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## Peer Victimization Among Students With Specific Language Impairment, Attention-Deficit/Hyperactivity Disorder, and Typical Development

Sean M. Redmond<sup>a</sup>

<sup>a</sup>University of Utah, Salt Lake City

### Abstract

**Purpose**—The potential contributions of behavioral and verbal liabilities to social risk were examined by comparing peer victimization levels in children with specific language impairment (SLI) to those in children with attention-deficit/hyperactivity disorder (ADHD) and typically developing (TD) children.

**Method**—Sixty children (age range: 7–8 years) participated in the study. Standardized verbal measures and parent ratings of behavioral difficulties were combined with children's self-reports of their school and peer environments to examine the risk for negative peer experiences associated with clinical status.

**Results**—Clinical status was associated with elevated levels of victimization, especially for participants with SLI. A potential buffering effect for number of close friendships was found for participants with ADHD and TD participants, but not for participants with SLI. Peer victimization was associated with elevated levels of hyperactivity and stronger narrative skills for participants with SLI.

**Conclusion**—These results highlight the importance of peer victimization in the social adjustment of students with developmental language disorders.

### Keywords

bullying; SLI; ADHD; peer victimization; friendships

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Although peer victimization is a very common experience in that most students will report having been bullied or teased at some time during their academic careers, ~10%–15% of the school population experiences regular physical assaults, verbal assaults, or both from their classmates (Nansel et al., 2001; Olweus, 1993; Perry, Kusel, & Perry, 1988; Sweeting & West, 2001). Children who are chronically victimized by their peers have been found to be at risk for a host of undesirable socioemotional and academic outcomes, including anxiety, depression, impaired concentration, somatic symptoms, impaired self-esteem, absenteeism, academic under-achievement, and suicidal ideation (Analitis et al., 2009; Boivin, Hymel, &

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Correspondence to Sean M. Redmond: sean.redmond@health.utah.edu.

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Bukowski, 1995; Hawker & Boulton, 2000; Hodges & Perry, 1999; Juvonen, Nishina, & Graham, 2000; Kochenderfer & Ladd, 1997; Kumpulainen et al., 1998; Ma, Stewin, & Mah, 2001; Rigby, 2001; Schwartz, Gorman, Nakamoto, & Toblin, 2005; Schwartz, Gorman, Nakamoto, & McKay, 2006; Storch, Brassard, & Masia-Warner, 2003).

Antecedents of victimization have been the focus of several longitudinal investigations of elementary and secondary school students. Results have converged on key personal and interpersonal factors that seem to place some children at increased risk for being victimized by their peers. These include physical weakness, submissiveness/low levels of assertion, poor self-concept, peer rejection, internalizing behavior problems, and, to a lesser extent, externalizing behavior problems (see Card, Isaac, & Hodges, 2007, for a review). Other variables that might be considered potential risk factors have failed to show consistent associations across studies. These include both community/school-level factors (e.g., school location, school size, class size) as well as student-level factors (e.g., socioeconomic status [SES], gender, race, height, weight, wearing eyeglasses; Card et al., 2007).

Several investigations have suggested that friendships operate as an important protective factor for at-risk children. For example, Schwartz, Dodge, Pettit, and Bates (2000) followed preschoolers into the middle elementary grades and collected measures of home environment, peer victimization, group social acceptance, and number of close friendships. Results indicated that early harsh, punitive, and hostile home environments predicted later victimization by peers, but only for those children with few close friendships. These associations did not hold for children with numerous friendships. The results of Hodges, Boivin, Vitaro, and Bukowski (1999) suggest that friendship quality is also an important consideration. These investigators found that teacher-reported internalizing and externalizing behavior problems in early elementary students predicted increases in their victimization over a 1-year period, but these increases were attenuated for children with at least one protective friendship. Emerging research into potential moderating/mediating factors such as peer friendships suggest that victimization is a social process that emerges over time as a product of multiple early risk and protective factors (Kochenderfer-Ladd, Ladd, & Kochel, 2009)

Disability status represents an important early risk factor for the receipt of peer aggression (Doren, Bullis, & Benz, 1996; Estell et al., 2009; Hershowitz, Lamb, & Horowitz, 2007; King, 2006; Mah, 2009; Marini, Fairbairn, & Zuber, 2001; Mayfield, 2005; Shea, 2003; Spinelli-Casale, 2008; Sweeting & West, 2001; Van Cleave & Davis, 2006; Whitney, Nabuzoka, & Smith, 1992). The elevation of risk associated with clinical status has been confirmed across different measures (e.g., self-reports, peer nominations, parental ratings) and different ages, as well as across a variety of disability categories. Van Cleave and Davis (2006) used questions from the National Survey of Children's Health, a telephone survey of 102,353 U.S. households, to examine differences between parent reports of bullying. These investigators found that within their national sample of households with 6- to 17-year-olds, parents of children with special health care needs—defined as the receipt of physical, developmental, or behavioral services—were as a group 1.5 to 2 times more likely to report that they were concerned that their children were being bullied than parents of typically developing (TD) children. Links between disability status and victimization are probably

multiply determined, involving elements of social stigmatization/ marginalization as well as social, emotional, and behavioral liabilities associated with various neurodevelopmental disorders (Mah, 2009).

Some reports have suggested that the presence of communicative difficulties may play a prominent role in the extent to which children with disabilities experience peer victimization. For example, Sweeting and West (2001) collected self-reports of teasing and bullying frequency from 11-year-olds and integrated this information with teacher and parent ratings of the children's academic ability, disabilities, and health status (e.g., respiratory difficulties, visual impairments, hearing impairments, speech difficulties, or reading difficulties). This study also included measures of physical attractiveness, height, weight, and body mass indices collected from school nurses. Overall, 14% of the study sample of 2,237 students reported that they were regularly teased or bullied. Rates of victimization provided by children with hearing impairments or respiratory difficulties were not significantly different from those provided by TD controls. In contrast, rates provided by children with speech difficulties, reading difficulties, visual impairments, longstanding illnesses, and skin problems were considerably higher (39.1%, 30.2%, 22.7%, 19.4%, and 17.6%, respectively). The contribution of speech difficulties on victimization status was shown to be significant even after controlling for other variables (i.e., SES, physical attractiveness, and weight).

Although consistent with educational policies and service provision, the categories used by Sweeting and West (2001) and other investigators to examine the influence of neurodevelopmental disorders on peer victimization prevent straightforward interpretation of these findings. Specifically, the term *speech difficulties* as it is used by parents and educational professionals may include children with a variety of communication disorders as well as concomitant conditions. Savage (2005) administered the My Life in School Checklist (MLISC; Sharp, Arora, Smith, & Whitney, 1994), which is a self-report instrument used to identify children at risk for physical bullying, to sixty 7-year-olds, including six children diagnosed with primary expressive language impairments. Although an improvement over the more generic *speech difficulties* designation, no details were provided in this report regarding eligibility criteria, nor were the results of developmental measures presented. Nonetheless, the results of the study suggest that expressive language difficulties may constitute a particular risk factor for negative peer experiences. Three of the six children enrolled in clinical services reported elevated victimization levels in contrast to 16% of the TD control group. Savage (2005) noted that parent-provided ratings of the quantity of peer friendships appeared to differentiate those children in the clinical group who experienced elevated levels of bullying from those who did not.

Specific language impairment (SLI) refers to those cases of language impairment that occur in the absence of concomitant perceptual, cognitive, or behavioral impairments. Examination of social risk in this population allows for consideration of the contribution of verbal limitations to negative peer experiences in the absence of concomitant disabilities. Unfortunately, direct evidence of peer victimization in children with SLI has been limited. In a series of reports that followed a community-based study sample of 181 children with SLI longitudinally (Manchester language study sample: Conti-Ramsden & Botting, 2004;

Knox & Conti-Ramsden, 2003, 2007), the MLISC was used to estimate victimization risk associated with SLI. Conti-Ramsden and Botting (2004) reported that 36% of the children in the SLI group and 12% of the children in the age-matched TD control group reported elevated levels of physical bullying at age 11. Although peer victimization was associated with SLI status, the mechanisms behind this link were unclear. Victimization status was not associated with gender, SES, maternal education levels, or children's nonverbal IQ scores. Correlations between victimization scores and children's receptive language test scores (vocabulary, grammar) were not significant. Pragmatic difficulties, as indexed by the Children's Communication Checklist (Bishop, 1998), were also not related to children's self-reports of victimization. Statistically significant but weak associations were found between the children's MLISC scores and their expressive vocabulary test scores ( $r = -.17$ ) and between the children's MLISC scores and their performances on a tense-marking task ( $r = -.18$ ). In a follow-up report, Knox and Conti-Ramsden (2003) examined the potential impact that differences in school placement might have had on participants' bullying risk and found no significant differences between children with SLI attending mainstream classes and children attending special schools for children with LI.

Knox and Conti-Ramsden (2007) examined differences between participants with SLI and TD participants at age 16 in current and lifetime victimization experiences by asking participants to use a 4-point severity scale to answer the following questions: How much do you get teased or bullied now? When you were younger, were you ever teased or bullied then? Almost half of the adolescents with SLI recalled being teased or bullied regularly when they were younger, which was twice the rate reported by the participants in the TD group. Rates of current bullying also indicated elevated risk associated with SLI status (13% vs. 2%). Consistent with Conti-Ramsden and Botting's (2004) earlier report, little or no relationship was found at age 16 between children's language, literacy, and nonverbal IQ measures and their reports of being regularly harassed by their peers. Children's self-reports of the quality of their friendships and their own prosocial behaviors also failed to make any significant contribution to the prediction of victimization status. Current bullying was only related to self-reported socioemotional difficulties for the participants with SLI, suggesting that children with SLI who were bullied were more likely to report elevated internalizing, externalizing, and hyperactivity symptoms than children in the TD group who had had similar negative peer experiences. In other words, the mechanisms behind social risk may be different for children with SLI and those without SLI.

Very little information is available regarding the risk for being bullied associated with SLI status relative to other clinical profiles. Lindsay, Dockrell, and Mackie (2008) examined bullying risk in sixty-seven 12-year-olds with SLI relative to a comparison group of 41 TD children and to a comparison group of 32 children identified as having "nonlanguage based learning difficulties" (NLBLD). These investigators extrapolated additional measures using items from the MLISC; specifically, a verbal bullying index consisting of items representing harassing behaviors (e.g., *called me names*) and a prosocial index consisting of positive peer behaviors (e.g., *shared something with me*). In contrast to the findings associated with the Manchester study sample (Conti-Ramsden & Botting, 2004), no statistically significant differences were found between the group of children with SLI and the comparison groups

on either the physical bullying or the verbal bullying indices. However, group differences favoring the TD group were found on the prosocial index (TD > SLI, NLBLD), suggesting that clinical status was associated with fewer reports of positive peer behaviors.

Another clinical population at risk for peer victimization is children with ADHD. Deficits in attention, hyperactivity, and impulsivity have been associated with a variety of social difficulties that would place children at increased risk, including unpopularity, rejection by peers, and a lack of friendships (see Njmeijer et al., 2008, for a review). Johnson et al. (2002) administered the MLISC to 523 children ages 7 to 11 years and compared the behavioral profiles of self-reported victims of bullying to those who did not report bullying using a teacher rating scale of children's strengths and difficulties (Strengths and Difficulties Questionnaire; Goodman, 1997). Significant differences were found between the two groups, suggesting that students (especially boys) with elevated teacher-reported difficulties in hyperactivity, poor prosocial skills, and emotional problems were more likely to report being victimized.

Study samples of children with diagnosed ADHD have provided mixed results regarding the potential contributions of ADHD symptoms to victimization. Humphrey, Storch, and Geffken (2007) retrospectively examined the psycho-educational assessment files of 116 children with ADHD (age range: 4–18 years) to investigate potential associations between children's ADHD symptoms, internalizing behavior problems, externalizing behavior problems, and negative peer interactions. Peer victimization was measured using key items (e.g., *gets teased a lot; not liked by other children*) taken from the Social Problems subscale of the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001). Victimization was moderately and positively correlated with parent and self-reports of externalizing behavior problems ( $r$  range: .41–.64) and internalizing behavior problems ( $r$  range: .33–.42), suggesting that children with ADHD who displayed relatively higher levels of aggression and conduct problems and/or higher levels of anxiety and social withdrawal were rated by their parents as having more difficulties with their peers. Associations between peer victimization and symptom severity on the Inattention and Hyperactivity subscales from the Conners' Parent Rating Scale—Revised (CPRS-R; Conners, 2004) were not significant, suggesting that severity in primary ADHD symptoms (hyperactivity, inattention, impulsivity) had little influence over children's negative peer experiences independent of the presence of co-existing externalizing and internalizing behavior problems.

Other clinical investigations, however, have found links between primary ADHD symptoms and victimization. For example, Weiner and Mak (2009) found in their study of 52 children with ADHD and 52 TD controls (age range: 9–14 years) that parent ratings of ADHD symptoms from the CPRS-R were significantly correlated with children's self-reported levels of peer victimization ( $r = .314$ ) and represented the only significant predictor of peer victimization from a large set of teacher and parent behavioral rating scales, suggesting that primary symptom severity was responsible for children's social risk. Discrepant outcomes between Weiner and Mak and Humphrey et al. (2007) may have been the result of measurement differences. In studies of TD children, self-report measures have been shown to be more sensitive than parent and teacher reports for assessing victimization by peers (Pellegrini, 2001).

The results of one epidemiologically ascertained study sample of students with ADHD suggest that for some children, peer victimization may be a contributing factor to the emergence and/or aggravation of ADHD symptoms rather than a consequence of their difficulties in impulsivity, hyperactivity, or inattention. Holmberg and Hjern (2008) screened 516 10-year-olds (Grade 4), identifying 29 children with pervasive ADHD (i.e., DSM-IV [American Psychiatric Association, 2000] criteria met for both home and school) and 32 children with situational ADHD (i.e., criteria met for home or school only). CPRS-R ratings at school entry (Grade 1) were available for 74% of the study sample.

A brief survey questionnaire collecting information on children's bullying experiences was administered to the children at Grade 4. Results indicated that only 17% of the TD children reported that they were bullied *often* or *sometimes* compared to 35% and 33% of the children with pervasive ADHD and situational ADHD, respectively. ADHD status at Grade 4 was associated with being bullied: often: odds ratio (OR) = 10.8, 95% confidence interval (CI) = 4.0–29.0; sometimes: OR = 2.9, 95% CI = 1.5–5.7. However, there were no significant associations between parent ratings of ADHD symptoms when entering school and being bullied in the fourth grade. Holmberg and Hjern (2008, p. 137) hypothesized a “reversed causal link between ADHD and being bullied” to account for these findings, where for some children, feelings of insecurity and the fear of being bullied may have been important contributors to the development/aggravation of their ADHD symptoms. These investigators suggested further that there might be important similarities between the symptoms of attention problems associated with posttraumatic stress disorder in the school setting and in those children who have experienced chronic victimization from their peers.

In sum, peer victimization has been associated with several negative health consequences as well as a variety of developmental and behavioral difficulties. A small but growing literature suggests further that children with SLI and children with ADHD may be at particular risk for peer victimization. However, the literature base is insufficient to provide practitioners with guidance on how to address this important issue. Links between children's verbal and nonverbal liabilities, behavioral propensities, academic attitudes, friendship status, and peer victimization have been unclear. For children with SLI, previous investigations suggest that behavioral liabilities may be more strongly associated with social risk than either verbal or nonverbal liabilities. In contrast, the potential influence of verbal/nonverbal limitations on victimization status in children with ADHD is unknown because investigations have not included developmental assessments in these areas. This gap is unfortunate in light of reports suggesting that LI and attention deficits frequently co-occur, and that a significant portion of children with ADHD have undiagnosed LI contributing to their social and academic difficulties (Bruce, Thernlund, & Nettelbladt, 2006; Cohen, Davine, Horodezky, Lipsett, & Isaacson, 1993; Love & Thompson, 1988; Tirosch & Cohen, 1998; for confuting evidence, see Cardy, Tannock, Johnson, & Johnson, 2010; Luo & Timler, 2008; Redmond, 2004).

Given the prevalence of SLI and ADHD and the substantial resources needed to address the range of academic and social difficulties associated with them, additional investigation into the contributions of behavioral and verbal liabilities to social risk is warranted. Specific questions addressed in this study were:

- Are 7- to 8-year-old children who are receiving services for SLI or ADHD at greater risk for negative peer experiences at school than TD children?
- Are there differences between these groups in their self-reported amounts of positive peer behaviors experienced at school?
- Which verbal, behavioral, attitudinal, and social measures are associated with exposures to negative and positive peer behaviors?
- Are there differences between groups in these associations?

## METHOD

The University of Utah Institutional Review Board provided approval for the procedures described below. Data for the project were collected from children and their parents as part of their participation in a larger investigation examining the psycholinguistic and socioemotional profiles of children with SLI and ADHD (Redmond, Thompson, & Goldstein, 2011).

### Participants

Sixty monolingual English speakers (38 boys and 22 girls) between the ages of 7 and 8 years participated in this study. To be included in the study sample, participants needed to complete a general eligibility screening and demonstrate typical levels of hearing acuity (as determined by an audio-metric screening), a standard score of 80 or higher on the Naglieri Nonverbal Ability Test—Individual (NNAT–I; Naglieri, 2003), and a passing score on a phonological screening (phonological probe from the Test of Early Grammatical Impairment [TEGI; Rice & Wexler, 2001]). Additional inclusionary and exclusionary criteria were used to qualify children as having SLI, ADHD, or TD status.

**SLI criteria**—Potential participants with SLI were recruited from the caseloads of community speech-language pathologists (SLPs). To qualify as having SLI, children had to have a diagnosis of LI by an independent, certified SLP and had to perform at or below the appropriate cutoff score for their age on the Clinical Evaluation of Language Fundamentals—Fourth Edition Screening Test (CELFST–4; Semel, Wiig, & Secord, 2004). Children with concomitant diagnoses of autism, pervasive developmental disability (PDD), or ADHD were excluded from the group with SLI. There were 12 boys and 8 girls in the group with SLI (racial/ethnic composition: 16 White/non-Hispanic, 1 White/Hispanic, 1 African American/Hispanic, 1 Asian/Hispanic, and 1 not provided).

**ADHD criteria**—Potential participants with ADHD were recruited through the caseloads of community clinical psychologists as well as through notices posted on the Utah chapter of Children and Adults with Attention-Deficit/Hyperactivity Disorder website (<http://www.chaddofutah.com>). To qualify as having ADHD, children had to have a diagnosis of combined-type ADHD by an independent health care professional and had to be rated by their parents within the clinical range on the Child Behavior Checklist DSM–ADHD subscale (CBCL; Achenbach & Rescorla, 2001). Children with concomitant diagnoses of autism, PDD, or LI were excluded from the group with ADHD. There were 15 boys and 5

girls in the group with ADHD (racial/ethnic composition: 16 White/non-Hispanic, 1 White/Hispanic, 2 African American/non-Hispanic, 1 Native American/Hispanic). Nineteen children in the group with ADHD (95%) were receiving behavioral medications during the time of the study. In the spirit of reasonable accommodation, participants with ADHD completed the eligibility screenings while on their behavioral medications. However, parents were asked to provide ratings of their children's behaviors when they were not medicated and to suspend their children's medications for the experimental portion of the study.

**TD criteria**—Potential TD participants were recruited through notices sent to families attending the schools that the children in the groups with SLI and ADHD were attending, as well as through community bulletins. To qualify as TD, children had to not be receiving any special services, had to score above the cutoff on the CELFST-4, and had to be rated by their parents within the normal range on the CBCL DSM-ADHD subscale. There were 11 boys and 9 girls in the TD group (racial/ethnic composition: 16 White/non-Hispanic, 1 Pacific Islander/non-Hispanic, 1 African American/non-Hispanic, 2 not provided).

Table 1 displays participants' characteristics on the demographic and eligibility measures. Group equivalence was achieved on age as well as maternal levels of education ( $p$  values 0.990 and 0.308, respectively). The study sample covered the range from "some high school" to "advanced graduate degree," with the average maternal education level across all three groups corresponding to "some college." Significant group differences in the children's nonverbal abilities were present, reflecting a control group advantage over the clinical groups,  $F(2, 57) = 9.221, p < .001$ ; Sidak follow-up: SLI = ADHD < TD. However, as shown in Table 1, the distribution of standard scores within each group included "low-average" as well as "high-average" participants.

## Measures

**Verbal abilities**—The psycholinguistic profiles of the participants were provided in detail in a previous report (Redmond, Thompson, & Goldstein, 2011). For this study, the screening portion of the TEGI and the Test of Narrative Language (TNL; Gillam & Pearson, 2004) were selected to examine the influence of key verbal abilities on children's peer experiences. The screening portion of the TEGI uses a prompting procedure to elicit obligatory contexts for present-tense and past-tense verbs (e.g., *the dentist cleans your teeth; she jumped into the puddle; he rode the horse*). Maximum score on the TEGI screener is 100, indicating correct use of finite verbs in obligatory contexts. For the age range examined in this study, proficiencies with these particular forms should be well established in cases of typical development (i.e., > 90% finite verb use). Thus, the presence of limitations in this particular area of grammatical development would likely be highly salient to adults and peers, and this discrepancy could potentially stigmatize children with LI, increasing their likelihood of peer victimization. Conti-Ramsden and Botting (2004) reported a weak but statistically significant association between poorer tense-marking scores and higher rates of peer victimization in their study sample of older children with SLI.

Limited narrative skills represent another verbal liability that could potentially contribute to children's social difficulties. Standard scores from the oral narration and comprehension

composites from the TNL were considered separately to allow for examination of potential differences between expressive and receptive narrative skills. Both the TEGI and the TNL have demonstrated strong psychometric properties, including high levels of sensitivity and specificity, when used to discriminate between affected and unaffected cases (Gillam & Pearson, 2004; Rice & Wexler, 2001; Spaulding, Plante, & Farinella, 2006).

**Behavioral profiles**—Two standardized behavioral rating scales were completed by parents contributing information about their children’s socioemotional difficulties. Those particular behavioral dimensions that had been implicated in previous investigations of peer victimization (i.e., inattention, hyperactivity, internalizing problems, and externalizing problems) were examined. The specific subscales used were the DSM–IV Inattention and the DSM–IV Hyperactive-Impulsive scales from the Conners’ Parent Rating Scale—Revised: Long version (CPRS–R:L Conners, 2004) and the Internalizing and Externalizing syndrome scales from the CBCL. Both the CPRS–R:L and the CBCL ask parents to indicate the severity/frequency with which behavioral difficulties occur (e.g., *can’t sit still*). Higher values indicate the presence of elevated behavioral difficulties. Because behavioral symptoms are not normally distributed within the general population, both rating scales provide *T* scores based on percentiles derived from the raw scores associated with the normative sample. Clinical cutoff values provided are roughly similar (65 and 63) but are based on slightly different scales (CPRS–R:L 40–90; CBCL 33–100). Independent evaluations of the psychometric properties of the CPRS–R:L and the CBCL indicate adequate levels of reliability and validity (e.g., Collett, Ohan, & Myers, 2003; Hudziak, Copeland, Stanger, & Wadworth, 2004).

**Academic attitudes**—Difficulties in school engagement have been associated with peer victimization as well as with LI and attention deficits. To assess this dimension of children’s functioning, participants completed the Feelings About School Survey (FASS; Valeski & Stipek, 2001), which is a 10-item questionnaire that uses a graphically displayed 5-point scale to elicit children’s positive, neutral, and negative evaluations of the academic environment. Training items based on nonacademic items (e.g., *use these bars to show me how much you like the snacks at school*) were used to calibrate children’s responses as well as to encourage full use of the scale. Composite averages across items were used to create four subscales: General Attitude Toward School (3 items: *how much you like school, how you feel when you’re at school, how fun things are at school*), Relationship with Teacher (3 items: e.g. *how your teacher feels about you, how much your teacher cares about you, how you feel about your teacher*), Perceived Math Competence (2 items: *how much do you know about math, how good are you at math*), and Perceived Literacy Competence (2 items: *how much do you know about reading, how good are you at reading*). In each case, higher values indicate more favorable evaluations. The FASS has been shown to be sensitive to differences in children’s attitudes toward school and their academic functioning as a consequence of classroom and teacher characteristics (Valeski & Stipek, 2001).

**Social measures**—Friendships have been shown in previous investigations to be an important mediator of risk in TD children, but information is limited about their potential as a buffer against victimization for children with SLI or ADHD. Two items from the CBCL

Social Competence sub-scale were used to collect information from parents about quantitative aspects of their children's friendships: "How many close friends does your child have?" (*none, one, two or three, four or more*) and "How many times a week does your child do things with friends?" (*less than once, one to two, three or more*).

**Peer victimization**—The degree to which children had recently experienced negative peer interactions was measured using the MLISC. The MLISC is a 39-item questionnaire designed for primary school children in which respondents report the occurrence of various neutral, prosocial, and aggressive behaviors in their classmates during the previous week using a 3-point scale (*not-at-all, once, more-than-once*: scored as 0, 1, and 2). By design, none of the items contains the term *bullying* or *teasing*; instead, items ask respondents to consider specific peer behaviors. This circumvents concerns about possible emotive reactions from children to these terms as well as variability across children in how they personally define bullying or teasing (Sharp et al., 1994)—a potential confound when eliciting responses from children with known verbal or behavioral limitations. Six items on the MLISC constitute the "physical bullying index" (possible scores range from 0 to 12): *tried to kick me, said they'd beat me up, tried to make me give them money, tried to hurt me, tried to break something of mine, and tried to hit me*.

A defining feature of bullying that distinguishes it from other forms of peer conflict is that it represents repeated behavior (cf. Olweus, 1993). Accordingly, "elevated bullying risk" is identified on the MLISC when two or more of the six bullying items are marked as occurring more-than-once during the past week. Although the MLISC has not been standardized, it has been administered to more than 5,000 students and has been featured in several evaluations of the effectiveness of bullying prevention programs (Ahmad, 1997; Arora, 1999; Arora & Thompson, 1999). The MLISC has also shown moderate levels of correlation with other bullying questionnaires (Ahmad, 1997).

Following Lindsay et al. (2008), a "verbal bullying" and a "prosocial" index were also constructed using items from the MLISC. The verbal bullying index consisted of eight items (possible scores: 0 to 16): *called me names, was nasty about my family, was mean because I'm different, asked me a stupid question, told me a lie, shouted at me, laughed at me horribly, and told a lie about me*. There are 15 items on the MLISC that describe positive peer behaviors (e.g., *helped me with my schoolwork, shared something with me*). These were used to construct the prosocial index (possible scores: 0 to 30).

## RESULTS

The presence of an "above-average" mean nonverbal IQ score for the TD participants as well as the observation of significant group differences on the NNAT raises concerns about potential sampling biases that might need to be taken into account before examining group differences on the verbal, behavioral, attitudinal, and social measures (e.g., treating nonverbal IQ as a covariate). On the other hand, some investigators have argued that mean IQ scores will generally be lower for groups with neurodevelopmental disorders because they reflect preexisting nonrandom differences, and adjusting for IQ scores has the unintended consequence of creating unrepresentative groups (Dennis et al., 2009).

Considering the diversity of measures and clinical profiles examined in this study, both perspectives have potential merit. Accordingly, outcomes associated with a series of analyses of covariance (ANCOVAs) treating children's scores on the NNAT as a covariate were compared with outcomes associated with a series of univariate analyses of variance (ANOVAs). NNAT standard scores were not a significant predictor for any of the outcome measures, and the observed pattern of main group effects and follow-up pair-wise comparisons was identical in both the ANCOVAs and the ANOVAs. Thus, the results associated with the univariate ANOVAs are provided below.

Homogeneity of variances assumption held for 10 of the 13 indices—the exceptions being the TEGI, the Perceived Math Competence, and the Perceived Literacy Competence measures. In those cases where homogeneity held, a univariate ANOVA was conducted to identify significant group differences, and follow-up Sidak analyses were used to identify pair-wise comparisons that reached the 0.05 level of significance. For the TEGI, the Perceived Math Competence, and the Perceived Literacy Competence measures, Welch's robust test of equality of means and Games-Howell analyses were used to identify significant group differences and follow-up pair-wise comparisons.

### Group Differences in Verbal, Behavioral, Attitudinal, and Social Measures

Group means, standard deviations, and ranges for the verbal, behavioral, attitudinal, and social measures are displayed in Table 2. As expected, significant group differences were observed on the clinical measures. For both the TEGI and the TNL, there was a clear pattern indicating that as a group, children with SLI performed more poorly than either the children with ADHD or the TD children. In contrast, as a group, the children with ADHD and the TD children performed very similarly, TEGI:  $F(2, 57) = 9.75, p < .001, \eta^2 = 0.319$  (Games-Howell: SLI < ADHD = TD); TNL Comprehension:  $F(2, 57) = 17.33, p < .001, \eta^2 = .378$  (Sidak: SLI < ADHD = TD); TNL Oral Narration:  $F(2, 57) = 17.90, p < .001, \eta^2 = .386$  (Sidak: SLI < ADHD = TD).

Results of the CPRS-L and CBCL document a complimentary differentiation between the children with ADHD and the other two groups in parent reports of inattentive, hyperactive, externalizing, and internalizing difficulties. Parents of children with ADHD consistently rated their children as having more behavioral difficulties than parents of children with SLI and TD children. In contrast, parents of children with SLI and parents of TD children rated their children similarly, with the exception of the CPRS-L DSM-IV Hyperactive subscale. In this case, children in the SLI group displayed significantly more difficulties than the TD group but fewer difficulties than the ADHD group, DSM-IV Inattentive:  $F(2, 57) = 24.88, p < .001, \eta^2 = .466$  (Sidak: TD = SLI < ADHD); DSM-IV Hyperactive:  $F(2, 57) = 68.56, p < .001, \eta^2 = .706$  (Sidak: TD < SLI < ADHD); Externalizing:  $F(2, 57) = 13.77, p < .001, \eta^2 = .326$  (Sidak: TD = SLI < ADHD); Internalizing:  $F(2, 57) = 13.77, p = .001, \eta^2 = .255$  (Sidak: TD = SLI < ADHD)].

Significant group differences were not observed on measures assessing children's academic attitudes. Group means and standard deviations indicated that the majority of children from all three groups reported high levels of satisfaction with their school environments.

Significant group differences were observed on the social measures. Parents of TD children reported that their children had significantly more close friends than what was provided by either parents of children with SLI or parents of children with ADHD,  $F(2, 57) = 8.802, p < .001, \eta^2 = .236$  (Sidak: SLI = ADHD < TD). There was one child with SLI (5%) and four children with ADHD (20%) who reportedly had “no close friends.” None of the parents of the TD children reported that their children were friendless. In fact, half of the TD children reportedly had “four or more” friends. In contrast, there were only three children with SLI (15%) who were assigned the maximum value provided by the range and none of the children with ADHD. Interestingly, even though parents of children with SLI reported that their children had on average fewer close friendships than TD children, the reported frequency of contact with friends was similar for the two groups. In contrast, parents of children with ADHD reported that their children had fewer friends and also spent significantly less time with their friends than the TD children,  $F(2, 57) = 4.292, p = .018, \eta^2 = .131$  (Sidak: ADHD < TD).

### Group Differences in Self-Reported Peer Experiences

Potential group differences in positive and negative peer experiences were considered in three ways. First, total scores from the MLISC physical bullying, verbal bullying, and prosocial indices were analyzed using ANOVA procedures. Next, relative risk and ORs based on the number of children from each group providing evidence of elevated risk as defined by the MLISC protocol (i.e., more than one physical bullying item rated as occurring “more-than-once”) were used to determine the extent to which membership in one of the clinical groups could be characterized as a risk factor for victimization. Finally, within-group differences in the associations among the MLISC indices and the nonverbal, verbal, behavioral, attitudinal, and social measures were examined to explore associations between children’s verbal and behavioral liabilities and the treatment they received from their peers.

Table 3 displays the group means, standard deviations, and ranges associated with the MLISC indices. Homogeneity of variances assumption held for the prosocial index but not for the bullying indices, reflecting the fact that the values for TD children on the reported levels of negative peer behaviors represented a much smaller range than those provided by either children with SLI or children with ADHD. Group differences were not significant for the verbal bullying or prosocial indices, indicating the presence of considerable overlap in group distributions. In contrast, Welch’s robust test of equality of means and follow-up Games-Howell analyses confirmed the presence of significant differences between the children with SLI and the TD children on the physical bullying index,  $F(2.57) = 3.747, p = .04, TD < SLI$ . Seven children with SLI provided physical bullying scores higher than 5, which was the highest value provided by any TD participant. By comparison, only three children with ADHD provided a physical bullying score above the TD range.

Across all three groups, the majority of children indicated that physical bullying was not a major feature of their peer interactions (46/60). However, 14 children in the study sample (23%) reported that at least two of the six physical bullying items had occurred to them “more than once during the previous week,” indicating elevated levels of bullying risk

within a significant minority of the participants. Within the set of children identified as being at risk, eight of the 14 were children with SLI (57%), four were children with ADHD (28%), and two were TD children (14%), indicating a disproportionate representation from the clinical groups.

In terms of relative risk, 40% of the children with SLI and 20% of the children with ADHD but only 10% of the TD children reported elevated levels of physical bullying, indicating four-fold and two-fold increases associated with clinical status. ORs were significant for the children with SLI,  $OR = 6.0, \chi^2 = 4.80, p = .028, 95\% CI = 1.08\text{--}33.27$ , but not for the children with ADHD,  $OR = 2.25, \chi^2 = 0.78, p = .376, 95\% CI = 0.36\text{--}13.97$ .

### **Correlates of Peer Victimization in Children With SLI, ADHD, and TD**

In addition to documenting the relative risks associated with children's clinical status, a goal of this study was to examine which nonverbal, verbal, behavioral, attitudinal, and social liabilities were associated with being victimized and whether these associations were different across the three groups of children. To do this, Pearson product-moment correlations between the MLISC indices and the verbal, behavioral, attitudinal, and social measures were run.

Results are displayed in Table 4. Observed correlations ranged from  $-.413$  to  $.586$ . Most of the bivariate associations between the MLISC indices and the other measures were nonsignificant, and those that were statistically significant were small to moderate in strength, suggesting that a limited amount of the variation in participants' reports of peer harassment and victimization was accounted for by the nonverbal, verbal, behavioral, and social measures examined (percentage of shared variances [ $r^2$ ] among the nine significant associations observed ranged from  $.155$  to  $.343$ ). Nonetheless, patterns of association observed across the three groups were different, suggesting that clinical status did influence children's peer experiences. For example, for children with ADHD and the TD children, the number of close friends was moderately and negatively correlated with the physical bullying index ( $r$  values of  $-.406$  and  $-.413$ , respectively), suggesting a tendency for children with more friends to provide lower bullying scores. This was not the case for the children with SLI, where there was no evidence of a buffering effect for those children with more friends.

For children with SLI, different measures were associated with self-reported levels of victimization. For example, there was a modest trend in this group for children with relatively higher parent ratings of hyperactivity to report elevated levels of physical and verbal bullying ( $r = .394$ ). Another significant association that appeared for children with SLI but not for children in the other groups was the tendency for relatively stronger narrative abilities to be associated with higher levels of reported peer prosocial behaviors (TNL Comprehension:  $r = .586, p = .003$ ; TNL-Oral Narration:  $r = .496, p = .013$ ). Higher TNL Comprehension scores for children with SLI were also associated with higher reported levels of both physical ( $r = .468, p = .019$ ) and verbal bullying ( $r = .454, p = .022$ ).

## DISCUSSION

The current study sought to examine in more detail the nature of victimization in children with SLI and children with ADHD relative to their TD peers. Standardized tests of participants' verbal and nonverbal abilities and parent ratings of their behavioral difficulties and friendships were combined with children's self-reports of their school and peer environments to examine the risk for negative peer experiences associated with clinical status. Associations between specific verbal proficiencies, behavioral liabilities, and reported levels of positive and negative peer experiences were also examined.

Although clinical status is widely recognized as an early risk factor for being bullied, very few studies have examined social risk across groups of children with neuro-developmental disorders. This study represents the first comparison of peer victimization rates in students with SLI and students with ADHD. The composition of the present study sample offered a relatively clear consideration of the potential contributions of key behavioral and verbal liabilities to social risk, with a few important caveats. For example, although some investigations have provided evidence of elevated levels of undocumented language impairments in clinical samples of children with ADHD (e.g., Bruce et al., 2006; Cohen et al., 1993; Love & Thompson, 1988; Tirosh & Cohen, 1998), in this study, children with ADHD performed significantly better on the TEGI and TNL than children with SLI and very similarly to TD children. This outcome was consistent with previous reports suggesting generally adequate language skills in children with ADHD (Cardy et al., 2010; Luo & Timler, 2008; Redmond, 2004).

To a lesser extent, the behavioral profiles of children with SLI were also differentiated from the profiles of children with ADHD and more similar to those of the TD children. Significant differences between parent ratings of children with SLI and children with ADHD were observed on each behavioral scale, and differences observed between parent ratings of children with SLI and TD children on the Internalizing, Externalizing, and Inattentive scales failed to reach statistical significance. However, it was the case that average ratings provided for children in the SLI group on each of these indices were higher than those provided for children in the TD group, and a significant difference was observed between these parent groups on the ratings provided for the Hyperactivity scale (TD < SLI < ADHD). This finding suggests that difficulties in hyperactivity/impulsivity may represent a potential behavioral liability for both children with SLI and children with ADHD.

Clinical status was also associated with fewer close friendships and lower levels of contact with friends, both of which represent recognized risk factors for peer victimization. Parents of TD children reported that their children had significantly more close friends than parents of children with SLI and parents of children with ADHD. Children with ADHD appeared to be particularly vulnerable to the potential risks associated with friendlessness and limited contact with friends.

In contrast, academic attitudes did not appear to be a potential risk for any of the groups of children. For the most part, participants provided high levels of satisfaction with their teachers, schools, and academic performances. It is important to note, however, that the

range of scores provided by the clinical groups was also wider than the TD control group for three of the four composites (General Attitudes Toward School, Perceived Math Competence, and Perceived Literacy Competence), suggesting that although rare within the study sample, when difficulties in these areas were present, they were occurring with children with SLI and ADHD.

Some of the outcomes of the present study aligned well with previous investigations of peer victimization. As expected, overall rates of physical and verbal bullying were higher in both of the clinical groups; particularly for physical bullying within a substantial minority of children with SLI. The relative risk associated with SLI in the present study sample was strikingly consistent with previous reports (Conti-Ramsden & Botting, 2004; Savage, 2005; Sweeting & West, 2001), suggesting that 35%–40% of early elementary students with SLI are being regularly victimized by their peers. Also consistent with previous reports, behavioral liabilities were associated with increased risk in the SLI group. For example, Knox and Conti-Ramsden (2007) provided evidence that self-reported levels of behavioral difficulties were associated with victimization in children with SLI but not in TD children. In this study, children in the SLI group with relatively higher parent ratings of hyperactivity were more likely to report elevated levels of physical and verbal bullying. However, endorsement of a straightforward link between co-occurring behavioral liabilities and victimization is complicated by the outcomes associated with children with ADHD, where severity of children's symptoms was not significantly associated with peer difficulties.

The association for children with ADHD in this study was, however, in the expected direction and magnitude (cf. Weiner & Mak, 2009). The failure to detect an association may reflect power limitations associated with the present study sample. Alternatively, this outcome could indicate that the presence of hyperactive symptoms by themselves may not have been a sufficient risk factor for negative peer experiences. Rather, the combination of language impairments and mild-moderate symptoms of hyperactivity may have been a greater liability and more provocative of aggressive peer behaviors than the presence of more severe behavioral symptoms in the context of intact language skills. Another possibility is that elevated parent reports of hyperactivity in some of the children in the SLI group were not a contributor but rather a consequence of peer victimization. This interpretation aligns with Holmberg and Hjern's (2008) premise that the emergence/aggravation of ADHD symptoms sometimes follows children's negative peer experiences. It also aligns with Redmond and Rice's (1998) suggestion that behavioral difficulties in children with SLI are probably partly determined by the negative treatment they receive from their peers. Additional longitudinal research into the course of hyperactivity and victimization in children with SLI is needed to choose between these two alternatives.

There may also be important subgroups of children with developmental language disorders who are at particular risk but who tend to be excluded from research projects. Another venue for future research would be to compare social risk in children with comorbid designations of ADHD and LI to children with SLI and ADHD only. Potential differences in relative risk between children with pragmatic language impairment and children with SLI should also be examined.

Discrepant outcomes were also associated with the present study. One association between verbal proficiencies and victimization provided by a previous report was not replicated. Contrary to predictions motivated by Conti-Ramsden and Botting (2004), limited proficiency with tense marking was not associated with negative peer experiences. These results suggest that in younger groups of children with SLI, the presence of morphosyntactic deficits may not be sufficiently stigmatizing to increase their risk for negative peer experiences. Other associations between verbal abilities and peer experiences not provided in previous reports were also found in the present study sample. For example, a modest but nonetheless significant trend was found suggesting that those children in the SLI group who had relatively stronger narrative skills were likely to report more instances of prosocial behaviors in their peers.

At first blush, this result appears to align well with the supposition that stronger narrative skills positively contribute to children's social success. However, TNL Comprehension scores were also positively associated with the physical and verbal bullying indices, indicating a tendency for the children with SLI with better receptive language skills to report more negative peer interactions as well. Admittedly, these results are equivocal, and verification requires additional investigations. One possible explanation is that the actual rate of negative peer experiences associated with SLI status was underestimated in this study because those children with SLI who had the weakest receptive language abilities were unable to provide the investigation with accurate reports of their peer experiences.

An attempt was made in this study to select a measure of peer victimization that would be accessible to most of the children with SLI, one that focused on observable peer behaviors and did not rely on children's understanding of the potentially vague terms *bullying* or *teasing* or require an interpretation of their peers' motives. Nonetheless, this may not have provided some of the children with SLI with an adequate accommodation. Perhaps, for example, the task demand of providing a scaled response on the MLISC was too complicated and/or distracting for children with weaker receptive abilities. However, a complication with this interpretation is the observation that children in the SLI group also completed the FASS (a protocol that uses a similar scaling response to the MLISC) and in this case provided a much wider range of scores than the children in the TD group did. Furthermore, there were no significant associations between the FASS quotients and the Narrative Comprehension measure for the children with SLI ( $r$  range:  $-.08$  to  $.278$ ), suggesting that variations in children's receptive abilities were not determining how children used a graded response. Another complication with this interpretation is that the overall rates of peer victimization observed in this study sample were consistent with those observed in other study samples consisting of older children and adolescents with SLI, who probably had more developed receptive language abilities than the children with SLI who participated in this study. Clearly, more research on the issue is warranted. To consider further the possibility of underreporting of negative peer experiences in young children with SLI, future investigations should supplement self-reports of victimization with peer reports of the levels of peer aggression that their classmates with SLI are receiving.

A more speculative explanation for the observed associations between narrative skills and reported peer experiences in children with SLI is that these were accurate but reflected the

presence of mediator/threshold effects. Specifically, it may be that weak comprehension skills in children provoke overall disinterest or disregard from peers (i.e., low prosocial and low bullying) rather than active negative regard and high bullying. Perhaps this association holds until a certain level of receptive proficiency is achieved, after which children with SLI are able to participate more frequently in peer conversations. Unfortunately, increased participation provokes both positive and negative peer interactions. As children with SLI move away from social marginalization, they may be considered by some of their peers as more acceptable targets of victimization. The present study is inadequate to test this possibility, requiring additional investigations, but if this observation is confirmed, it would suggest that practitioners should be on alert for the emergence of social difficulties when children's language abilities improve.

Another important finding was the absence of a potential "friendship buffering effect" for children with SLI in this study like the one that has been established in the literature for TD children, although there was evidence for this in both the children with ADHD and the TD children. Participants from these groups with more close friendships reported lower levels of victimization. The absence of a possible buffering effect for children in the SLI group was not consistent with Savage's (2005) report of an association between parent evaluations of their children's friendships and social risk, but it was consistent with Knox and Conti-Ramsden's (2007) observation that self-reports of friendships were not associated with victimization in adolescents with SLI. This outcome was interesting in light of the relatively more pronounced social difficulties that children with ADHD had with friendlessness and their decreased participation with their friends. One venue for additional research might be to examine more closely the characteristics of peers that children with SLI and children with ADHD have identified as their *friends* as well as the quality of these friendships (e.g., protective/nonprotective). Research conducted with TD children suggests that friends who themselves are rejected by their peers or who display physical weakness or high levels of aggression do not provide the same buffering effect observed with other close friendships (Hodges, Malone, & Perry, 1997; Schwartz et al. 2008).

Consistent with previous reports, most of the variation in children's levels of victimization was unaccounted for by the variables examined in this study, suggesting that other neurodevelopmental or environmental factors may be more relevant for the establishment of negative peer experiences in children with SLI and ADHD (e.g., working memory, emotional regulation, presence/absence of bullies within the peer group). One factor that has been overlooked is variations across children who are bullying their peers with SLI or ADHD. It is possible that there are important characteristics that differentiate students who aggress on peers with language impairments, those who aggress on peers with behavioral difficulties, and those who aggress on TD peers. As a result, there might also be qualitative differences in the bullying experienced by children with SLI and children with ADHD. Interaction effects may also exist between children's clinical status and demographic variables (e.g., age, gender, SES) that could not be examined in this study. These represent important venues for future research.

In sum, investigations have not yet yielded straightforward links between verbal proficiencies and negative peer experiences, suggesting that important moderators/

mediators have not been identified, which could guide service provision. In this study, an unexpected and previously unreported link between stronger receptive narrative abilities and an increased risk for being physically or verbally bullied was found for children with SLI. It could be argued that rather than providing clarity, this new (and potentially spurious) finding appears to add to the existing confusion. However, it might also suggest that more work needs to be done developing transactional models of the socioemotional concomitants associated with developmental language disorders.

Consistency presently exists across reports in the elevation of risk for children with developmental language disorders relative to TD children. The stability of this finding encourages adjustments in clinical practice. Specifically, practitioners should routinely screen children on their caseloads who have developmental language disorders for evidence of peer victimization. This would be especially important for those children who display social, emotional, or behavioral difficulties because bullying and harassment may be contributing factors to the symptoms they are displaying. Furthermore, these factors are not usually considered in conventional social skills or pragmatic language intervention programs, and yet they may be limiting the effectiveness of intervention efforts. Self-report instruments such as the MLISC that have been designed for young children represent an efficient means for identifying students who are at risk for negative peer experiences. Follow-up is critical and should use existing bullying prevention protocols and support personnel (e.g., counselors, social workers). Children who are being victimized must be provided with protection and support, and their bullies must be identified and dealt with appropriately.

Several strategies have been developed to address the needs of students who are being victimized by their peers, including assertiveness training, pairing targeted children with prosocial peers, and structuring peer-group experiences to provide more supportive peer contexts (cf. Smith, Pepler, & Rigby, 2004). Clearly, implementation of these procedures with students who have developmental language disorders will present new challenges for SLPs, educational psychologists, teachers, and other school personnel, requiring accommodations to existing programs for children's verbal limitations. However, the potential for alleviating or removing some of the worst socioemotional consequences that have been associated with language impairments creates a clinical mandate.

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**Table 1**

Participant characteristics: Group means, standard deviations, and ranges.

	SLI			ADHD			TD			F	Contrasts
	M	SD	Range	M	SD	Range	M	SD	Range		
Age (months)	94.20	7.9	84–107	94.30	7.4	85–107	93.95	6.4	85–107	0.10	SLI, ADHD, TD
Maternal education <sup>a</sup>	3.35	0.90	2–5	3.55	0.90	2–5	3.85	1.20	1–5	1.20	SLI, ADHD, TD
Nonverbal abilities <sup>b</sup>	97.75	8.2	88–120	101.15	10.34	83–120	110.35	10.4	91–126	9.92 <sup>***</sup>	SLI, ADHD < TD
Verbal abilities <sup>c</sup>	12.50	2.72	8–17	20.90	2.71	17–25	22.60	2.82	17–27	77.24 <sup>***</sup>	SLI < ADHD, TD
ADHD symptoms <sup>d</sup>	56.80	7.70	50–73	72.75	5.24	67–80	53.30	4.56	50–63	61.81 <sup>***</sup>	SLI, TD < ADHD

*Note.* SLI = specific language impairment, ADHD = attention-deficit/hyperactivity disorder, and TD = typically developing.

<sup>a</sup> Five-point scale where 1 = *some high school*, 3 = *some college* and 5 = *some graduate school/advanced degree*.

<sup>b</sup> Naglieri Nonverbal Ability Test (Naglieri, 2003) standard score ( $M = 100$ ,  $SD = 15$ ).

<sup>c</sup> Clinical Evaluation of Language Fundamentals—Fourth Edition Screening Test (Semel, Wiig, & Second, 2004) total score (range for 5- to 8-year-olds = 0 to 28; criterion scores: 7 years = 16; 8 years = 18).

<sup>d</sup> Child Behavior Checklist, DSM-ADHD subscale (CBCL; Achenbach & Rescorla, 2001), T score (higher values indicate elevated levels of inattention/ hyperactivity-impulsivity difficulties; scores > 65 usually indicate clinically significant problems).

\*  $p < .05$

\*\*  $p < .01$

\*\*\*  $p < .001$ .

Table 2

Verbal, behavioral, attitudinal, and social measures: Group means, standard deviations, and ranges.

	SLI			ADHD			TD			F	Contrasts
	M	SD	Range	M	SD	Range	M	SD	Range		
Test of Early Grammatical Impairment Screening Score <sup>d</sup>	77.40	24.76	0–97.20	97.28	3.31	90–100	99.10	1.38	97–100	9.75 <sup>***</sup>	SLI < ADHD, TD
Test of Narrative Language: Comprehension <sup>b</sup>	7.05	2.70	3–11	11.25	2.67	7–15	11.65	2.83	6–18	17.33 <sup>***</sup>	SLI < ADHD, TD
Test of Narrative Language: Oral Narration <sup>b</sup>	6.35	2.35	1–11	9.35	2.27	5–14	10.60	2.30	8–15	17.90 <sup>***</sup>	SLI < ADHD, TD
Conners' Parent Rating Scale—Revised: DSM-IV Inattentive <sup>c</sup>	60.20	12.17	45–86	75.30	7.78	65–88	52.30	10.98	40–80	24.88 <sup>***</sup>	SLI, TD < ADHD
Conners' Parent Rating Scale—Revised: DSM-IV Hyperactive <sup>c</sup>	56.90	10.35	45–78	79.55	7.49	69–90	49.75	6.95	41–67	68.56 <sup>***</sup>	TD < SLI < ADHD
Child Behavior Checklist: Externalizing <sup>d</sup>	51.90	14.41	24–73	64.40	9.32	44–79	45.45	10.50	33–67	13.77 <sup>***</sup>	SLI, TD < ADHD
Child Behavior Checklist: Internalizing <sup>d</sup>	53.60	10.48	39–73	58.90	11.69	39–78	45.95	7.85	33–67	8.25 <sup>**</sup>	TD < ADHD
Feelings About School Survey: General Attitudes toward School <sup>e</sup>	3.97	0.95	1.67–5.00	4.07	1.08	1.67–5.00	4.17	0.83	2.33–5.00	0.126	SLI, ADHD, TD
Feelings About School Survey: Relationship with Teacher <sup>e</sup>	4.48	0.79	2.33–5.00	4.60	0.55	3.33–5.00	4.43	0.87	1.67–5.00	0.266	SLI, ADHD, TD
Feelings About School Survey: Perceived Math Competence <sup>e</sup>	4.25	0.98	2.00–5.00	3.95	1.35	1.00–5.00	4.37	0.54	3.50–5.00	0.935	SLI, ADHD, TD
Feelings About School Survey: Perceived Literacy Competence <sup>e</sup>	4.00	1.32	1.00–5.00	4.05	1.26	1.00–5.00	4.43	0.69	3.00–5.00	0.434	SLI, ADHD, TD
Child Behavior Checklist: Number of Close Friends <sup>f</sup>	1.75	0.78	0–3.0	1.40	0.82	0–2.0	2.40	0.68	1.0–3.0	8.80 <sup>***</sup>	SLI, ADHD < TD
Child Behavior Checklist: Frequency of Contact With Friends <sup>g</sup>	1.10	0.72	0–2.0	0.70	0.67	0–2.0	1.35	0.75	0–2.0	4.29 <sup>*</sup>	ADHD < TD

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- <sup>a</sup> Scale 0 to 100;
- <sup>b</sup> Subtest standard score ( $M = 10$ ,  $SD = 3$ );
- <sup>c</sup>  $T$  score: scale 40–90, scores > 65 usually indicate clinically significant problems;
- <sup>d</sup>  $T$  score: scale 33–100, scores > 63 usually indicate clinically significant problems;
- <sup>e</sup> Composite average across key items using 5-point scale (1 = *very negative*, 3 = *neutral*, 5 = *very positive*);
- <sup>f</sup> Scale: 0 = *none*, 1 = *one*, 2 = *two to three*, 3 = *four or more*;
- <sup>g</sup> Scale: 0 = *less than once*, 1 = *one to two*, 2 = *three or more*.
- \*  $p < .05$ ,
- \*\*  $p < .01$ ,
- \*\*\*  $p < .001$ .

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**Table 3**  
My Life in School Checklist (MLISC; Sharp, Arora, Smith, & Whitney, 1994): Group means, standard deviations, and ranges.

	SLI			ADHD			TD			F	Contrasts
	M	SD	Range	M	SD	Range	M	SD	Range		
Physical bullying (12 max)	3.65	3.92	0-12	2.30	2.90	0-9	1.20	1.64	0-5	3.747*	TD < SLI
Verbal bullying (16 max)	5.70	5.84	0-16	3.25	3.23	0-10	4.10	2.79	0-9	1.371	SLI, ADHD, TD
Prosocial (30 max)	14.60	6.72	4-30	15.70	8.04	2-29	18.40	1.44	7-30	1.516	SLI, ADHD, TD

\*  $p < .05$

Bivariate correlations between MLISC indices and nonverbal, verbal, behavioral, attitudinal, and social measures.

**Table 4**

	Physical bullying index			Verbal bullying index			Prosocial index		
	SLI	ADHD	TD	SLI	ADHD	TD	SLI	ADHD	TD
Naglieri Nonverbal Ability Test	-.034	.290	.149	-.121	.106	.061	.156	-.149	.251
Test of Early Grammatical Impairment	.266	.215	.236	.118	.259	-.272	.184	-.274	-.006
TNL-Comprehension	<b>.468*</b>	.003	.085	<b>.454*</b>	-.093	.137	<b>.586**</b>	-.222	.103
TNL-Oral Narration	-.026	.182	-.207	.185	.109	.053	<b>.496*</b>	.043	.265
Conners DSM-IV Inattentive	.316	-.055	-.056	.165	.227	.092	.147	-.062	-.242
Conners DSM-IV Hyperactive	<b>.394*</b>	.362	.010	<b>.404*</b>	.255	.204	.146	.159	.014
CBCL Internalizing	.044	.316	-.314	.113	.278	.167	.059	.065	-.010
CBCL Externalizing	.244	.289	-.234	.295	.215	.011	.250	.081	-.098
General Attitudes Toward School	.306	.139	-.108	.200	.010	.033	.056	.285	.121
Relationship With Teacher	-.287	.135	.158	-.253	.020	.013	.182	.373	.254
Perceived Math Competence	.305	.112	.060	.207	.088	-.166	.093	.182	-.100
Perceived Literacy Competence	.187	<b>.422*</b>	.060	.207	.003	.111	.179	.193	.339
Number of Close Friends	.055	-. <b>406*</b>	-. <b>413*</b>	.178	-.338	-.319	.062	.125	.143
Frequency of Contact With Friends	.013	-.006	-.196	.083	-.062	.143	.011	-.025	.237

\*  $p < .05$ , two-tailed;

\*\*  $p < .01$ , two-tailed.