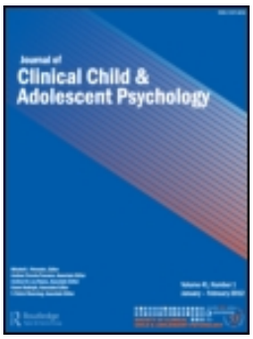

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Journal of Clinical Child & Adolescent Psychology

ISSN: 1537-4416 (Print) 1537-4424 (Online) Journal homepage: www.tandfonline.com/journals/hcap20

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To cite this article: Paulo A. Graziano, Rosmary Ros, Sarah Haas, Katie Hart, Janine Slavec, Daniel Waschbusch & Alexis Garcia (2016) Assessing Callous-Unemotional Traits in Preschool Children With Disruptive Behavior Problems Using Peer Reports, Journal of Clinical Child & Adolescent Psychology, 45:2, 201-214, DOI: 10.1080/15374416.2014.971460

To link to this article: https://doi.org/10.1080/15374416.2014.971460

Journal of Clinical Child & Adolescent Psychology, 45(2), 201–214, 2016

ISSN: 1537-4416 print/1537-4424 online
DOI: 10.1080/15374416.2014.971460

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Assessing Callous-Unemotional Traits in Preschool Children With Disruptive Behavior Problems Using Peer Reports

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The goal of this study was to examine the extent to which preschoolers with externalizing behavior problems (EBP) can identify behaviors indicative of callous-unemotional (CU) traits among their peers. Participants for this study included 86 preschool children (69% boys; $M_{age} = 5.07$ years) with at-risk or clinically elevated levels of EBP who were attending a summer treatment camp. Data collected from the children, their peers, and the counselors who worked at the summer camp examined preschoolers' social preference, likability, and behaviors indicative of CU. Parents and preschool teachers also reported on children's CU traits and severity of behavioral impairment, as well as school readiness. Peer nominations of CU traits showed (a) excellent factor structure as evidenced by clear CU items (e.g., "don't feel bad when they do something wrong") versus more prosocial items ("share," "cooperate"); (b) moderate construct validity when compared to counselor reports of the CU factor as well as preschool teacher reported ratings of CU traits and severity of behavioral impairment; and (c) good utility as evidenced by associations with peer and counselor rated social preference, likability, and school readiness measures as rated by both parents and preschool teachers. These findings indicate that as early as preschool, children with EBP can identify peers who engage in behaviors indicative of CU traits, which have significant implications for children's social status and overall school readiness.

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Children with conduct problems (CP), commonly identified as either having oppositional defiant disorder (ODD) or conduct disorder (CD; *Diagnostic and Statistical Manual of Mental Disorders* [4th ed., text rev.; *DSM-IV-TR*], American Psychiatric Association, 2000),

comprise about 5%–10% of youth ages 8–16 (Costello & Angold, 2000). Prevalence of CP is even higher in preschool populations ranging from 7% to 25% (Webster-Stratton & Hammond, 1998). A majority of children with CP also meet diagnostic criteria for attention-deficit/hyperactivity disorder (ADHD; Loeber, Green, Keenan, & Lahey, 1995). Children with CP experience a variety of negative outcomes including academic underachievement (see Hinshaw, 1992, for a review), difficulties with social interactions (Coolahan, Fantuzzo, Mendez, & McDermott, 2000; Wehby, Dodge, & Valente, 1993), and increased risk for delinquency (Lahey et al., 2006; see Murray & Farrington, 2010, for a review). Given the negative outcomes associated with CP, additional costs for a child with CP exceed $70,000 within a 7-year period (Foster & Jones, 2005). These costs heighten the need to understand the risk and protective factors that shape the course of CP and mechanisms by which later outcomes are predicted.

Although numerous risk factors have been recognized as important for understanding the development of antisocial/aggressive behavior, more recent research has highlighted the importance of callous-unemotional (CU) traits, which refer to low levels of guilt, empathy, and caring for others (Frick, Ray, Thornton, & Kahn, 2014). It is important to note that CU traits represent only one dimension of the broader construct of psychopathy, which also includes narcissism, fearless dominance, and behavioral disinhibition marked by impulsive-antisocial behavior (see Frick et al., 2014; Patrick, 2010, for a review). Psychopathy research examining downward extensions of CU traits to child samples have indeed confirmed that children with CU traits, in addition to CP, display characteristics analogous to those of adult psychopathy, including disregard for fear and punishment and increased aggression (C. T. Barry et al., 2000; Pardini, 2006). Young children with ODD and elevated CU traits are also more likely to have temperamental profiles marked by fearlessness and are less likely to become upset (measured during a Face-to-Face Still Face task both behaviorally and by cardiac response) compared to both children with pure ODD and healthy controls (Willoughby, Waschbusch, Moore, & Propper, 2011). Substantial research has focused on examining CU traits as an important characteristic for identifying the most pervasive, severe, and aggressive patterns of antisocial behavior (see Frick et al., 2014, for a recent review).

Children with CU traits and CP experience more aggressive, pervasive, and disruptive behaviors across age groups (Enebrink, Andershed, & Längström, 2005; Hawes & Dadds, 2005; Lynam, Miller, Vachon, Loeber, & Stouthamer-Loeber, 2009). In a school-aged sample of children enrolled in a summer treatment program for externalizing behavior problems, children with CP and CU demonstrated diminished overall treatment response (Waschbusch, Carrey, Willoughby, King, & Andrade, 2007) and less improvement in social skills and problem-solving skills when compared to children with CP alone (Haas et al., 2011). Hawes and Dadds (2005) also found that boys with CU and ODD displayed lower treatment response to behavioral parent training and were particularly less responsive to time-outs. Furthermore, the presence of CU traits places children at increased risk for delinquency in adolescence (Pardini, 2006; Pardini, Obradovic, & Loeber, 2006) and continued use of antisocial behavior in adulthood (Lynam et al., 2009).

CU TRAITS IN PRESCHOOLERS

Few studies have examined the role of CU traits in preschoolers, although initial evidence suggests that as young as age 3, measurements of callousness are predictive of later ODD and CD diagnoses (Ezpeleta, de la Osa, Granero, Penelo, & Domènech, 2013) and are separate from general symptoms of externalizing behavior problems (Willoughby et al., 2011). In addition, preschoolers who are temperamentally characterized as behaviorally uninhibited (i.e., low on fearfulness and avoidance of novel, strange, or threatening stimuli; Kochanska, Gross, Lin, & Nichols, 2002) display lower levels of guilt and empathy (Cornell & Frick, 2007), which are associated with increased levels of disruptive behaviors (Kochanska, Barry, Jimenez, Hollatz, & Woodard, 2009) and predictive of current and later childhood aggression (Findlay, Girardi, & Coplan, 2006; Gower & Crick, 2011; Raine, Reynolds, Venables, Mednick, & Farrington, 1998). The dimensions of CU traits (i.e., low levels of guilt, empathy, caring) and fearlessness (marked by a behaviorally uninhibited temperament) have also been found to separately predict aggressive behavior (Kimonis et al., 2006), thus further highlighting the discriminability of the CU construct in young children.

The factor structure of CU traits themselves has also received significant attention. Initial theoretical and empirical work on the Inventory of Callous-Unemotional Traits (ICU; Frick, 2004) suggested a bifactor model, which included a general CU factor on which all items loaded and three specific factors, consisting of callousness, uncaring, and lack of emotionality (Essau, Sasagawa, & Frick, 2006; Ezpeleta et al., 2013; Kimonis et al., 2008). However, as reviewed by Willoughby, Mills-Koonce, Waschbusch, and Gottfredson (2014), a source of theoretical and practical importance is whether prosocial behaviors, which can be defined as voluntary actions taken for the benefit of others and can include dimensions such as helping, sharing, or expressing concern and support (Eisenberg, 1986), should be part of a general CU factor. For example, low ratings on prosocial items is how the ICU measures the Uncaring scale that

is often included in the general CU factor. However, recently with a large sample size of first graders, Willoughby et al. (2014) found evidence for a two-factor model distinguishing the presence of *callous behaviors* versus the presence of *empathic–prosocial behaviors*. It remains unclear the extent to which such callous traits versus poor prosocial skills can be differentiated in preschoolers.

MEASUREMENT OF CU TRAITS

Given the stability of CU traits and deleterious outcomes just reviewed, it is imperative to determine the optimal way to identify CU traits in preschoolers. Although studies demonstrate the validity of CU traits as a distinct construct apart from other externalizing behaviors (Dadds, Fraser, Frost, & Hawes, 2005; Frick et al., 2014), the majority of research relies on parent, teacher, and self-report measures (Antisocial Process Screening Device [APSD]; Frick & Hare, 2001; Psychopathy Checklist, Forth, Kosson, & Hare, 2003). Studies on the internal consistency of CU traits reveal limitations in the psychometric properties of the APSD for measuring CU traits (Dong, Wu, & Waldman, 2014; Poythress et al., 2006). Although the development of the ICU (Frick, 2004) has improved the measurement of CU traits, it is limited to parent, teacher, and self-report measures. In addition, as reviewed earlier, distinguishing callous behaviors from the presence of more prosocial behaviors continues to be a source of debate.

The use of peer data may be especially valuable for understanding the social deficits associated with CU traits (Barry, Barry, Deming, & Lochman, 2008; Frick & Dantagnan, 2005) and how peers perceive such traits. Few studies have examined the link between CU traits and sociometric measures of social competence. In contrast to Haas et al. (2011) finding that CP alone, not CU, was predictive of peer rejection, Piatigorsky and Hinshaw (2004) found that psychopathy dimension scores indicative of CU traits were associated with negative peer nominations. In addition, peer-rated social standing and preference are related to CU traits (T. D. Barry et al., 2008). These findings suggest that children with CU traits are perceived negatively by school-aged peers. However, a significant gap in the literature remains in terms of whether younger preschool children, who can report valid sociometric ratings that are comparable to teacher reports of social competence (Denham & McKinley, 1993; Renk & Phares, 2004), can also detect traits indicative of CU and whether these traits are related to their social preference and likeability ratings.

In addition, no research, regardless of children's age, has examined whether peers can differentially report on behaviors indicative of CU traits, specifically callousness, versus those behaviors indicative of low levels of prosocial behaviors. Some studies have integrated low levels of prosocial skills as either part of a greater CU traits factor (Dadds et al., 2005) or a proxy for CU traits (Musser, Galloway-Long, Frick, & Nigg, 2013). As highlighted earlier, there are significant theoretical and practical implications for establishing a distinction between callous behaviors and prosocial behaviors when discussing CU traits. Hence, examining this topic within a preschool sample while using peer data may provide more insight into the early development of CU traits and whether such traits are distinguishable from low levels of prosocial skills.

Lastly, academic underachievement has also been associated with CU traits (Ciucci, Baroncelli, Franchi, Golmaryami, & Frick, 2013; Vaughn et al., 2011), although research has been limited by examination of CU traits and academics only in school-aged populations. Given that school readiness is a broader construct accounting for academic, behavioral, and socioemotional readiness for school, examining the role of CU traits in early school readiness may yield greater insights to better identify and address the needs of this high-risk group early on.

GOALS OF THE CURRENT STUDY

The goal of this study was to examine (a) whether preschool children with externalizing behavior problems (EBP), who were attending a summer treatment camp, could identify peers who engaged in behaviors indicative of CU traits versus those simply engaged in low levels of prosocial behaviors and (b) whether such peer nominations of CU traits were associated with adult ratings (counselors, teachers, and parents) of CU traits and severity of behavioral impairment. Finally, it was important to determine not just whether CU traits relate to school readiness outcomes, but also whether peer nominations of CU traits offer any unique information toward the association of such outcomes after accounting for the more easily obtained parent and/or teacher reports. Data were collected from the children, their peers, and the counselors who worked at the summer camp to measure preschoolers' social preference and likability, prosocial skills, and behaviors indicative of CU through nominations. Parents and teachers also filled out rating scales regarding children's CU traits, severity of behavioral impairment, and school readiness. We expected that (a) preschool children with EBP would be able to differentiate peers who engage in behaviors indicative of CU traits versus simply low prosocial skills, (b) such ratings would significantly correlate with adult ratings, and (c) peer nominations of CU traits would provide unique information toward the association with school readiness, even after controlling for adult ratings,

such that those who were reported as having higher rates of CU traits would be reported by parents and teachers as being less ready to succeed in school.

METHOD

Participants and Recruitment

The study took place in a large urban southeastern city in the United States with a large Latino population. Children and their caregivers were recruited from local preschool and mental health agencies via brochures, radio and newspaper ads, and open houses/parent workshops. Interested parents were asked to call or speak with study staff to have the study explained to them and to complete screening questions to determine eligibility. Participants were required to (a) have an externalizing problems composite *t* score of 60 or above on the parent ($M = 66.21$, $SD = 13.30$) or teacher ($M = 67.12$, $SD = 13.89$) Behavior Assessment System for Children, Second Edition (BASC-2; Reynolds & Kamphaus, 2006), (b) be enrolled in preschool during the previous year, (c) have an estimated IQ of 70 or higher ($M = 91.19$), (d) have no confirmed history of autistic or psychotic disorder, and (e) be able to attend an 8-week summer program prior to the start of the preschool or kindergarten year (see Graziano et al., 2014 for a full description). Twenty-four families were screened out due to not meeting the inclusion criteria.

The final participating sample consisted of 86 preschool children (69% boys) with at-risk or clinically elevated levels of EBP whose parents provided consent to participate in the study. The mean age of the participating children was 5.07 years with Hollingshead socioeconomic status (SES) scores in the lower to middle-class range ($M = 42.95$, $SD = 13.12$). Further demographic characteristics of this sample are presented in Table 1. According to the Computerized Diagnostic Interview Schedule for Children (C-DISC; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000), which was conducted by mental health graduate students under the supervision of a licensed psychologist, 47% of children met *DSM-IV* criteria for both ADHD and ODD, whereas an additional 34% met criteria for ADHD only. Only one child was taking a stimulant medication during the study.

TABLE 1
Demographics for Sample

Characteristic	*% in Sample*
Child Race/Ethnicity (%)	
Non-Hispanic White	11.9
African American	5.9
Latino	77.1
Other	5.1
Family Status (%)	
Intact Two-Parent Household	63.4
Living With a Partner	4.9
Single Parent Household–Divorced/Separated	18.8
Single Parent Household–Never Married	10.9
Single Parent Household–Widowed	2.0
Reporter of Questionnaires	
Mothers Only	89.1
Fathers Only	4.0
Mothers and Fathers Jointly	5.9
Other (Grandmother)	1.0
Referred from (%)	
Self-Referred	32.6
Preschool	25.6
Physician/Mental Health Professional	27.8
Friends	14.0

Study Design and Procedure

This study was approved by the university's Institutional Review Board. All families participated in a pretreatment assessment scheduled prior to the start of the summer treatment program. The feasibility and effectiveness of providing a summer treatment program intervention for prekindergarteners (STP-PreK) to improve preschoolers with EBP's school readiness outcomes has been reported elsewhere (Graziano et al., 2014). For this study, we were interested in examining the extent to which children in the camp could identify peers who were engaging in behaviors indicative of CU traits. As part of the pretreatment assessment, parents completed the C-DISC (Shaffer et al., 2000) and various questionnaires regarding their children's school readiness. Only one parent from each family was required to complete questionnaires for each child. Other than receiving the intervention at either no cost via a federal grant or at a subsidized cost via a local grant, families did not receive any additional compensation for completing questionnaires at the pretreatment assessment. Similar questionnaires were also obtained from children's preschool teachers, who were compensated with a $25 gift card.

Peer and Counselor Nominations

During the last week of the 8-week camp, children individually participated in an assessment of peer-reported behavior and peer status following Coie, Dodge, and Coppotelli's (1983) procedure. As typically done with younger children, pictures of classmates were used as prompts during the interview to aid in gathering reliable peer-report data. Children were individually presented with color pictures of each of their classmates and asked to choose the three kids in the classroom they liked the most and the three kids in the classroom they liked the least. Children also rated every classmate, according to procedures developed by Asher, Singleton, Tinsley, and Hymel (1979), by pointing to a happy face ("children you like a lot"), a neutral face ("children you kind

of like''), or a sad face (''children you don't like''). Last, following procedures from Keane and Calkins (2004) in nominating classmates for behavioral categories, children were asked to pick the three kids in the classroom who (a) ''don't feel bad when they do something wrong,'' (b) ''don't care if they get into trouble,'' (c) ''enjoys being mean,'' (d) ''are sneaky,'' (e) ''like to help and cooperate,'' (f) ''share the most,'' and (g) ''ignore mean or bad things done to them and ask for help nicely.'' Of note, children during the STP-PreK were encouraged not to retaliate against negative actions from peers and instead ignore without whining and appropriately seek help from the counselors.

Behavioral categories consistent with CU traits (''don't feel bad when they do something wrong'' and ''don't care if they get into trouble'') were created based on the ICU (Frick, 2004). ''Enjoy being mean'' was added as a behavioral category indicative of CU due to the construct of *meanness* being part of the triarchic model of psychopathy (Patrick, Fowles, & Krueger, 2009) and equated with callousness in children (Patrick, 2010). ''Are sneaky'' was also added given previous research using this item as a measure of deceitfulness loading onto a factor of CU traits (Hyde et al., 2013). Behavior categories indicative of prosocial skills (''like to help and cooperate,'' ''share the most,'' and ''ignore mean or bad things done to them and ask for help nicely'') were chosen given that these were the skills that children were encouraged to use throughout the summer camp program. Given the young age of the participants, sample items (e.g., ''Show me three kids that have blonde hair.'') were used. Procedures were explained and children were asked sample items until they appeared to understand the task. Interviewers consisted of graduate students who were rigorously trained on procedures to ensure quality data collection. Scripts detailing specific examples of the behaviors of interest were provided to explain these constructs to children who were confused or having difficulty. The pool of potential nominees for the peer nomination procedures included other children in the same classrooms (14–16 children). All classrooms were comparable in gender distribution and race/ethnicity, with one classroom ($n = 16$) being significantly younger ($M = 4.3$ years, $SD = .20$, $F = 72.28$, $p < .05$) than the other classrooms ($M = 5.3$ years, $SD = .41$). Children in the rest of the classrooms were comparable in age ($F = .61$, $p > .05$). For demographic information on the entire sample see Table 1. Thirty undergraduate counselors who worked in the summer camp (five counselors per class of 14–16 children) also provided their own nominations for each of the aforementioned behavioral categories (e.g., impressions of most/least liked, children who enjoy being mean, etc.) and individual ratings. Counselors did not participate in the child portion of the task and thus were blinded to the children's ratings.

Screening Measures

Externalizing behavior problems. To assess children's behavioral functioning, parents and teachers completed the BASC-2 (Reynolds & Kamphaus, 2004). The BASC-2 is a widely used behavior checklist that taps emotional and behavioral domains of children's functioning. Each item on the BASC-2 is rated on a 4-point scale with respect to the frequency of occurrence (*never, sometimes, often*, and *almost always*). The measure yields scores on broad internalizing, externalizing, and behavior symptom domains as well as specific adaptive/social functioning skills scales. The BASC-2 has well-established internal consistency, reliability, and validity (Reynolds & Kamphaus, 2004). For the purposes of this study and as the primary screening measure, the externalizing behavior problem composite t scores were used (αs for parent and teacher reports = .65–.80).

Intelligence. For screening purposes, children were administered the Vocabulary and Block Design subtests of the Wechsler Preschool and Primary Scale of Intelligence–Third or Fourth Edition (Wechsler, 2002, 2012). These two subtests are useful for rapid screening and are reliable in estimating children's Full Scale IQ (Sattler & Dumont, 2004).

Measures

Peer status and behavioral nominations. The total number of peer and counselor nominations each child received was calculated and standardized within each classroom in order to derive z scores representing the number of ''like least'' and ''like most'' nominations. The standardized ''like least'' nominations were subtracted from the standardized ''like most nominations,'' then restandardized to generate a Social Preference Index score based on nominations (Coie et al., 1983). This procedure is the accepted form of establishing a child's overall peer status within the classroom. As social preference scores decrease, a child's overall peer status also decreases. Peers' and counselors' individual likability ratings of each child (smiley, neutral, sad faces; Asher et al., 1979) were also calculated and standardized within each classroom. Counselor ratings were averaged and standardized across the five counselors in each classroom ($M\alpha = .76$ per classroom; range = .61–.88). The standardized social preference scores based on nominations and individual likability scores based on ratings by peers and counselors were used in the current study. Z scores were also computed for all other items: (a) ''don't feel bad when they do something wrong,'' (b) ''don't care if they get into trouble,'' (c) ''enjoy being mean,'' (d) ''are sneaky,'' (e) ''like to help and cooperate,'' (f) ''share the most,'' and (g) ''ignore mean or bad things done to them and ask for help nicely.'' Based

on CU measures, Items a through d were operationalized as behaviors indicative of CU traits (Frick, 2004), whereas Items e through g were operationalized as children's prosocial behaviors. These were used to generate peer and counselor reported nominations of CU traits and nominations of prosocial skills.

CU traits. Parents and preschool teachers answered five questions derived from well-established and reliable measures of CU including the APSD (Frick & Hare, 2001), the ICU (Frick, 2004), and the Callous Unemotional Scale of the Nova Scotia Modified IOWA Conners (Waschbusch et al., 2004). Provided that previous research has shown briefer measures of psychopathy to yield comparable indices of reliability and validity when identifying CU traits (van Baardewijk et al., 2010), we chose five questions common to each of the aforementioned measures. The items were rated on a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*very much*) and included the following: seems to enjoy being mean, is cold or uncaring, lacks remorse for misbehavior, does not seem to respond or care about punishment, uses or cons other people to get what he/she wants. The CU scale was computed by averaging these items ($\alpha = .75$ for parent and .85 for teacher). Parent and teacher CU ratings were converted to z scores.

School readiness. Parents and teachers completed the Kindergarten Behavior and Academic Competency Scale (Hart & Graziano, 2013), a 24-item questionnaire that requires parents and teachers to rate the extent to which their child is ready for kindergarten across various domains such as following classroom rules, completing academic work, and engaging in positive social behaviors along a 5-point scale (*poor, fair, average, above average, excellent*). For the present study, the overall kindergarten readiness item was used as a measure of kindergarten readiness, in which parents and teachers rate, on a scale of 1 to 100, how ready they feel their child is in meeting the academic and behavioral demands of kindergarten compared to other same-aged children with higher scores indicating greater kindergarten readiness. Although the Kindergarten Behavior and Academic Competency Scale is a measure in development, preliminary data indicate that the overall readiness item shows excellent test–retest reliability (intraclass correlation coefficient = .82) and is sensitive to treatment effects (Graziano, Slavec, Hart, Garcia, & Pelham, 2014).

Behavioral impairment. Parents and teachers completed the Impairment Rating Scale (IRS; Fabiano et al., 2006). The parent version of the IRS asks parents to rate their child on a scale from 0 (*no problem/definitely does not need treatment or special services*) to 6 (*extreme problem/definitely needs treatment or special services*) on seven domains related to behavioral impairment (relationship with peers, relationship with siblings, relationship with parents, academic progress, self-esteem, influence on family functioning, and overall impairment). The teacher version of the IRS asks teachers to rate the child similarly on six domains (relationship with peers, relationship with teacher, academic progress, self-esteem, influence on classroom functioning, and overall impairment). The current study examined the academic impairment item that measured the extent to which children's behavior problems were impairing their academic progress in the classroom as well as the overall severity of behavioral impairment.

Data analysis plan. All analyses were conducted using the Statistical Package for the Social Sciences, version 19.0. For the measures used, there were no missing data for the peer or counselor derived nomination items or parent report. However, teacher data were missing from 34 participants. Reasons for missing teacher data included but were not limited to inability to contact teacher, ratings not returned, items missing, and so on. Little's Missing Completely at Random Test revealed that these 34 cases were missing completely at random ($\chi^2 = .09$, $p > .05$). Multiple imputation with 10 imputations was conducted, which is sufficient to accurately estimate the data for this sample size (Rubin, 1987). Factor analyses were first conducted to determine the extent to which children and counselors' nominations differentiated between CU and Prosocial factors. Next, associations between the derived factor(s) and demographic variables were examined. To examine the validity of peer nomination reports of CU, Pearson's correlations were conducted examining the derived CU factor(s) with parent and teacher ratings of externalizing behavior problems and severity of behavioral impairment, counselor-derived CU factor(s), and parent and teacher reports of CU traits. Correlations were also used to examine the association between the derived CU factor(s) and children's social preference, likability, and school readiness. Last, hierarchical regression analyses were conducted to examine the extent to which peer, counselor, teacher, and parent reports of CU traits uniquely related to school readiness.

RESULTS

Preliminary Analyses: Factor Analyses

Principal component factor analyses with a promax rotation, conducted separately for peers' and counselors' reports, were first conducted to determine the extent to which the nominations loaded into a single

CU factor. The seven indicator variables were the same for peers' and counselors' reports: (a) "don't feel bad when they do something wrong," (b) "don't care if they get into trouble," (c) "enjoy being mean," (d) "are sneaky," (e) "like to help and cooperate," (f) "share the most," and (g) "ignore mean or bad things done to them and ask for help nicely." From these analyses, two factors emerged with an eigenvalue above 1 that seem to be measuring both CU and Prosocial behaviors. Within the peer reports, the first factor ($\lambda = 3.28$) explained 46.80% of the total variance across items for this sample, whereas the second factor ($\lambda = 1.26$) explained 17.94% of the total variance across the items for this sample. Similarly within the counselors' reports, the first factor ($\lambda = 3.54$) explained 50.60% of the total variance across items for this sample, whereas the second factor ($\lambda = 1.16$) explained 16.50% of the total variance across the items for this sample. Table 2 depicts the results of the factor analyses and the loadings of our indicator items on each factor. Consistent with the original intent of the items as well as across reporters, the first factor was referred to as the Callous–Unemotional factor, as Items a through d positively loaded on this factor. The second factor was referred to as the Prosocial factor, as only Items e through g positively loaded on this factor. Guided by the results of the factor analyses, subsequent analyses used an overall CU factor (average of Items a–d; αs for peers and counselors = .79−.81) and an overall Prosocial factor (average of Items e–g; αs for peers and counselors = .75). Descriptive statistics for these factors and all other study variables are presented in Table 3.

Preliminary Analyses: Demographic Variables

An analysis of the demographic variables revealed a significant association between children's sex and their nominations of CU traits, $F(4, 80) = 3.72$, $p < .05$, partial $\eta^2 = .24$. Specifically, boys had significantly higher peer ($M = .23$, $SD = .82$) and counselor ($M = .23$, $SD = .94$) CU factor z scores compared to girls ($M = -.38$, $SD = .56$ and $M = -.34$, $SD = .53$, respectively). On the other hand, parent report of CU traits were higher among girls ($M = .22$, $SD = 1.25$) compared to boys ($M = -.39$, $SD = .56$). In addition, SES was negatively related to teacher report of CU traits ($r = -.31$, $p < .05$). No other significant associations between demographic variables and CU ratings/nominations emerged. Subsequently, children's sex and SES were controlled in all subsequent analyses.

Validity of Peer-Reported CU

As seen in Table 4, peer nominations of CU traits were significantly correlated with counselor nominations of CU traits ($pr = .45$, $p < .001$) and marginally correlated with preschool teacher's CU ratings ($pr = .19$, $p < .09$). The counselor nominations of CU traits were also significantly associated with preschool teacher's CU ratings ($pr = .25$, $p < .05$). Parents' CU ratings were not significantly associated with any other variable. In terms of its associations with severity of behavior problems, peer nominations of CU traits were not significantly associated with parent or teacher report of externalizing behavior problems (prs = .09, $p > .05$). However, peer nominations of CU traits were significantly associated with both parent and teacher reports of overall severity of behavioral impairment ($pr = .21$ and .33, $p < .05$, respectively).

Associations Between CU Ratings, Prosocial Behaviors, and Social Preference

Both peer and counselor nominations of CU traits were significantly associated with social preference scores based on nominations and individual likability ratings as reported by peers and counselors (prs = −.27 to −.61, ps < .05 to < .001), as well as the Prosocial Behaviors factor as reported by peer and counselor nominations (prs = −.34 to −.48, ps < .05 to <.001). Preschooler

TABLE 2
Factor Loadings From Principal Components Factor Analysis

	CU Factor		*Prosocial Factor*	
Items	*Peer Report*	*Counselor Report*	*Peer Report*	*Counselor Report*
"Don't feel bad when they do something wrong"	.85	.90	−.46	−.42
"Don't care if they get into trouble"	.72	.59	−.23	−.34
"Enjoy being mean"	.79	.89	−.35	−.48
"Are sneaky"	.75	.85	−.28	−.35
"Like to help and cooperate"	−.57	−.46	.81	.81
"Share the most"	−.15	−.29	.81	.75
"Ignore mean or bad things done to them and ask for help nicely"	−.42	−.45	.82	.90

Note: CU = callous–unemotional traits.

TABLE 3
Descriptive Statistics for Outcome Measures

	M	*SD*	*Min*	*Max*
Screening Measures				
BASC-2: EBP Composite *T* Score: Parent Report	66.21	13.30	41	115
BASC-2: EBP Composite *T* Score: Teacher Report	67.13	13.89	43	114
Child Full Scale IQ Estimate	91.19	14.27	63	127
CU, Prosocial, Social Preference, Likability Measures				
CU Factor *z* Score: Peer Report	0	.77	−1.21	1.88
CU Factor *z* Score: Counselor Report	0	.85	−.71	3.33
CU Rating *z* Score: Parent Report	−.01	.94	−.84	3.42
CU Rating *z* Score: Preschool Teacher Report	−.06	.96	−.83	3.01
Prosocial Factor *z* Score: Peer Report	0	.79	−1.26	2.16
Prosocial Factor *z* Score: Counselor Report	0	.82	−.72	2.59
Social Preference *z* Score: Peer Report	0	.97	−1.98	2.35
Social Preference *z* Score: Counselor Report	0	1.00	−2.41	2.13
Likability *z* Score: Peer Report	0	.97	−2.12	2.16
Likability *z* Score: Counselor Report	0	1.00	−2.88	1.36
School Readiness Measures				
KBACS: Overall Raw Score: Parent Report	43.93	23.35	0	100
KBACS: Overall Raw Score: Teacher Report	48.61	23.20	0	90
IRS: Academic Impairment: Parent Report	3.80	1.81	0	6
IRS: Academic Impairment: Teacher Report	3.92	2.01	0	6
IRS: Behavioral Impairment: Parent Report	4.49	1.24	0	6
IRS: Behavioral Impairment: Teacher Report	4.39	1.68	0	6

Note: BASC-2 = Behavior Assessment System for Children, 2nd Edition; EBP = externalizing behavior problems; CU = callous–unemotional traits; KBACS = Kindergarten Behavior and Academic Competency Scale; IRS = Impairment Rating Scale.

teacher's CU ratings were also marginally associated with peer-reported likability ratings ($pr = -.23$, $p < .08$) and the counselor nominations of Prosocial Behaviors ($pr = -.26$, $p < .08$). These associations indicated that children who were reported by peers, counselors, and/or preschool teachers as exhibiting greater levels of behaviors indicative of CU traits were less liked by their peers and exhibited less prosocial behaviors. On the other hand, parent report of CU traits was positively associated with peer and counselor likability ratings ($pr = .35$ and $.28$, $p < .05$, respectively) as well as counselor nominations of Prosocial Behaviors ($pr = .35$, $p < .05$).

Associations Between CU Ratings, Prosocial Behaviors, and School Readiness

Peer nominations of CU traits were significantly associated with kindergarten readiness as reported by both

TABLE 4
Correlations Among Variables

Variable	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*
1. CU Factor: Peer Report	—													
2. CU Factor: Counselor Report	.45***	—												
3. CU Rating: Preschool Teacher Report	.19†	.25*	—											
4. CU Rating: Parent Report	−.04	−.16	.06	—										
5. Social Preference: Peer Report	−.27*	−.31*	−.14	.10	—									
6. Social Preference: Counselor Report	−.31*	−.48***	−.17	.16	.37**	—								
7. Likability: Peer Report	−.41**	−.30*	−.23†	.35*	.72***	.39**	—							
8. Likability: Counselor Report	−.11	−.61***	−.16	.28*	.27*	.52***	.22	—						
9. Prosocial Factor: Peer Report	−.41**	−.34*	−.03	.19	.69***	.36**	.72***	.23†	—					
10. Prosocial Factor: Counselor Report	−.49***	−.43**	−.26†	.35*	.39**	.34*	.53***	.34*	.57***	—				
11. KBACS: Overall Raw Score (P)	−.23*	−.09	−.13	−.13	−.03	.15	.04	.11	.08	.21	—			
12. KBACS: Overall Raw Score (T)	−.24*	−.18†	−.38***	−.06	.17	.34**	.16	.22	.16	.15	.39*	—		
13. IRS: Academic Impairment (P)	.31**	.06	.04	.15	−.09	−.31**	−.04	−.10	−.06	−.03	−.36**	−.31*	—	
14. IRS: Academic Impairment (T)	.18	.14	.33*	.08	−.04	−.21	−.12	−.24†	−.05	−.07	−.34*	−.61***	.24*	—

Note: All analyses controlled for children's sex and socioeconomic status. CU = callous–unemotional traits; KBACS = Kindergarten Behavior and Academic Competency Scale; P = parent-report measure; T = teacher-report measure; IRS = Impairment Rating Scale.
†$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$.

parents ($pr = -.23$, $p < .05$) and preschool teachers ($pr = -.24$, $p < .05$) as well as with academic impairment rated by parents ($pr = .31$, $p < .01$). Counselor nominations of CU traits were marginally associated with kindergarten readiness as reported by preschool teachers ($pr = -.18$, $p < .10$). Preschool teachers' CU ratings were significantly associated with their own academic impairment rating ($pr = .33$, $p < .01$) and kindergarten readiness ($pr = -.38$ $p < .001$). Parents' CU ratings were not significantly associated with any school readiness measures. Last, neither peer nor counselor nominations of Prosocial Behaviors were related to any of the school readiness measures (prs range = $-.03$ to .21, $p > .05$)

Regression Analyses

Regression analyses were conducted to determine whether peer and counselor nominations of CU traits as well as preschool teacher-rated CU ratings were uniquely associated with school readiness while accounting for each other's influence. Neither the parent report of CU traits nor the peer or counselor nominations of Prosocial Behaviors were included in these analyses given the lack of independent correlations with any of the school readiness measures. As seen in Table 5, these analyses revealed that the peer nominations of CU traits uniquely predicted kindergarten readiness as reported by parents ($\beta = -.34$, $p < .05$) and teachers ($\beta = -.27$, $p < .08$) as well as academic impairment as reported by parents ($\beta = -34$, $p < .05$), even after accounting for sex, SES, counselor nominations of CU traits, and preschool teacher CU ratings. Thus, children identified by their peers as displaying high levels of social behaviors indicative of CU traits were rated as being less ready for kindergarten (according to both parents and teachers) and more likely to have academic impairment in the classroom. Preschool teacher ratings of CU traits also provided unique associations with kindergarten readiness ($\beta = -.55$, $p < .01$) and academic impairment ($\beta = .50$, $p < .01$) as rated by the teachers themselves. Teacher ratings of CU traits were not associated with parent measures of readiness or impairment.

TABLE 5
Model for Predicting School Readiness: Parent/Teacher Outcomes

	β	*T Value*	*Model* R^2	R^2 *Change*	*F Change*
KBACS: Overall Kindergarten Readiness Raw Score (P)					
Step 1. Child Sex	.04	.294	.08	.08	2.06
SES	−.38*	−2.45			
Step 2.			.20	.12	2.20†
CU Factor: Peer Report	−.34*	−2.10		—	—
CU Factor: Counselor Report	.08	.506		—	—
CU Rating: Preschool Teacher Report	−.18	−1.13	—	—	—
KBACS: Overall Kindergarten Readiness Raw Score (T)					
Step 1. Child Sex	−.09	−.654	.01	.01	.293
SES	−.44	−2.96**			
Step 2.	—	—	.33	.32	6.57**
CU Factor: Peer Report	−.27†	−1.70	—	—	—
CU Factor: Counselor Report	.03	.165	—	—	—
CU Rating: Preschool Teacher Report	−.55**	−3.67	—	—	—
IRS: Academic Impairment (P)					
Step 1. Child Sex	−.12	−.778	.13	.13	3.43*
SES	.34*	2.21			
Step 2.	—	—	.21	.08	2.40†
CU Factor: Peer Report	.34*	2.11	—	—	—
CU Factor: Counselor Report	−.07	−.446	—	—	—
CU Rating: Preschool Teacher Report	.04	.239	—	—	—
IRS: Academic Impairment (T)					
Step 1. Child Sex	.04	.279	.00	.00	.153
SES	.36*	2.26*			
Step 2.			.23	.23	4.14*
CU Factor: Peer Report	.12	.718	—	—	—
CU Factor: Counselor Report	.04	.250	—	—	—
CU Rating: Preschool Teacher Report	.50**	3.00	—	—	—

Note: KBACS = Kindergarten Behavior and Academic Competency Scale; SES = socioeconomic status; CU = callous–unemotional traits; T = teacher-report measure; IRS = Impairment Rating Scale; P = parent-report measure.
†$p < .10$. *$p < .05$. **$p < .01$.

DISCUSSION

This study supports the notion that as early as preschool, children with externalizing behavior problems can identify peers who engage in behaviors indicative of CU traits. The items that measured behaviors indicative of CU traits utilized for peer nominations showed (a) excellent factor structure as evidenced by clear CU items (''don't feel bad when they do something wrong,'' ''don't care if they get into trouble,'' ''enjoy being mean,'' and ''are sneaky'') versus more prosocial items (''share,'' ''cooperate,'' ''ignore negative behaviors by peers and ask for help nicely''); (b) moderate construct validity when compared to parent and teacher ratings of severity of behavioral impairment, counselor nominations of CU traits, and preschool teacher reports of CU traits; and (c) good utility as evidenced by associations with school readiness measures as rated by both parents and preschool teachers. The implications of our findings are discussed in further detail next.

Due to the prevalent social impairments present among children with CU, some studies have integrated low levels of prosocial skills as either part of a greater CU traits factor (Dadds et al., 2005) or as a proxy for CU traits (Musser et al., 2013). Although prosocial skills are certainly inversely related to CU traits, our study's findings indicate that children can reliably distinguish peers who engage in low levels of prosocial behaviors from those who are more actively demonstrating callousness within social interactions. Although we did not examine the factor structure of CU traits and prosocial behavior in parents or teachers, results from this study do suggest that peers are able to make this distinction, which highlights the usefulness of peer nomination procedures in disentangling children's positive and negative behaviors. More important, CU traits but not prosocial skills were related to school readiness outcomes. Differences in the predictive validity of CU traits versus prosocial skills, particularly in the domain of school readiness, suggest that CU traits (such as lack of regard for punishment or lack of concern about performance) may be tapping into behaviors that more readily affect academic impairment and readiness for school, whereas low levels of prosocial skills may be impacting only social domains as indexed by associations with lower likeability and social preference.

Our results are also consistent with Willoughby et al. (2014)'s recent findings showing among a large sample of first graders that a two-factor model distinguishing empathetic-prosocial items from CU items provides the best fit to the parent version of the ICU (Frick, 2004). Such corroborating findings are important to note given that our factor analysis was not based on the ICU (only two peer nomination CU items were similar in nature) and included more traditional prosocial items (e.g., shares) versus those included as part of uncaring scale of the ICU (e.g., works hard on everything, always tries his/her best). On a related note, our CU factor included the items ''enjoy being mean'' and ''are sneaky.'' Although we included such items given the conceptualization of meanness and deceitfulness within the adult psychopathy literature and previous literature showing that both load into callousness factors (Hyde et al., 2013; Patrick et al., 2009), it is possible that these items are tapping into early manifestations of antisocial behavior. Future studies should examine, within a preschool sample, whether parent and/or teachers can distinguish between prosocial skills and CU traits using the widely available ICU as well as including more traditional prosocial items such as the ones used in this study.

Consistent with other research showing the validity of preschool peer reports (Denham & McKinley, 1993; Renk & Phares, 2004; Walker, 2009), the current study demonstrated that preschool children appear to be able to identify children engaging in negative behaviors to a similar degree to that of adults (i.e., counselors and preschool teachers). Our study extends such research by showing that specific behaviors indicative of CU traits are recognized by preschoolers. Of note, the preschoolers of the current study all had elevated behavior problems, which may have aided their ability to detect a subgroup of children engaging in worse behaviors than theirs. Alternatively, CU traits represent such a deviation from normative social behaviors that even children with behavior problems, who may have some social processing deficits (Campbell, 1994), can detect them. Future research should examine whether preschool children without behavior problems can also identify peers with CU traits. In addition, levels of CU traits in this sample may be especially high due to the elevated level of CP in the sample. This being said, peers in this group may more readily recognize CU traits because perhaps only very impaired youth can be identified by preschool peers. Future research may also want to assess whether preschoolers can detect more normative levels of these traits.

It is important to note that in the current study, although the correlations between raters of CU traits (peers, teachers, and counselors) were significant, the correlations indicated low to moderate agreement between raters with parent report not being correlated with any other rater. One plausible explanation for this may be that behaviors indicative of CU traits are less clear in early development. However, because comparatively less research has examined CU traits in preschoolers than school-aged children, the appropriateness of this hypothesis cannot be fully determined at this time. An alternative explanation for lower interrater agreement may have to do with the CU construct more broadly. That is, although

some researchers report higher parent–teacher interrater agreement on the CU construct (e.g., $r = .38$; Frick et al., 2003) in school-aged children, other studies have suggested that teacher ratings, rather than parent ratings, of CU traits may be optimal (Barry et al., 2008; Viding, Blair, Moffit, & Plomin, 2005), such that teacher and not parent ratings of behavior have been found to be associated with CU traits cross-sectionally and longitudinally (Ezpeleta et al., 2013). This hypothesis, although preliminary, is consistent with the data presented in the current study such that parent reported CU traits resulted in divergent relationships with variables of interest (e.g., prosocial behavior; impairment) than CU traits reported by others. However, it is important to note that low levels of agreement between parent and teacher reports is not unique to CU traits and occurs across externalizing domains (Antrop, Roeyers, Oosterlaan, & Van Oost, 2002) with teachers also being more reliable reporters of ADHD symptoms compared to parents (Hartmant, Rhee, Willcutt, & Pennington, 2007).

In the current study, children with higher levels of CU traits, as examined via peer and counselor nominations, exhibited less prosocial behaviors and were less liked by their peers. The results presented here are consistent with those findings of Piatigorsky and Hinshaw (2004) and Barry et al. (2008) and extend the literature by showing that younger preschool children also perceive children who exhibit traits indicative of CU negatively. Furthermore, peer nominations of CU traits provided good utility in terms of being uniquely associated with school readiness outcomes, even after accounting for counselor and preschool teacher–rated CU traits. Consistent with studies with older children documenting an association between CU traits and academic impairment (Ciucci et al., 2013; Vaughn et al., 2011), the current study provides evidence showing that preschool children displaying CU traits, as captured via peer and counselor nominations, are reported by parents and teachers as not being as ready for kindergarten compared to their peers.

There were some limitations to the current study that need to be addressed. First, although findings were statistically significant with moderate effect sizes, the cross-sectional aspect of this study precludes us from determining the directionality of our findings. In fact, it is important to note that CU traits assessed via peers took place after teacher and parent ratings of school readiness. Hence, we cannot be certain the extent to which CU traits negatively influenced school readiness outcomes as it is feasible that preschool children's negative experience at school influenced their display of negative behaviors indicative of CU traits. Second, the school readiness questionnaire used in the current study was broad as it encompassed academic, behavioral, and socio-emotional readiness for school. It will be important for future work to examine the extent to which such broad deficits in school readiness predict future standardized academic achievement. In addition, utilizing only one item for the overall school readiness measure and academic impairment may pose threats to reliability. However, previous research has shown this school readiness item as well as the academic impairment item to be reliable and sensitive to treatment effects (Graziano et al., 2014; Hart & Graziano, 2013). Findings from the current study have also demonstrated its concurrent validity as it is related to academic and behavioral impairment from teacher and parent reports. A third limitation was the homogeneity of the sample, which was largely Latino (77%) due to the study's geographical location. However, this limitation may also be viewed as a strength as Latino children represent the fastest growing group in the United States but are understudied in child psychopathology research (La Greca, Silverman, & Lochman, 2009).

Previous research has demonstrated heightened levels of CP in children with CU traits (Enebrink et al., 2005; Hawes & Dadds, 2005). The current study did not reveal an association between externalizing behavior problem levels and peer-reported CU traits. From a measurement perspective and given the clinical nature of our sample, the lack of findings may be attributable to a limited range in EBP as inclusionary criteria required elevated scores. Alternatively and from a theoretical perspective, it may be the case that at the preschool developmental stage CU traits may not necessarily be associated with more severe externalizing behavior problems but rather impact more social and peer-related functioning. This early connection between CU traits and peer difficulties is particularly important given that early social deficits (e.g., peer rejection) can further the stability and prediction of severe behavior problems (Dodge, Coie, & Lynam, 2006; Laird, Jordan, Dodge, Petit, & Bates, 2001; Prinstein & La Greca, 2004). Given the current study's findings suggesting that peer-rated CU traits are associated with behavioral impairment but not behavior problem levels, it is also plausible that preschool peers are identifying CU traits as a construct that taps into severity of behaviors (impairment) rather than frequency of behaviors (externalizing symptoms).

In sum, our findings highlight that even young preschool children can identify peers who engage in behaviors indicative of CU traits and that such behaviors are distinct from prosocial behaviors and carry clear social consequences (i.e., low social preference/poor likability). When viewed in conjunction with findings showing adequate construct validity (i.e., when compared to counselor and teacher ratings of CU traits and severity of behavioral impairment) as well as unique associations with school readiness outcomes, it appears that peer reports (i.e., nominations) offer an important perspective when assessing CU traits. It is important to note that

parent report of CU traits in the current study was not related to peer likability, similar to the Haas et al. (2011) study, or any other school readiness outcome. Hence, it may be the case that parents are not sensitive to their young children engaging in more subtle negative behaviors compared to other reporters (e.g., teachers, camp counselors, peers) who have more opportunities to observe children's social interactions indicative of CU traits. It will be important for future studies to longitudinally track the stability of peer reports and parent-rated CU traits and whether the concordance rates of CU traits improve as children get older. Related to the developmental progression of antisocial behavior, it is it is important to note that whereas the focus of the current study was on CU traits, other traits such as narcissism, or a pattern of grandiosity and sense of entitlement (Washburn, McMahon, King, Reinecke, & Silver, 2004), are also conceptualized as features of early psychopathy (Barry et al., 2000; Frick & White, 2008) and predict negative outcomes beyond CU traits (Barry et al., 2008; Washburn et al., 2004). Given that precursors of narcissism have been identified in preschool children (Carlson & Gjerde, 2009), it will be important to assess the interplay between such precursors of narcissism and CU traits in the prediction of severe behavioral and social-emotional outcomes in early childhood. Last, it will be important to examine whether peer-rated CU traits are sensitive to interventions that target children's CP.

FUNDING

The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R324A120136, as well as a local grant from The Children's Trust (1329-7290). The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education or The Children's Trust.

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