autism Action Network

Autism Action Partnership

Autism All the Way

Autism Alliance

Autism and Social Communication Awareness

Autism Awareness Day

Autism Awareness in North Texas

Autism Birmingham Community Interest Company

Autism Boss Ladie

Autism Cares Foundation

Autism Dad

Autism Daddy

Autism Daily Newscast

Autism Day Washington

Autism Family Circus

Autism Family Network

Autism iHelp

Autism In Our House

Autism Insurance for Georgia - Ava's Law

Autism is a Trip

Autism Life Link

Autism Live & Up Close

Autism Maven

Autism Mommy-Therapist

Autism Moms and Dads

Autism Moms Support Group

Autism Mothers

Autism Music Fest

Autism Now Center

Autism Odysseys

Autism Ontario - Durham

Autism Pants

Autism Parenting Magazine

Autism Parents Community

Autism Parents Hub

Autism Princess and Superhero

Autism Quote of the Day

Autism Services of Southwest Louisiana

Autism Shines

Autism Society

Autism Society - Greater Baton Rouge, Inc.

Autism Society Georgia

Autism Society Louisiana

Autism Society of America - Central Illinois Chapter

Autism Society of Central Texas

Autism Society of Cumberland County

Autism Society of Greater Orlando ASGO

Autism Society of LA

Autism Society of NC - Crystal Coast Chapter

Autism Society of NC OBX Chapter

Autism Society of Nebraska

Autism Society of North Carolina - Gaston County Chapter

Autism Society of Ohio

Autism Society of Ohio, Mahoning Valley Office

Autism Society of Palm Beach Martin County

Autism Society of San Diego

Autism Society Omaha

Autism Society Rhode Island

Autism Society Texas, Gulf Coast

Autism Sparkles

Autism Sparks

Autism Speaks

Autism Speaks - Georgia

Autism Speaks Long Island

Autism Speaks U

Autism Speaks U at the University of Texas at Austin

Autism Speaks- Orlando

Autism Spectrum Connections

Autism Spectrum Disorder Global Connections

Autism Spectrum Disorder, through my eyes

Autism Spectrum Quarterly Magazine

Autism Spectrum Therapies

Autism Superfriends

Autism Support Group

Autism Support Network

Autism Support of Southeast Texas

Autism Talk

Autism the Real Life Family Shenanigans

Autism Through A Momma's Eyes

Autism Tweets Texas

Autism United

Autism Votes

Autism Warriors

Autism West Midlands

Autism Will Not Define My Son

Autism with a Bottle of Wine

Autism with a Side of Fries

Autism Women's Network

Autism- Day to Day, a Place to Share

Autism-Mom

Autism, ADHD, and Depression, Don't Judge US

Autism, the Not "Normal" Normal

Autism: Different, Not Less

Autism: Life with Luke

Autism: Spectrum Support

Autism. From a Dad's Eye View

Autism/Bullying

Autism/SPD Mums and Dads

AutismOne

Autismradio.org Mommy Blog and Advice

AutismShop

AutismTalk

Autistic Angels

Autistic Arts

Autistic Child's Guide

Autistic Kids Rock

Autistic Spectrum Disorder - Parents United

Autistic Women's Collective

Autistic Women's Empowerment Project

Autistics Against Autism

Autistics are People Too

Awareness for Autism

Away From the Oven

Awesome Autism/Special Needs Parents

Awesome Before Autism

Aydan's Journey

Beards for Autism

Behavioral Support Service

Best Buddies International

Big Daddy Autism

Bipolar Support - Parents of Children with Bipolar and other Mood Disorders

Body Respect for Children

Book About Children with Down Syndrome

Brain Injury Alliance of SC

Bright Tots

Bullying and Mental Health

Bullying Autism

Bullying.org

The Candy Store: Autism Awareness Radio Show!!

CannaBabies: Branden the Brave

Children with Autism

Children/Adults with Special needs and Understanding Them.

Closing the Gap on Autism

Coffee with Autism

Cold days in Minnesota with a Warm Cup of Autism

Colin's Friends

Color the World for Autism

Conquer for Conner - My Special Love

Cool Dads with Cool Kids with Autism.

COS Circle of Support - for Autism Parents

Create a Voice for Autism

Crock-Pot Mama

Cyberbully Mom Club

Cyberbullying Research Center

Dad v Autism

DADS Against Bullying

Dads Appreciating Down Syndrome - Milwaukee

Dads Appreciating Down Syndrome - Omaha

Dancing with Autism

Darren's World Our Amazing Life With Autism

Dateline NBC

DC Autism Society - DCASA

Dear Mama

Deciphering Morgan

Devin's Daily Dillemma's

Disability and Autism Services of Indiana

Disability Rights Texas

Disability Support Group

Doug Flutie, Jr. Foundation for Autism

Down Syndrome Alliance of the Midlands

Down Syndrome Association of Greater Cincinnati

Down Syndrome Association of Nebraska

Down Syndrome Blogs

Down Syndrome Centre

Down Syndrome, Two Words not a Sentence.

Down's and Proud

Down's Syndrome Association

Duchenne Muscular Dystrophy MOMS

Dyslexia Children with special education needs

East Central Iowa Autism Society

East Texas Autism Support

Easter Seals Walk with Me Houston

Education is Special

Educational Technology for All Learners

Elvis Duran Show

Emmitt's piece of the puzzle

Empowering Ellen

Empowering Parents.com

End Bullying

Enroll El Paso Coalition

Epilepsy Education and Support

Ethan Miller Journey with Autism

Exploring Minds Academy

F.A.A.S.T.

Facing Autism with Children Everywhere

Fairfield County DSN Advocacy Group

Family Autism Network

Family Connection of SC Inc.

Fans of Being a Mom

Fathers Autism Support Team

Fifty Shades of Motherhood

Fighting for Autism

Florence County DSN Self-Advocacy Council Our Voices Count Too

Following Jasan. Capturing the Uniqueness of the Autistic Brain.

Forehead Kisses: Not just another autism page

Frankie's Arachnoid Cyst Journey

Friday Night Lights for the Special Needs

From the Bowels of Motherhood

Fumbling Thru Autism

Gabe the Babe & Co

Gaming for Autism

Gareth's Get Up & Go for Mito

Garretts Keychain Collection

Generation Rescue

Global Autism Collaboration

Global Down Syndrome Foundation

Grape Jelly on Pizza

Greater Longview Autism Society

Halos for Muscular Dystrophy

Heart of Texas Autism Network

Heart of Texas Autism Network

Helping Angels with Autism

Helping Parents of Special Needs Children

HipHop4Autism

Homestyle Mama (with a side of Autism)

Hope for Abby and Noah

HOPELights

Horses for Lex

House of Autism

HuffPost Parents

Humans of New York

I have an Ausome Child

I'm Bob

If You're Flappy And You Know It

In My Daughter's Eyes: Zaira's Journey

International Down Syndrome Coalition

It Can Get Better

It Gets Better Project

It Gets better Tour

It's a Mad, Dad World

It's Not Just Autism, It's Life and Everything in Between

It's Not Rocket Science, its Parenting

Jacob's Journey with Autism, Mood Disorder, and NF1

Jayden's Fight Against Beta Ketothiolase Deficiency

Jenny's Support Page for Those with Cerebral Palsy and Other Disabilities

Jojo's World

Jordaine's Autism Journey

Jordan's Aspie Journey

Jordon's Pathway

Jack's Mom's House

Just a Minute My Cape is in the Dryer

Just Another Day with Autism

Just Joshin' Ya

Just Josiah J. Autism Adventures

K-LOVE Morning Show

Kai's life with ADHD and sensory processing disorder

Karla's ASD Page

Ken Anderson Foundation

Kern Autism Network-Autism Society Affiliate Chapter

Kershaw County DSN Self-Advocacy Group

Ketchup With a Side of Autism

Kev's Anti Autism Bullying global Campaign

Kevin Healey

Kidgenius Inc. Proud host of the Autism Parent Summit

Kieran's Autism Journey

Kingston Special Education Parent Group

Know Autism?

Kreed's World: A Complex Journey Through Autism

Lake County of Autism Society of Illinois

Laurens County Special Needs Foundation

LETS FACE IT

Letters From a Spectrum Mom

Life of Bri

Life On The Autism Rollercoaster

Life with the Bearded Js

Living In The World of Autism

Lizzy the Lezzy

Long Island Bikers for Autism

Looking In / Looking Out - Our Autism and ADHD Family

Loving Little Lennie

Maddox's Autism Chronicle

Maddy's Closet

Makiyla-Rose SWAN

Mamas Uncensored

Marie's Garden for Autism and Asperger's

Marion-Dillon Foundation Board

Mary's Mash-up

May I Be Excused, My Brain is Full - Olivia's Asperger's Story

Mental Health and Invisible Illness Resources

Michael Adam's Struggles with ADHD and Anxiety

Mile in His Shoes

Missing Piece Awareness

Mixing the Autism Cocktail

Mom for the Win

Mom's Zoo

Mom2Mom

Mommies of Miracles

Mommy Needs Wine

Moms & Dads Against Hazing and Bullying

Moms Against Bullying

Momtisms

Monkey Business

Moses Moms, USA

Mother Autism

Mother Autism

Mothers Against Bullying

Mothers and Fathers Against Bullying

Mum Talks Autism- Page

Mum Talks Autism: Laughter, Giggles and Inspirational Quotes

My Aspergers Child

My Autism Day

My Awesome Aspie

My Creative Aspie Mind

My Family's Journey Through Autism

My Two Au-some Boys

NAA Autism & Safety: Bullying Prevention

National Association of Councils on Developmental Disabilities

National Autism Association

National Autism Association of North Texas

National Autism Conference

National Autism Network

National Autistic Society

National Autistic Society Fundraising

National Down Syndrome Society

National Foundation for Autism Research

National Fragile X Association

NBC News

New York City Walk Now for Autism

New York Collaborates for Autism

Nobullying.com

Non-Verbal Autism, The Severe Side of the Spectrum

Npihc.org

NYCA Charter School

Oh So Busy Mum

Olivers Fight with Learning Delay

Omaha Dodgeball Tournament - Autism Society of Nebraska - Omaha

Once upon a time, a Tbear story

One Mother to Another

One Stop Sensory Shop

Orls

Our Crazy Beautiful Life

Our Special Children Have the Gift of Teaching Us

Our Special Princesses

Overcomebullying.org

Pacer.org/bullying

PACER's National Bullying Prevention Month

Parent Support Network of Rhode Island

Parenthood: Nobody is Perfect

Parenting Aspergers Children - Support Group

Parenting Special Needs Magazine

Parenting with Asperger's Syndrome

ParentMap

Parents & Kids Standing Against Bullying

Parents Advocating Developmental Disabilities

Parents Against Bullying!

Parents Against Cyber-Bullying and Bullying

Parents and Educators Against Common Core Standards

Parents and Everyone for Exceptional People

Parents Autism Project

Parents Corner

Parents Helping Parents

Parents Helping Parents of Whyoming, Inc.

Parents Helping Parents X 9

Parents Magazine

Parents of Autistic Kidz

Parents of Children with ADHD

Parents of Children with Special Needs

Parents of Kids in Special Education

Parents of Premies Day

Parents of Special Needs Children in America - A Support Group

Parents Reaching Out to Parents of SC, Inc.

Parents Talking Asperger's

PEN Project

People Power

Peoria Regional Autism Society

Pieces of Grayson

Play4Autism

Positively Autistic

Powell Spring 5K

Prayers for Kayla Parcak

Premie: Love, Life, Motherhood

Project Inclusion

Proud Autism Mama

Punk Rock Papa

Puzzling Peter

Queer Aspie Community

Rain Mom

Rainbow Miracles - Raising Autism Awareness Together

Raising a Child with Autism: From a Mother's Point of View

Raising a Drama Queen: Musings and Insights in Bipolar Land

Random Acts of Autism

Reaching for the Stars Self-Advocacy Group

Relax-It's Just Autism

Renegade Ryken

Resources for Autism

Resources for Families Who Have Children with Special Needs

RespectAbility

Rise Against Bullying

Rock That Ausome

Rock'n 4 Autism

Samantha's Chiari Journey

Save Our Sons

SensAble Learning LLC

Sensory Processing Disorder Parent Support

Severe Autism Awareness Page

Shares for Prayers

Sharing Stories Support Page

Simple, Smart, Sane, Mom

Single Autism Dad

Single Mom/Autistic Son

Single Parents Helping Single Parents

Single Parents of Child with Autism

Single Parents of Children with Autism

SLAP: Aka, Strong Loving Autism Parents

Sleepless in Autism

Smiles for Phia

South Carolina Partnership of Disability Organizations

South Texas Autism

South Texas Autism and Asperger's Resource-RSV

SPD & Autism Spectrum Disorder VS Ryder Man

Speak Out in Support of Epilepsy and Autism

Speaking Autism

Special Education Advocacy with Amy

Special Education for the Special Children

Special Education Resources from Jessica Kingsley Publishers

Special Education: Survival Tips for parents

Special Gifts

Special Learning, Inc.

Special Miracles, Downs Syndrome

Special Needs Advocates for parents of Georgia

Special Needs Appreciation

Special Needs Kids

Special Needs Network

Special Needs Orange County

Special Olympics

Special Olympics Nebraska

Special Olympics Texas

Special Olympics Texas-Big Country Area

Special Olympics Texas-South Plains Area

Special Olympics Texas-South Texas Area

Special Olympics World Games Los Angeles 2015

Spectrum and Pizza

Spectrum of Color, Inc.

Spectrum Warriors: The ABC's of Life in the Spectrum - Tips For Parents

Spread the Word to End the Word

Spreading Sunshine - David Sacran

Statewide Parent Advocacy Network Inc.

Stomp Out Bullying

Stop Bullying: Speak Up

Stop Bullying

Stop Hurting Kids Campaign

Stopcyberbullying.org

Stuart Duncan - Autism from a Father's Point of View

Stumbling Along the Spectrum

Sugar Snap Peas: Autism, Biliary Atresia, & General Parenting Crazyness

Summer all year round

Summit Centre Parent Support Group & Sibling Support Group

Summit County Developmental Disabilities Board

Super Chase - The Incredible Adventures of a Real Life Super Hero.

Super Heroes of Autism Niagra

Support Children with Down Syndrome

Support for Parents of Children with ADD/ADHD

Support for Parents of Children with Bipolar and Mood Disorders

Support Group for Parents with Autistic Children.

Support Group for Parents with Disabled Children

Supporting Children with Special Educational Needs

Sweet Southern Autism Mama

Tales of a Single Mom Raising a Child with Autism

Tales of an Overworked Mom

Talk About Curing Autism

Talk About Curing Autism-TACA Texas Chapter

Talking Matters

Tattooed Parents 101

Team Davy's Autism Atlas: Finding Our Bearings

Team Tommy - Touched By Autism

Texarkana Autism

Texas Autism Advocacy

Texas Autism PLAY Project, LLC

Texas Chapter of Autism MX

The A-Word

The Aspie Mom

The Aspie World

The Autism Site

The Autism Society of America

The Autism Society of Greater Cleveland

The Autism Society of NC- Moore County

The Autism Trust USA

The Autistic Self-Advocacy Network

The Beautiful Life- Autism Advocacy and Support

The Boy Legged Cowboy

The BULLY Project

The Busy Mom Chronicles

The Color of Autism Foundation

The Creaky Cocoa Autism Mom

The Daddy Diaries

The Ellen DeGeneres Show

The Futures Rosie

The Heather and Liam Connection

The Inclusion Campaign

The Journey to Solomon's Voice

The Mighty

The New HOT 95-7

The Rainbow Children

The Thinking Mom's Revolution

Thinking Person's Guide to Autism

This Ausome Family

Threshold Center for Autism

Tim's Big Heart Foundation

Tinysuperheroes.com

Toys AUcross America

Treatment and Research Institute for Autism Spectrum Disorders

Tri-Development of Aiken County, Inc

Wake County Chapter of the Autism Society

Wake Up for Autism

Walk Now for Autism Speaks - Southern New Jersey

Walking With Drake

Walking with Malachi on this autism journey.

Warner's Corner Toys

We Called Him Lucky

We Rock for Autism

What it's Like: Michael's Mommy, Meltdowns, Mischief, and Minions

Where's Your Pants? and Other Things Parents of Children with Autism Say

Whole Children

World Autism Awareness Day - Stand Up for Autism

YAHOO Parenting

Zach Meets World, Growing Up w/Autism

