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The Socioemotional Behaviors of Children With SLI: Social Adaptation or Social Deviance?

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Two models of the relationship between socioemotional behavior and verbal abilities are compared: Social Adaptation and Social Deviance. The socioemotional integrity of 17 children with specific language impairment (SLI) and 20 unaffected children who were age-matched (AM) was examined using the Child Behavior Checklist (CBCL) and the Teacher's Report Form (TRF) at kindergarten and first grade. All CBCL and TRF syndrome scale means for both groups were within normal limits. Significant group x respondent interaction effects were observed; teachers, and not parents, rated the children with SLI as having more social and internalizing behavioral problems than their AM peers. Significant differences between groups were restricted to internalizing, social, and attention problems. Very little congruence or stability over time was observed in the clinical ratings. The outcomes support a Social Adaptation Model of socioemotional behavior and language impairment. Implications for the clinical management of children with SLI are discussed.

KEY WORDS: specific language impairment, socioemotional development, children's language impairment, child language development, sociobehavioral deficits in children

For a long time it has been observed that children with language impairments tend to have social limitations in the form of emotional/behavioral problems (Brown, 1936; Ingram, 1959; Orton, 1937). There are now two well-established sources of support for this generalization within the scientific literature. One source is represented by a series of studies into the socioemotional behavior problems of children with language limitations (e.g., Beitchman, Hood, & Inglis, 1990; Beitchman, Nair, Clegg, Ferguson, & Patel, 1986; Benasich, Curtiss, & Tallal, 1993; Cantwell & Baker, 1985; Paul, Cohen, & Carpulo, 1983; Petrie, 1975; Stevenson & Richman, 1978; Tallal, Dukette, & Curtiss, 1989). The other source consists of investigations of the language limitations of children diagnosed with socioemotional behavior disorders (e.g., Baltaxe & Simmons, 1988; Camarata, Hughes, & Ruhl, 1988; Chess & Rosenberg, 1974; Cohen, Davine, & Meloche-Kelly, 1989; Gualiteri, Koriath, Van Bourgondien, & Saleeby, 1983; Javorsky, 1995; Love & Thompson, 1988). Both lines of investigation have converged into a likely co-occurrence rate between the two disorder categories as somewhere around 50–70%. Considerable variation, however, exists across studies (see reviews by Baker & Cantwell, 1982, 1985; Baltaxe & Simmons,

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1990; Donahue, Cole, & Hartas, 1994; Piancenti, 1989; Prizant et al., 1990; Windsor, 1995). What is clear is that the relationship between language limitations and socioemotional behavior problems is highly relevant for a majority of the children identified as language impaired. Furthermore, the ways in which this relationship is interpreted will have direct implications on the sorts of interventions these children receive.

The available literature is limited in theoretical and empirical ways that make interpretation problematic. A foremost problem is the lack of clearly stated theoretical positions, with identified assumptions and predicted outcomes, that serve as the basis for an empirical study designed to evaluate predictions. Because many of the available studies are based on broadly defined clinical groups, the condition of language impairment is often confounded with other clinical conditions (such as mental retardation), and wide age ranges appear. Finally, there is very little information available about stability of measurement across informants and over time.

In this study, these limitations are addressed in the following ways: We formulate two conceptual models relevant for children with specific language impairment (SLI), specify the assumptions, and enumerate predicted outcomes. These are then evaluated in testing with standardized instruments across time, at the relatively restricted but crucial time of school entry. The raters are parents and classroom teachers. Among the outcomes are a proposed gold standard for clinical identification, involving reliability across raters and predictability over time.

Two Interpretative Frameworks for the Socioemotional Behaviors of Children With SLI

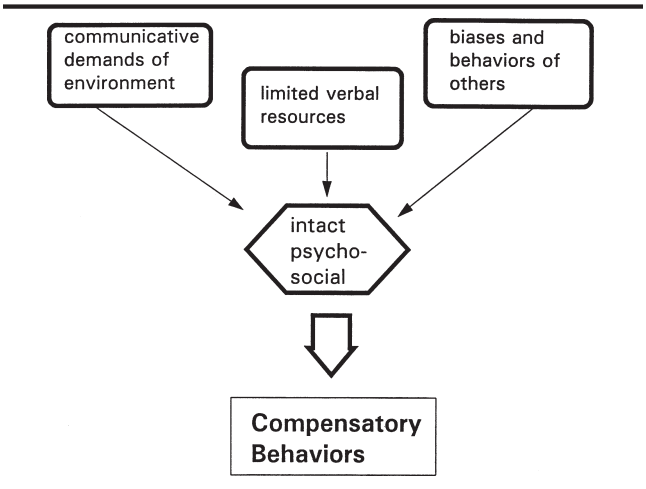
One interpretive account, referred to here as the Social Adaptation Model (SAM), considers the behavioral differences between children with SLI and their normally developing peers to be the result of an interaction between the children's primary language limitations, social context, and the biases people associate with limited verbal proficiency. The second account, referred to here as the Social Deviance Model (SDM), considers differences between children with SLI and nonaffected children to be manifestations of differences in underlying socioemotional traits. These two models lead to clear and contrasting assumptions, predictions, and clinical implications.

Social Adaptation Model (SAM)

The Social Adaptation Model (here extended from the Social Consequences Model of Rice, 1993) assumes that children with SLI have the same psychosocial attributes as their peers. Their repertoire of socioemotional behaviors, however, reflects social adaptations to their language limitations. As illustrated in Figure 1, three components of a child's social situation are filtered through the psychosocial system to generate compensatory behaviors: (a) the communicative demands of the situation, (b) a child's verbal limitations, and (c) the biases and behaviors of people within their environment. Children with SLI adjust their discourse behaviors to the communicative demands of the situation (see Craig, 1995 for a review; Fey, Leonard, & Wilcox, 1981). During peer interactions, these adjustments include (a) lower rates of initiations and responses relative to their normally developing peers, (b) lower rates of assertive acts during peer negotiations, and/or (c) a stronger tendency to rely on adults to mediate their interactions (Craig & Evans, 1989; Craig & Washington, 1993; Hadley & Rice, 1991; Rice, Sell, & Hadley, 1991). Children with SLI also have to adjust to high rates of peer rejection (Fujiki, Brinton, & Todd, 1996; Gertner, Rice, & Hadley, 1994) and pejorative adult assessment of their intellectual and social competence on the basis of their verbal proficiency (Rice, Hadley, & Alexander, 1993; Segebart & Watkins, 1996). These adjustments lead to genuine social differences and limitations. Within the SAM perspective, these differences are thought to be natural and predictable outcomes of the primary language limitation.

The bulk of the evidence in support of the SAM account comes from observations of preschool children, or adult judgments of preschool children, with the notable exception of Fujiki, Brinton, and Todd (1996), who report limited social skill ratings for elementary-school-age children with SLI. Let us consider possible outcomes at school entry. At this level, kindergarten teachers expect children to have mastered basic communication and social interaction skills (Hains, Fowler, Schwartz, Kottwitz, &

Figure 1. Social Adaptation Model.



Rosenkoetter, 1990). The decision not to promote a child to regular first grade can depend on the teacher's estimate of the child's social maturity (Walsh, 1989). Furthermore, teachers can project social immaturity judgments onto children with speech and language limitations (Rice, Hadley, & Alexander, 1993). Thus, it is reasonable to predict that social maturity is important to school placement, and teachers are likely to regard children with language impairments as socially immature. Parents, on the other hand, may have a different perception of their child's social maturity, as a consequence of knowing the child's communicative strengths and weaknesses and/or seeing the child interact with other children in more familiar and less formal circumstances. Within the SAM framework, the communicative demands of the kindergarten classroom may lead to adjustments in children's sociobehavioral responses, which in turn are viewed by teachers as evidence of social immaturity, whereas the adjustments in social interactions may be less obvious at home and parents may regard the child's social maturity more positively than the teachers do. For these reasons, the SAM model predicts rater differences (parents vs. teachers) in sociobehavioral competencies at school entry.

Social Deviance Model (SDM)

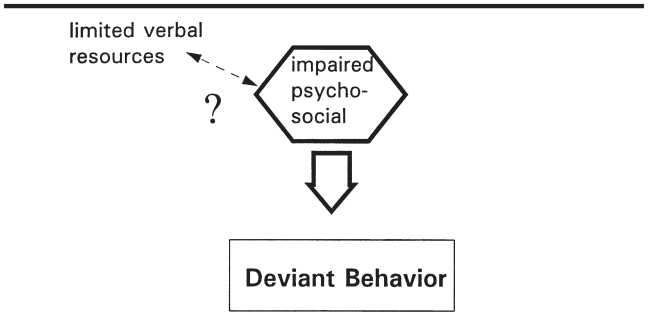
An alternative framework can be discerned in the literature, which we have pulled together here in a summary form as the Social Deviance Model (SDM). A crucial difference between the two models is how behavioral adjustments, such as apparent shyness and withdrawn behavior, are to be viewed. A core assumption in developmental psychopathology is that there is an underlying socioemotional trait structure that guides children's socioemotional development. This is reflected in widely used behavioral rating scales such as the Child Behavior Checklist (CBCL; Achenbach, 1991a) and Teacher Report Form (TRF; Achenbach, 1991b), which identify several dimensions of socioemotional development. These traits can be impaired or affected in the course of a child's development, resulting in symptoms of social behavioral problems. For example, the CBCL and TRF yield the diagnostic category "internalizing syndrome." In this syndrome, anxious, inhibited behavior is thought to be a manifestation of an underlying latent socioemotional construct, which is derived by patterns of correlations among test items that rate various kinds of shy or withdrawn behavior (Achenbach, 1991c). The consequence of this classification is that the sociobehavioral adjustments of the child with primary language deficits is interpreted as an inherent defect in much the same way as the behaviors of children with other diagnosed psychopathologies (e.g., conduct disorder, attention deficit/hyperactivity disorder, personality disorder). The import can be seen in suggestions for how to interpret "internalizing problems" for children who become involved in the legal system, where it is suggested that "internalizing problems" can be used to indicate "whether inner discomfort is likely to be present that may motivate efforts to change" (Achenbach, 1991c, p. 119). Within this view, a child's language competencies (or limitations) are part of a set of psychosocial symptoms, nested under constructs such as "internalizing syndrome," which in turn can be used to predict motivational state.

In Figure 2, the relationship between impaired psychosocial status and limited verbal resources is captured by a broken arrow, indefinite as to the direction of influence or extent of relatedness. In this literature, models begin with the assumption of an impaired psychosocial mechanism; what is unknown is the exact relationship with limited verbal resources. This framework is evident in list-like enumerations of multiple possibilities in which there may be overlap, independence, or a shared underlying third factor (e.g., Baltaxe & Simmons, 1990; Piancenti, 1989; Windsor, 1995).

This model is evident in studies that investigated the socioemotional behavior problems of children with language limitations. These studies used measures of socioemotional deviance that were validated on psychiatric populations and then used to compare children with SLI and normally developing controls. Such comparisons show significant differences between the two groups of children (e.g., Beitchman et al., 1986; Cantwell & Baker, 1985). Other studies approached the association by examining the language limitations of children diagnosed with socioemotional behaviors, where differences are also found (e.g., Camarata, Hughes, & Ruhl, 1988; Love & Thompson, 1988). The fact that the children with SLI showed sociobehavioral similarities to the psychiatric population and that the psychiatric samples show language impairments led to the assumption that similar underlying mechanisms were operative. In contrast to SAM, the view is that children with SLI are at risk for basic underlying social-emotional disorders, independent of their language disability.

An unexamined factor in the SDM model, with regard to children with SLI, is the stability of the presumed

Figure 2. Social Deviance Model.



underlying socioemotional trait. The underlying trait structure of the SDM, in which a child is presumed to "have" an "internalizing syndrome" assumes some inherent stability both across social contexts and over time. If not, the condition would be conditional on raters or time of measurement. In contrast, the SAM account does expect possible rater effects, depending upon the child's perceived need to make sociobehavioral adjustments, and possible changes over time. Of relevance here is the prediction that, within an SDM model, parent and teacher judgments at school entry should show congruence and a child's clinical classification should persist over time. In contrast, SAM predicts that rater differences and change over time in clinical classification is expected.

The two models generate substantively different views of the nature of the condition of SLI and different directions for clinical intervention. With regard to possible etiological factors, there is currently strong interest in possible genetic contributions for SLI (cf. Rice, 1996). It will be important to know if other conditions co-occur with SLI and, if so, whether the co-occurring symptoms are linked to common underlying constitutional differences. The SAM model points toward caution in assuming that socioemotional differences and language impairment are inherently linked to an underlying common trait, because of the need to consider the possible consequences of language impairment. Under the SDM perspective, limited verbal proficiency is but a part of an underlying trait difference that includes sociobehavioral factors as well as verbal abilities. With regard to intervention, under the SAM model, treatment priorities should be organized around the remediation of primary language skills. Thus, improvement of peer and other social relations should be addressed within this context, which may also require direct modification of peer and teacher attitudes. In contrast, under the SDM perspective, socioemotional deficits are assumed to be either the cause or the direct consequence of limited verbal skills. Deficits of these kinds would require specialized intervention components (i.e., psychiatric or pharmacological).

Key Previous Findings for Children With SLI

Beitchman et al. (1990) used a parent report, the Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1983), and the Conners Teacher Report Form (CTRF; Conners, 1969) to investigate cross-informant reliability in the identification of socioemotional disorders in a sample of 142 children with speech/language impairments. The teachers identified 34% of the speech/language impaired group and 22% of the age- and gender-matched control group as being within the clinical range. Similarly, 31% of the speech/language impaired group and 22% of the control group were identified through the maternal ratings. Although the raters were in close agreement, two considerations limit the study's value. One is the high percentage of control children identified, which suggests limited validity of measurement. The second is that the group of children with speech/language problems showed considerable heterogeneity with regard to cognitive and perceptual competencies as well as diversity of speech and language impairments.

In a study of the social and emotional status of 4-year-old children with and without language impairments, Tallal et al. (1989) screened out children with below-normal nonverbal performance IQ scores, hearing impairments, non-native English status, autism, and neurological hard signs. In contrast to the Beitchman et al. (1990) sample, children with only speech articulation deficits unaccompanied by language disorder were also excluded. Tallal et al. (1989) report a considerably smaller proportion of clinically abnormal parental ratings for both groups of children (language impaired, 6%; normal language controls, 0%). The discrepancy between the results obtained by these two reports reveals the importance of controlling for nonverbal limitations within groups of children with language impairments.

In a follow-up study at 8 years of age on 99 of the original 130 4-year-old children studied by Tallal et al. (1989), 32% of the children in their language-impaired group and 9% of the children in the control group fell within the clinical range on the 1983 version of the CBCL (Benesich, Curtiss, & Tallal, 1993). This increase was attributed to an unexpected decline in nonverbal IQ in the language-impaired group during the 5-year interim. Multiple linear regression analyses revealed that a decrement in nonverbal IQ from age 4 to age 8 was associated with higher behavioral problem scores. In contrast, improvement or decline in degree of language impairment from age 4 to age 8 did not predict socioemotional status at age 8.

The Conners Teacher Report Form (1969) was also administered to the teachers of both groups at 8 years of age to measure socioemotional problems at school. Mean values were analyzed and no significant differences were observed between the two groups on the total number of behavioral problems reported. Group differences were not observed on the teacher ratings at 8 years of age, suggesting that these children had maintained a stable level of socioemotional functioning. However, a subgroup of these children, namely those whose nonverbal IQ scores had dropped, experienced considerable difficulty at 8 years of age according to parental report.

In these studies, a general distinction is drawn between behaviors that represent externalizing problems

and behaviors that represent internalizing problems. Externalizing problems refer to severe aggressive, delinquent, or conduct behaviors; and internalizing behaviors represent behavioral extremes in the areas of social withdrawal, inhibition, anxiety, or depression. These two groupings reflect a distinction that has been detected in numerous multivariate analyses of children's socioemotional behavioral problems (Achenbach, 1991c). Other areas that fall outside this dichotomy are deficits in attention, difficulties with thought perseveration/fixation, and social problems.

The available research supports the general characterization of the socioemotional problems of children with SLI as probably being one of either internalization, attention, or social problems rather than externalization or some other socioemotional disorder. For example, Tallal et al. (1989) found significant differences between their group of 4-year-old children with SLI and a control group matched for age, race, IQ, and SES on ratings of internalizing behaviors but not on externalizing behaviors. These differences were not observed at 8 years of age within the subgroup studied by Benasich et al. (1993). Similarly, the most commonly reported socioemotional disorder associated with language impairment is attention deficit disorder (Beitchman et al., 1986; Cantwell & Baker, 1985; Love & Thompson, 1988; Paul et al., 1983). These reports suggest a co-occurrence rate of roughly 50%. In contrast, the co-occurrence of externalizing and conduct behavior disorders has been found by most investigators to approximate the incidence within the general population (Beitchman et al., 1986; Cantwell & Baker, 1985).

The long-term outcomes of the reported early socioemotional problems experienced by children with SLI are not known. The results of a few studies on the social adjustment in young adults with a history of SLI suggest that the long-term consequences of early language impairment may not readily translate into observable differences. Records, Tomblin, and Freese (1992) used the Present Life History survey, a quality-of-life measure frequently used in social psychology literature. The results indicated that despite histories of mild to severe specific language impairment, the young adults with SLI did not differ significantly from the control subjects along these dimensions. Similar results were found by King, Jones, and Lasky (1982), who used a nonstandardized telephone interview format to ask 30 families about the presence of social and interpersonal problems in their 13- to 21-year-old children.

The purpose of the present study was to investigate teacher and parent ratings of sociobehavioral development of children known to have SLI as preschoolers and a group of control children matched for age. Parents and teacher ratings were compared during the important first years of school when children enter into kindergarten and make the transition into first grade. Critical to the distinction between underlying psychosocial deficits and social difficulties caused by the social consequences of a language impairment is the situational and longitudinal stability of the behavioral symptomatology associated with SLI. This study contributes evidence about the sociobehavioral development of a carefully studied group of children with SLI, who are known to have morphosyntactic impairments at the time they enter formal academic instruction. Further, the study is the first to examine longitudinal differences between parent and teacher judgments for the affected and control groups in order to assess congruence and stability of judgments over time.

Method

Participants

The participants were 37 children, all from English-speaking monolingual homes, originally recruited for a longitudinal study of the development of morphosyntax (Rice & Wexler, 1996; Rice, Wexler, & Cleave, 1995). Seventeen children were identified as having specific language impairment (SLI), and 20 were age-matched unaffected children (AM). All the children had been participating in the longitudinal study for approximately 2 years, and the specific nature of their linguistic deficit has been carefully documented (Rice & Wexler, 1996; Rice, Wexler, & Cleave, 1995). Socioemotional information was collected from the children at two ages: first, at approximately 6 years (SLI: M = 71.57 months, SD = 3.187; AM: M = 72 months, SD = 3.17 months) and again one year later (at 7 years).

The children in the SLI group (6 girls and 11 boys) were recruited for the longitudinal study while they were in preschool from the caseloads of certified speech-language pathologists. All of the children had been identified as language impaired at preschool, and most had been receiving services since that time. They all had receptive/expressive language impairment, without severe speech impairment or limited "intelligibility." At entry into the longitudinal study, they met the following criteria (Rice & Wexler, 1996): (a) previously identified as language impaired by a certified speech-language pathologist; (b) receptive language performance on the PPVT–R (Dunn & Dunn, 1981) one or more standard deviations below the mean; (c) expressive language performance one standard deviation or more below age expectations as measured by a calculation of mean length of utterance (MLU) from a sample of at least 150 utterances (normative information from Leadholm & Miller, 1993); (d) normal intellectual functioning as measured by the Columbia Mental Maturity Scale

(CMMS; Burgemeister, Blum, & Lorge, 1972) at an age deviation score of 85 or higher; (e) passing score on a probe screening for articulation competency, with consistent use of final -t, -d, -s, and -z, and only minor mispronunciation on the Goldman Fristoe Test of Articulation (GFTA; Goldman & Fristoe, 1986); and (f) normal hearing acuity as measured by a hearing screening at 25 dB at 1000, 2000, and 4000 Hz. In addition, the Test of Language Development Primary (TOLD–P; Newcomer & Hammill, 1988) was administered to each child. The group mean on the Spoken Language Quotient was 75.9 (standardization sample M = 100, SD = 15). Two children were within one standard deviation of the mean on this test, with quotients of 88 and 93, but were included because they met the other criteria.

At the time of this study, midway through the longitudinal study, children in the SLI group at ages 6 and 7 continued to demonstrate the profiles evident at entry into the study. The group mean at age 6 on the CMMS was 93 (SD = 8), on the PPVT–R it was 83 (SD = 12), and on the TOLD–P 2 it was 82 (SD = 7). At age 7 the SLI group mean on the CMMS was 100 (SD = 10), on the PPVT–R it was 84 (SD = 11), and on the TOLD–P 2 it was 79 (SD = 9). This profile indicates that, as a group, these children continued to perform on nonverbal IQ measures within the normal range and continued to demonstrate low to low-normal performance on receptive vocabulary and composite language skills.

An important outcome is that the affected group of children showed a pronounced limitation of morphosyntax, in the form of a protracted period of acquisition of the set of morphemes that mark grammatical tense. This deficit is evident when the affected group is compared with a younger control group of children with equivalent mean length of utterance. What is important is that the affected group performs far below the levels of their age peers, and even lower than the grammatical levels of control groups 2 years younger (cf. Rice & Wexler, 1996; Rice, Wexler, & Cleave, 1995). The significance is that this study is the first report of sociobehavioral ratings for children with SLI who are known to have particular grammatical deficits, as well as conventional low performance on standardized tests.

At 6 years of age, 14 of the 17 children were receiving speech and language services. Eight of the 17 children in the SLI group were attending regular kindergarten classrooms, 8 were in transitional programs, and 1 was in preschool. All 3 of the children who were not receiving language intervention at 6 years had nonetheless been identified for transitional class placements by their kindergarten teachers.

Children in the AM group, 10 girls and 10 boys, were selected from preschools in the same communities as the children with SLI. They met the following criteria: (a) identified as normally developing by teacher and parents, (b) receptive language skills within normal limits as measured by the PPVT–R, (c) expressive language skills within or above one standard deviation of the mean MLU for their age (Leadholm & Miller, 1993), (d) normal intellectual functioning as measured by CMMS, (e) normal articulation as measured by GFTA, and (f) normal hearing as measured by a hearing screening. All of the children in the AM group performed in the normal to high-normal range on the TOLD–P. This level of performance continued into ages 6 and 7. At 6 years of age, none of the children were receiving speech treatment or other special services. Of the 20 children, 19 were in regular kindergarten, and 1 was in preschool.

Sociobehavioral Measurement Instrument

The Child Behavior Checklist (CBCL; Achenbach, 1991a) and the Teacher Report Form (TRF; Achenbach, 1991b) were used for eliciting parent and teacher ratings of children's socioemotional status. The presence of behavioral problems are indicated (e.g., *physically attacks people, thumb sucking, depressed*), as well as the frequency or severity of such problems (*never, sometimes, always*). Normative information relative to a standardized sample of normally developing and psychiatric populations is available. The standardization and scoring procedures for both parent and teacher behavioral rating scales are directly comparable. Moderate cross-informant Pearson correlations are reported (Achenbach, 1991c). The two instruments are intended to be components of an evaluation, with the diagnosis of socioemotional disturbance requiring validation from multiple informants. This reflects an increasing recognition within the field of developmental psychopathology that information from multiple informants is necessary to assess children's competencies and problems.

Procedures

During the end of the second and third year of the longitudinal study the children's parents were asked to complete the CBCL. At the same time, the teachers were asked to complete the TRF. When the first such measurement was made, most of the children were 6 years old and were in kindergarten. At the second measurement, most of the children were 7 years of age and in first grade. In each case, data were collected at the end of the academic year (April/May).

Directions for completing the TRF were given to the teachers in person, and any questions were answered at that time. After the forms were completed, they were mailed to the investigator for analysis. The CBCL was

mailed to the children's parents along with written directions. Forms were mailed back to the investigator when completed. Teacher and parent forms were scored and entered into an electronic database by two research assistants.

Results

Forty-three children were originally recruited for participation in the study (22 SLI, 21 AM). Parent and teacher forms completed when the children were age 6 and when they were age 7 were available for 37 of the 43 children (17 SLI, 20 AM). One child in the SLI group left the study between the second and third year. One parent in the SLI group did not send back a CBCL form for the child in question at either age. Three parents in the SLI group did not send back a second CBCL form. One parent in the AM group did not send back a first CBCL. All of the teacher forms were returned.

Analyses of Group Differences: Rater and Time Effects

To examine group differences and their interactions across the different respondents (teacher, parent) over the two sampling times (ages 6 and 7 years), the data were analyzed in two ways: (a) a series of univariate analyses of variance, and (b) chi-square analyses treating the dependent variables as dichotomous using clinical cut-off values.

The scoring is reported in terms of normalized *T* scores, allowing for direct comparison across the two scales (cf. Achenbach, 1991c; see Table 1). These are norm-referenced scores based on a truncated cumulative frequency, where a *T* score of 67 corresponds to the 95th percentile and represents the clinical cut-off point. Mean scores for both the SLI and AM groups on all of the behavioral syndrome scales were within the normal range. In other words, as a group, the children with SLI received ratings that were more comparable to those of their typically developing peers than to those obtained by the psychiatric populations used in the standardization of these measures.

Table 1. CBCL and TRF derived *T* scores: Means (and standard deviations) by group, rater, and time of measurement.

	Teacher		Parent	
	SLI	AM	SLI	AM
Kindergarten				
Withdrawn	57 (9)	51 (3)	55 (6)	51 (2)
Social Problems	56 (7)	53 (5)	51 (2)	51 (3)
Attention	58 (9)	53 (4)	54 (6)	54 (5)
Internalizing	56 (10)	45 (8)	49 (10)	43 (9)
Externalizing	58 (7)	51 (9)	47 (11)	49 (8)
First Grade				
Withdrawn	58 (9)	51 (3)	54 (7)	52 (3)
Social Problems	55 (6)	47 (16)	53 (4)	51 (2)
Attention	57 (7)	53 (4)	55 (7)	54 (5)
Internalizing	55 (8)	45 (8)	50 (11)	47 (11)
Externalizing	53 (9)	47 (6)	51 (9)	45 (8)

Although within the normal range, the obtained mean *T* score values for the SLI group were also consistently higher than the mean *T* score values for the AM group. Significant group effects were observed on the following syndrome scales: Withdrawn, [$F(1, 35) = 20.84$, $p < .0001$ (η^2 .373)]; Social Problems [$F(1, 35) = 8.10$, $p < .001$ (η^2 .188)]; Attention Problems [$F(1, 35) = 4.72$, $p < .05$ (η^2 .119)]; Internalizing [$F(1, 35) = 15.21$, $p < .0001$ (η^2 .303)]. Group comparisons on Externalizing [$F(1, 35) = 3.64$, $p > .05$] were nonsignificant. The Eta values indicate effect sizes ranging from 12% to 37% of the variance. The behavioral profile is consistent with the general characterization that the behavioral symptomatology of SLI corresponds best to those behaviors measured by scales of internalizing, social, or attention problems.

Significant group × respondent effects were observed on the Social Problem [$F(1, 35) = 4.40$, $p < .05$ (η^2 .121)] and the Internalizing scales [$F(1, 35) = 4.80$, $p < .05$ (η^2 .112)]. All other group × respondent effects were nonsignificant [$F(1, 35) < 3.6$, $p > .05$]. The two-way group × respondent interactions for the Internalizing and Social Problem behavior scales are depicted in Figure 3. As shown by the Eta values, these interactions contributed 12.1% and 11.2% unique variance respectively to the total variation observed within these two measures. In both cases, teachers, and not parents, rated the children within the SLI group as having significantly more behavior problems on these dimensions than the control children. These findings are consistent with the SAM prediction that the socioemotional problems of children with SLI are situationally dependent, but such variability is not expected for the control group.

Group and respondent differences were also investigated, treating the dependent variables as dichotomous (clinical/nonclinical) by using the clinical cut-off scores provided by the CBCL and TRF manuals. The purpose of these analyses was to examine group and respondent differences in the number of children identified as being within the clinical range that might have been masked by the group means. Results are presented in Table 2.

The chi square analyses provided further evidence that the teacher and not the parent ratings identified significant differences between the two groups of children. In fact, none of the parent ratings differentiated

Figure 3. Group x respondent interaction effects: social problems and internalizing scales.

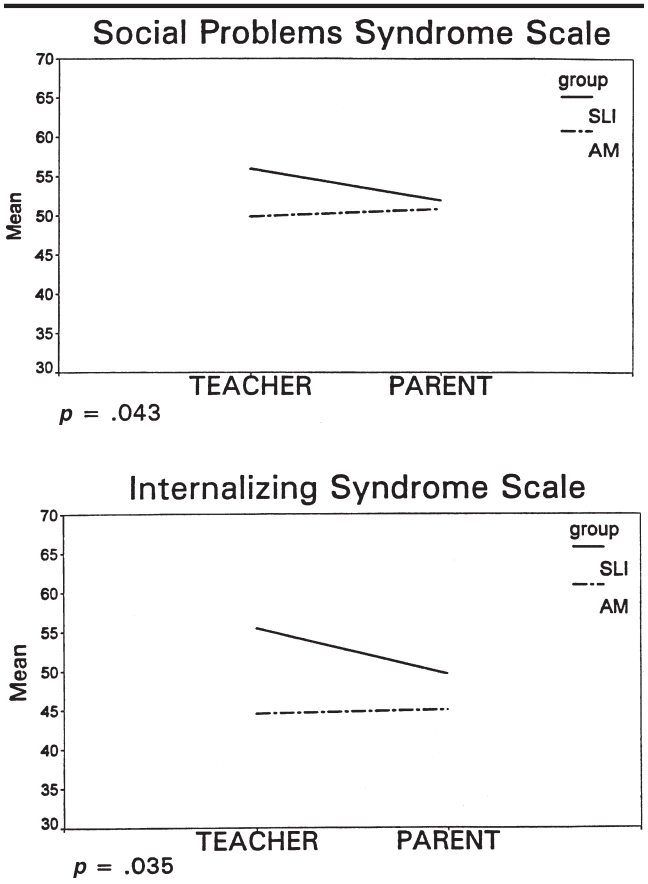


Table 2. Number of children identified as being within the clinical range.

	Teacher scale		Parent scale	
	SLI	AM	SLI	AM
Kindergarten (*N* = 41)				
Internalizing	7	1[a]	3	0
Externalizing	4	3	4	2
Withdrawn	4	0[b]	1	0
Social Problems	2	0	0	0
Attention	5	0[c]	2	1
First Grade (*N* = 38)				
Internalizing	9	1[d]	4	4
Externalizing	6	0[e]	2	0
Withdrawn	2	0	2	0
Social problems	0	0	0	0
Attention	3	0	1	0

[a] $\chi^2 = 5.19$, $df = 1$, $p < .05$
[b] $\chi^2 = 4.21$, $df = 1$, $p < .05$
[c] $\chi^2 = 5.40$, $df = 1$, $p < .05$
[d] $\chi^2 = 7.96$, $df = 1$, $p < .01$
[e] $\chi^2 = 6.69$, $df = 1$, $p < .01$

the groups on any of the scales. Furthermore, on the Social Problems syndrome scale none of the parental ratings fell within the clinical range. This was true for both groups and across both sampling times. However, across both sampling times more than a third of the children in the SLI group were identified by their teachers as being within the clinical range on the Internalizing syndrome scale. The number of children within the SLI group who scored within the clinical range on the Externalizing syndrome scale increased from 4 to 6, whereas the number within the AM group dropped from 3 to 0.

When agreement between and within raters across the two time samples was considered on a case-by-case basis there was very little evidence that the same children were being identified. Across all of the syndrome scales only 4 children were ever identified by both raters at any sampling time. In addition, these children were evenly distributed across the different syndrome scales such that no more than one child appeared on any given scale. Only one child within the SLI group was clinically identified by both parental and teacher ratings at both sampling times. This child was identified on the Internalizing and Attention syndrome scales. Thus, the clinical identification of children with SLI demonstrated very poor reliability and stability even within the limited time period sampled (1 year).

Effects Across Groups: Mitigation Over Time of Externalizing and Social Problems

An additional interaction proved to be significant across two of the behavioral scales. Significant respondent × round effects were observed on the Externalizing [$F(1, 35) = 7.07$, $p<.01$ (η^2 .18)] and the Social Problems [$F(1, 35) = 4.67$, $p < .01$ (η^2 .118)] scales. These interactions accounted for 18% and 11.8% unique variance, respectively. In both cases, the teachers' ratings were significantly higher than the parental ratings at age 6, but not at age 7. This suggests that teacher ratings of aggression and social problems generally tend towards convergence with the less-punitive parent ratings during the first year of school. This trend proved to be independent of the child's language status—that is, applicable to both the children with SLI and their normally developing peers. Such a finding is not surprising given the potential difficulties children may experience in the transition from kindergarten into the first grade.

Related Evidence of Peer Relationships

The CBCL provided further evidence that the socioemotional problems identified by teachers were influenced by the school situation. Two of the nonsyndrome

scale items asks parents to estimate the number of close friends their child has (not including brothers and sisters) and to indicate how many times a week their child does things with these friends. The ability to make and maintain friendships is generally regarded as an ecologically valid measure of children's social competence. Based on parental report, no differences were observed between the children with SLI and their normally developing peers in either the mean number of friends (t = –.02; two tailed p = .987) or the amount of time spent playing with their friends (t = –1.10; two tailed p = .278). Another, independent source of evidence was available from a locally designed questionnaire that was administered as part of the larger longitudinal study. This instrument included parental judgments of the child's social development. When asked how frequently their children played with other children, t tests revealed no statistically significant group differences on this item [$t(1, 39) < 1.43$, $p > .05$], thereby replicating the CBCL findings. Further, parents rated their SLI children as well-behaved at home as control parents rated their children [$t(1, 39) = 1.09$, $p < .05$].

Discussion

In this study we investigated the congruence between children's behavioral problems reported by parents and teachers during the transitional academic year from kindergarten to first grade, to determine the socioemotional behaviors of children with SLI within this time frame. We hypothesized that the transition into formal education represents a key period of vulnerability for children in general and that data from this age is critical to evaluating competing accounts on the socioemotional integrity of the population of children with SLI. In particular, the SAM model posits that preschool children with SLI have basically sound socioemotional systems that can be overlaid with sociobehavioral adjustments related to limited language skills that can be similar to the symptoms of children identified as socioemotionally disturbed. In contrast, the SDM model views the symptoms as manifestations of an underlying socioemotional deficit. The two models differ with regard to possible rater effects and stability of diagnosis over time. The SAM model expects differences between teacher and parent ratings of sociobehaviors when children with SLI go to kindergarten and are experiencing the extensive social adjustments that appear at that time, whereas the SDM model, following best clinical practice, expects congruence across multiple raters for determination of a socioemotional deficit. Within a SAM model, the rater differences could modulate over time, as the children and teachers adjust to the child's experiences in school.

The key findings are as follows. First, as a group, the children with SLI scored within normal limits on all of the syndrome scales on both the parent and the teacher profiles. Although group differences were observed across some of the mean T scores, the overall socioemotional profile indicated that the children with SLI were much more like their normally developing peers than the psychiatric samples used to standardize the ratings scales. Second, the observed group differences within the normal range between the SLI and the control group on the Internalizing and the Social Problems scales were mediated through significant group × rater effects. In both cases, teachers and not parents rated the children within the SLI group as having more behavioral problems. Third, when agreement between teachers and parents across the sampling times was considered on a case-by-case basis very little congruence of stability was observed. Furthermore, on independent questionnaire items the parents of the SLI children saw their children as generally well-behaved youngsters who played with other children in socially appropriate ways, providing further corroboration of the assumption of the SAM model that under certain social circumstances, children with SLI demonstrate social competence.

The outcomes of the study bear on how to interpret the nature of the condition of SLI, how to measure sociobehavioral development of children with language impairments, and how to view priorities for intervention. With regard to the nature of the condition of SLI, these results suggest some caution for assuming that language impairments are inherently a reflection of an underlying trait disorder that includes sociobehavioral factors as well. The children in the sample studied here were known to have language impairments that lead to a low performance level on conventional language testing and also lead to a reduced grammatical competency in particular areas of grammatical functioning (i.e., grammatical tense). The associated sociobehavioral problems, if they exist at all, are of less magnitude and within the nonclinical range of differences.

This does not rule out the possibility that in other clinical populations an underlying SDM model may be implicated. Previous studies investigating the relationship between primary language impairments and socioemotional disorders have included children with additional cognitive, perceptual, or speech limitations (e.g., Baltaxe & Simmons, 1988; Beitchman et al., 1986; Cantwell & Baker, 1985; Chess & Rosenberg, 1974). The sample of children studied in this investigation did not demonstrate deficits of nonverbal intelligence, perceptual skills, or severe speech impairments. Nor did this group decline in nonverbal IQ over time as has been observed by other investigators. The import is that language impairment may exist relatively independently of cognitive or underlying socioemotional deficits, as

suggested by the findings reported here, or it may co-occur with cognitive or underlying socioemotional conditions. It will be important for further investigations to sort this out, because understanding of possible etiological factors requires clarity on this matter.

Another important implication arises with regard to measurement. It is clear that valid assessment of socioemotional status requires careful consideration of the possible influence of verbal ability. At the level of item construction, it is vital that items that assess communication competence not be conflated with estimates of socioemotional competence. This is an important issue with regard to the CBCL and TRF. For example, Tallal et al. (1989) performed a discriminate function analysis of the 1983 version of the Achenbach CBCL and found that the items that correctly differentiated the language-impaired group from the normal group 93% of the time were either direct estimations of expressive or receptive language skills (e.g., *speech problems*, *won't talk*, *confused*) or were interpretations of neurodevelopmental integrity (e.g., *clumsy*, *accident prone*). These items loaded onto the Immaturity and Social Withdrawal subscales, with *speech problems* loading onto both subscales. As the results of Rice et al. (1993) demonstrated, teachers and other adults can infer the cognitive and social competence of children with limited verbal skills on the basis of speech samples alone, a finding recently replicated by Segebart and Watkins (1996). This bias is likely to enter into the interpretation of results obtained by many psychological instruments that typically do not differentiate language from social impairment.

The current version of the Achenbach CBCL and TRF includes *speech problems* within its Other Problems subscale, and other modifications to the instrument appear to be approaching a more language-neutral diagnostic framework. However, the Achenbach rating scales still include on their Internalizing and Attention Problem syndrome scales such items as *refuses to talk* and *has difficulty following directions*, among other items that could be interpreted as either a primary or secondary manifestation of a specific-language impairment. To investigate the possibility that the differences observed in this study between the two groups of children were in part a consequence of linguistic contaminants within the parent and teacher surveys, separate chi square analyses were conducted with the following three linguistic/academic items removed from the Achenbach rating scales collected at 6 years of age: *has difficulty following directions*, *refuses to talk*, and *speech problems*. The removal of just these three items from the scoring procedures was sufficient to render all observed group differences between the SLI and AM groups nonsignificant, with the exception of the differences observed on the Attention Problems syndrome scale. In other words, once the items were removed that the SAM model expects to show differences because of the social adjustments of a language impairment, the apparent difference between the groups' socioemotional integrity disappears. The conclusion is that extreme caution is warranted in the use of standardized informant-based behavioral scales to evaluate children with SLI. Because of the informant format, such measures are likely to be highly influenced by indirect indicators of language competence. This in turn will severely limit our ability to accurately assess the co-occurrence of these two disorders.

Another important measurement issue is that of interrater agreement. The interpretive manual for the CBCL and TRF (Achenbach, 1991c) emphasizes that the two measures are thought to be tapping into the same underlying socioemotional competency, although it is recognized that there is less-than-perfect agreement between raters. Achenbach (1991c) reports a Pearson correlation of .44 between parent and teacher ratings (p. 78). In this study, the correlation of parents with teacher total ratings for the control group is .38 ($p = .08$) in kindergarten and .46 ($p = .04$) in first grade; for the SLI group, –.27 ($p = .23$) in kindergarten and .16 ($p = .53$) in first grade. The z statistic means of calculating a test of difference between independent correlations (Bruning & Kintz, 1977) found that at neither time of measurement did the correlations for the two groups differ ($z < 1.96$, $p < .05$), although the relatively small number of subjects yields low power for detection of a difference. There are two points of relevance here. One is that the overall rater agreement to be expected is not robust, contrary to the underlying assumptions of the measure of socioemotional integrity. Second, for the experimental questions examined here, detection of group and rater main effects and interactions would be hampered, not facilitated, by relatively low correlations for the controls as well as the clinical group. Within this context, the observed size of the obtained interaction effects (i.e., 11–12% variance accounted for) can be regarded as moderately high, given that interactions account for variance after group effects are removed. At the same time, caution is in order about expected rater similarity, when using informant-based measures of socioemotional competency. The CBCL/TRF manual offers little guidance in interpretation of rater differences and no mention of verbal limitations. As noted earlier, the SDM model does not address such complex interactions, although the SAM model expects them.

Turning our attention now to priorities for intervention, the SAM model says that because limited verbal proficiency can be at the core of socioemotional symptoms evident in children with SLI, treatment should be organized around the remediation of their primary language skills as a first priority, with improvement of socioemotional competence as secondary. The prediction is that as these children become more facile with their

language they are more likely to participate in verbally demanding situations in socially appropriate ways, in much the same way that individuals learning a second language eventually overcome communicative passivity and avoidance.

A related priority is to work to change peer and teacher attitudes and their stereotypes about the underlying nature of a child's limited verbal proficiency. This could be accomplished through teacher-staff inservices on the topic of possible language/cognition disassociation or through sensitization programs with the child's peers. As teachers are better able to differentiate language development and social maturity they will be in a better position to understand the child with SLI.

Finally, there are implications for how practitioners can proceed when they are presented with a language-impaired child who has been identified by teachers as shy, withdrawn, experiencing social problems, or having difficulty paying attention in class. There is good reason to expect that these behaviors represent the primary manifestation of a language impairment rather than a hidden psychosocial disorder. If, after careful evaluation, questions persist about the socioemotional integrity of particular children, we offer the following gold standard for clinical identification: First, the presence of clinical levels of behavioral symptoms must be validated by at least two informants from different settings (e.g., classroom teachers, parents, child self-report). Second, the behavioral symptoms must demonstrate stability over time (e.g., 6 months, 1 year). This is to highlight that children with SLI should not be treated as psychiatric patients unless there is careful evaluation and converging diagnostic evidence. One must keep in mind that the best method for identifying clinical levels of disturbance now available is the use of standardized socioemotional rating scales. However, these scales often contain language and academic items that would need to be removed to ensure that linguistic deficits are not being measured indirectly.

Ultimately, full evaluation of the SAM and SDM models of the socioemotional competence of individuals with SLI will require converging evidence from multiple studies. Just as the relationship between language skills and social status is complex in unaffected groups of people, the interface of language impairment and social competence in children with SLI is multilayered and highly interactive. We highlight here the contrast between the view that apparent social deficits can be an expected outcome of language impairment (SAM) versus SLI as a condition that includes an underlying social deficit (SDM). We do so as a way of advancing the ongoing dialog about the condition of SLI, ways to think about etiological relationships, the complexities of measurement of socioemotional competence in these children, and priorities for intervention. Although we argue that the evidence obtained here and in other studies favors the SAM view, a definitive choice between the two models awaits additional investigation.

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The Socioemotional Behaviors of Children With SLI: Social Adaptation or Social Deviance?

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