

Clinical Forum

Language and Communication Disorders in Adolescents

Longitudinal Patterns of Behavioral, Emotional, and Social Difficulties and Self-Concepts in Adolescents With a History of Specific Language Impairment

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Purpose: This study explored the prevalence and stability of behavioral difficulties and self-concepts between the ages of 8 and 17 years in a sample of children with a history of specific language impairment (SLI). We investigated whether earlier behavioral, emotional, and social difficulties (BESD); self-concepts; and language and literacy abilities predicted behavioral difficulties and self-concepts at 16/17 years.

Method: In this prospective longitudinal study, 65 students were followed up with teacher behavior ratings and individual assessments of language, literacy, and self-concepts at 8, 10, 12, 16, and 17 years.

Results: The students had consistently higher levels than norms of 5 domains of BESD, which had different trajectories over time, and poorer scholastic competence, whose trajectory also varied over time. Earlier language ability did not

predict later behavioral difficulties or self-concepts, but the prediction of academic self-concept at 16 by literacy at 10 years approached significance.

Conclusions: The importance of distinguishing domains of behavioral difficulties and self-concept is demonstrated. Language, when measured at 8 or 10 years of age, was not a predictor of behavior or self-concepts at 16 years, or of self-concepts at 17 years. The study stresses the importance of practitioners addressing academic abilities and different social-behavioral domains in delivering support for adolescents with SLI.

Key Words: specific language impairment, behavioral assessment, prospective research, prospective longitudinal studies

It is now well established that children with language impairment (LI) are more likely than typically developing (TD) children to experience behavioral difficulties (Beitchman, Wilson, Brownlie, Inglis, & Lancee,

1996; Fujiki, Brinton, & Clarke, 2002; Katelaars, Cuperus, Jansonius, & Verhoeven, 2010; Lindsay, Dockrell, & Strand, 2007; Tomblin, Zhang, Buckwalter, & Catts, 2000; van Daal, Verhoeven, & van Balkom, 2007). Prevalence rates of ~35%–50% for behavioral difficulties in children with LI have been identified (Lindsay et al., 2007; van Daal et al., 2007). However, the research evidence shows important variations in relation to the type of behavioral difficulty; the type of language difficulty; the effect of other factors, including academic ability (e.g., literacy) and self-concept; the person making the determination of behavioral difficulties, typically a parent or teacher; and the age of the child. A further issue concerns the stability (and change) in the behavioral difficulties over time. There has been only limited research into the patterns of development of children who have been identified as having primary language difficulties

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(i.e., specific language impairment, SLI) from childhood to adolescence, and this study aimed to address this gap.

The present study focuses on children with SLI, also known as specific speech and language difficulties, in the United Kingdom (Dockrell, Lindsay, Letchford, & Mackie, 2006). These children have language difficulties in the absence of intellectual, sensory, or neurological impairment and have a level of language functioning that is below that of their nonverbal cognitive ability (Bishop, 1997; Leonard, 1998). Prevalence rates around school entry of ~7% have been reported by Tomblin et al. (1997). The research literature examining the relationship between behavioral difficulties and LI includes studies of children specifically with SLI and studies that involve broader samples, including children with low nonverbal ability who do not meet the SLI classification. In our review, we focus on and specify studies of children with SLI but also refer to studies of children with other types of LI as appropriate.

To our knowledge, this is the first paper that presents a longitudinal analysis of both behavioral, emotional, and social difficulties (BESD) and self-concept domains at 8, 10, 12, and 16 years of age, and also self-concept at 17 years, in a sample of students with a history of SLI. In addition, we examine the association of the children's language and literacy abilities at 8 and 10 years with these behavioral and self-concept domains at 16 and 17 years.

BESD

In England, the term BESD is used as a single administrative category for the collection of national statistics on students with special educational needs (Strand & Lindsay, 2009). For research and practice, however, it is important to distinguish between different patterns of students' difficulties and needs within this broad category. Behavioral difficulties refer to externalizing behaviors, primarily hyperactivity and attention difficulties (e.g., attention deficit and hyperactivity disorder [ADHD]), and conduct problems. Hyperactivity and attention problems in elementary school children (Lindsay et al., 2007; Lundervold, Heimann, & Manger, 2008) and adolescents (Snowling, Bishop, Stothard, Chipchase, & Kaplan, 2006) have a strong relationship with language difficulties. For example, Lindsay et al. (2007) reported that 47% of 8-year-olds in their sample with SLI were rated by their teachers as exhibiting significant hyperactivity, in the clinically significant range, using the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1994).

Conduct problems have also been identified as being more prevalent in children with language difficulties in preschool and early childhood (Tomblin et al., 2000). High levels of conduct problems have also been reported in adolescence, but the evidence is variable. In a recent small-scale study ($N = 15$), Clegg, Stackhouse, Finch, Murphy, and Nicholls (2009) found that two thirds of students who

were expelled from a school had language difficulties. However, no significant increase in teacher-rated prevalence of conduct problems was found by Lindsay et al. (2007) in their study of children with SLI at 8, 10, or 12 years, although the parents did report significantly higher levels than the norm. This study identified that context is an important factor in the reporting of behavioral difficulties: Teachers judge a student's behavior against that of many other students in the large-scale setting of a school, whereas parents judge their child within a family and neighborhood against a small number of comparative children.

Conflicting findings have also been reported for emotional difficulties (i.e., internalizing problems). Lindsay and Dockrell (2000), with a sample of children with SLI, and Tomblin et al. (2000), with a broader sample of children with LI, found no significant increase in the prevalence of emotional difficulties among younger children (4–8 years), whereas other studies with SLI samples have reported higher levels of emotional difficulties during childhood and adolescence (Conti-Ramsden & Botting, 2008a, 2008b; Redmond & Rice, 2002). More consistency has been found regarding problems with social relationships, among both younger children and adolescents, for those with SLI (Durkin & Conti-Ramsden, 2007) and those with LI (Fujiki, Brinton, Isaacson, & Summers, 2001). For example, Lindsay et al. (2007) reported that between 27% and 30% of their 8- to 12-year-olds with SLI were rated by their teachers as having significant peer problems, approximately three times greater prevalence than expected, and Durkin and Conti-Ramsden (2007) found that 16-year-olds with a history of SLI had poorer quality friendships than a TD control group.

Evidence for continuities in BESD among children with SLI has also been reported. Although Benasich, Curtiss, and Tallal (1993) did not analyze age trends, they found an increased probability of behavior problems in children with SLI compared with (different) matched groups of TD children at ages 4 and 8 years. However, Benasich et al. found nonsignificant differences at 8 years for both the externalizing and internalizing scales. They also found a decline in IQ among the children with SLI over the period, which was significantly related to an increased incidence of behavior problems at 8 years.

Lindsay et al. (2007) demonstrated that continuity of BESD over time varies with the domain of behavior examined. In their study, the percentage of children with SLI with significant hyperactivity showed a substantial reduction from 47% to 19% between 8 and 12 years, whereas peer problems remained relatively stable (27%–30%). Recently, St. Clair, Pickles, Durkin, and Conti-Ramsden (2011) reported significant reductions in hyperactivity and conduct problems in a sample with SLI, from ages 7 and 8 years to 16 years, but a gradual nonsignificant increase in peer problems over this period. The trend for emotional difficulties showed a marginally significant reduction, but there was no significant age trend for a global measure of BESD.

Results also differ across studies according to the number and type of raters. Some studies have relied on single raters of behavior, typically a parent or teacher (e.g., Benasich et al., 1993; Redmond, 2011; Snowling et al., 2006). Other studies have used two raters, for example, both mothers and fathers, as a means of examining concordance, allowing composite scores to be used; others have combined a parent and teacher rating (Stevenson et al., 2010). Lindsay et al. (2007), however, reported different patterns of results found from parents' compared with teachers' ratings, using the SDQ. For example, whereas teachers' ratings of conduct problems did not show higher prevalence compared with the norm, parents' ratings were between three and four times higher—a greater prevalence that was highly significant.

The research evidence therefore indicates that, in general, children with SLI and other developmental language difficulties are at greater risk than TD children of having BESD. However, the pattern is complex as studies differ in the domains of BESD investigated, who rates the behavior(s), and the ages at which data are collected. Furthermore, relatively few studies have investigated the nature of language difficulties that may be associated with these behavioral problems. Hart, Fujiki, Brinton, and Hart (2004) did not find a relationship between children's language abilities and withdrawn behavior. However, the authors did find a significant relationship between LI severity and the severity of problems with social behaviors: Prosocial behavior and likeability, for example, were both related to receptive language, whereas likeability was related to expressive language only. Lindsay and Dockrell (2000) provided complementary evidence, reporting that difficulties with receptive grammar as measured using the Test for Reception of Grammar—Second Edition (TROG-2; Bishop, 1989) and an expressive narrative (*The Bus Story*; Renfrew, 1997) were significantly negatively correlated with an overall measure of behavioral difficulties in a sample of 8-year-olds with SLI. Nonverbal ability is also a factor: Behavioral difficulties are more common among children who have both LI and low nonverbal ability (Benasich et al., 1993; Snowling et al., 2006).

There is also evidence of predictive relationships with language, although these are not consistent. Measures of both pragmatic language difficulties and receptive grammar have been shown to add significantly to regression models for teacher-rated behavioral difficulties beyond the variance explained by measures of earlier behavioral difficulties (Lindsay et al., 2007). Pragmatic difficulties alone have been shown to be predictors of behavioral difficulties (St. Clair et al., 2011), with receptive language difficulties predicting friendships (Durkin & Conti-Ramsden, 2007). Expressive language difficulties at age 8 predicted behavioral difficulties at ages 10 and 12, as well as concurrently, for teacher-rated but not for parent-rated behavior (Lindsay et al., 2007). However, in the Lindsay et al. (2007) study, expressive

language was no longer significant in the regression model when pragmatic and receptive language difficulties were added. In a sample of 16-years-olds, expressive language was negatively correlated with a measure of social stress, although it was not a predictor in a regression model after measures of the young people's perceived social skills and social acceptance were included (Wadman, Durkin, & Conti-Ramsden, 2011). Overall, pragmatic and expressive language skills appear to be important factors in behavior, but typically, these do not account for large amounts of variance. Social acceptance appears to be associated with receptive language, but again, the variance accounted for is small (Durkin & Conti-Ramsden, 2007).

Poor academic level is also associated with behavioral difficulties in the general population. In a national survey of almost eight thousand 5- to 16-year-olds in Great Britain, Green, McGinnity, Meltzer, Ford, and Goodman (2005) found that ~56% of the children with conduct disorders had reading difficulties, and 64% had spelling problems. Poor literacy development is also associated with LI, including SLI (Catts, Fey, Tomblin, & Zhang, 2002; Dockrell, Lindsay, & Palikara, 2011). Hence, in examining the prediction of behavioral difficulties at 16 years of age, it is important to explore earlier literacy abilities in addition to language skills.

Self-Concept

Students with SLI are also at risk of low self-esteem (Wadman, Durkin, & Conti-Ramsden, 2008) and poor self-concepts (Lindsay, Dockrell, Letchford, & Mackie, 2002). These terms are often used interchangeably with consequent confusion, but there is now general agreement that it is important to distinguish between the two. *Self-esteem* is a global construct reflecting a person's general views of him- or herself, which is relatively stable (Marsh, 2007). *Self-concept* refers to a person's self-perceptions concerning different domains (e.g., academic competence, social acceptance) and is developed through interaction with, and interpretations of, the environment. There is now substantial evidence to support self-concept being multifaceted. Important dimensions include academic self-concept, which may be further distinguished (e.g., of literacy, mathematics), and social competence, which may also be separated into social acceptance, friendship, romantic appeal, and more (Harter, 1999). Hence, self-concept is multidimensional, whereas self-esteem is unidimensional. There is now empirical support both for this conceptualization and for the usefulness of measuring domain-specific self-concept(s) rather than global self-esteem (Marsh & Martin, 2011).

High self-esteem and positive self-concepts can act as protective factors against a range of negative outcomes in response to adverse events or circumstances (Baumeister, Campbell, Krueger, & Vohs, 2003). Children with special educational needs, however, might be predicted to be at risk

of low self-esteem, and their self-concepts may be negatively affected by developmental problems such as learning difficulties (Lackaye & Margalit, 2006). LI, as shown earlier, is associated with both poorer academic achievement and behavioral difficulties, so children with SLI might also be expected to be at risk of poor self-concepts, not only for these reasons, but also because their communication difficulties are likely to result in more difficulties in social interactions. In turn, these difficulties may result in less engagement with other children, which may consequently lead to underestimating their competencies.

Previous research has produced mixed results with respect to self-esteem and self-concept in children with SLI. McAndrew (1999) found no significant differences in the self-esteem and self-concepts of a group of 8- to 14-year-olds with SLI. This lack of difference from TD children was replicated by Jerome, Fujiki, Brinton, and James (2002) with 6- to 9-year-olds, but not 10- to 13-year-olds, who perceived themselves more negatively with respect to scholastic competence, social acceptance, and behavioral conduct than a comparison group of children with TD language. The results for scholastic competence and social acceptance were replicated by Lindsay et al. (2002) for 10- and 12-year-olds with SLI but not 8-year-olds. This consistency supports the view of Harter (1999) that differentiation of self-concept develops with age, and that younger children tend to view themselves in terms of absolutes and to be unrealistically positive in their self-concepts (Jerome et al., 2002).

Much research has previously used single measures of self-esteem (e.g., Wadman et al., 2008), but it is more productive to explore multiple aspects of self-concept. Harter's (1999) measures, which include increasing numbers of scales with increasing age, reflecting the greater differentiation of self-concepts as a child matures into adolescence and beyond, provide more valid and useful information than unidimensional scales.

A further issue in self-concept research is causal directionality: Is positive academic self-concept a primary determinant for academic achievement, or is academic achievement the determinant for positive academic self-concept? The evidence suggests that there is a bidirectional relationship such that increases in academic self-concept lead to increases in subsequent academic achievement, and academic achievement enhances academic self-concept (Marsh & Martin, 2011).

The Current Study

The research evidence to date indicates that children with LI are at increased risk than TD children of a range of BESD and of both lower self-esteem and poorer self-concepts. However, the picture is complex, with variations on several dimensions, including self-concept domains, type of behavioral problems, type of language difficulty, age of

child, measures of language ability, and level of nonverbal ability. In addition, there is limited evidence regarding either patterns of relationship over chronological age or the earlier language abilities that may be implicated in later outcomes.

As a result, practitioners have a research base that is insufficient to plan services and identify specific intervention programs. For example, special provision may be planned with a focus on language needs and not take account of current and changing needs related to BESD. Furthermore, there is the potential to overestimate behavioral difficulties: If ~40% of children with LI have BESD, then the majority do not. Better knowledge of the factors that might contribute to different types of BESD in children with SLI would help practitioners more accurately identify who is, or is likely to be, in need of intervention.

In this study, we sought to extend the research base by addressing three questions.

- What is the prevalence and stability (or change) of BESD and self-concepts between 8 to 10 years and 16 to 17 years?
- Are behavioral and social difficulties at 16 to 17 years predicted by behavior, self-concepts, language, and literacy abilities at 8 to 10 years?
- Are self-concepts at 16 to 17 years predicted by behavior, self-concepts, language, and literacy abilities at 8 to 10 years?

METHOD

Participants

Children start compulsory education in England at age 5 (reception; the same age as kindergarten in the United States). From age 6 to 16, they progress through Years 1 to 11, equivalent to U.S. Grades 1–11: primary school Years 1–6 (key stages 1 and 2) and secondary school Years 7–11 (key stages 3 and 4). Students end compulsory education at age 16, when the national examinations for the General Certificate of Secondary Education (GCSE) are taken in different subjects. At age 16, students may choose to undertake further study at school, typically for 1 or 2 years (to undertake either qualifications at the GCSE level or advanced-level qualifications, or a combination of the two). Alternatively, students may choose to leave school and transfer to a college of further education, enter vocational training (e.g., an apprenticeship), or enter employment.

Following a survey of educational provision for children with developmental language difficulties in two local authorities (LAs) in England, one a city, the other a rural county with small towns, we asked speech and language therapists, educational (school) psychologists, and special educational needs coordinators to identify 8-year-old children

who had a discrepancy between their speech and language functioning and that which would be expected given the child's functioning in other areas, and who were also experiencing significant language-based learning needs. A total of 133 children were identified (Dockrell & Lindsay, 1998), from whom a subsample from each LA ($n = 59$) was derived.

The aim was to obtain a representative sample of the original professional referrals but excluding children with other complicating factors such as a diagnosis of autism, sensory impairments, or genetic disorders. In addition, children were excluded where (a) English was an additional language, (b) they fell outside the age band, (c) we were unable to make contact with the families, or (d) the parents declined to participate in the study. A further 10 children were recruited who were attending a residential school for children with severe speech and language difficulties (see Dockrell & Lindsay, 2001, for further details).

The resulting sample ($N = 69$, 17 girls and 52 boys) had been identified as having SLI and had a mean age of 8;3 (years;months; $SD = 4$ months). All were from a White English background, and all had English as their only language. Eleven percent were eligible for free school meals, the commonly used measure of social disadvantage in England (Strand & Lindsay, 2009), similar to the national average of 14.3%. All children were recorded as having special educational needs, and 54% had a statement of special educational needs under the English Education Act of 1996 (<http://www.legislation.gov.uk/ukpga/1996/56/contents>). The statement follows a statutory assessment and specifies the legal requirement for provision that must be made to meet the child's individual special educational needs. This applies to ~3% of students in England, of whom more than half attend mainstream schools. The remaining children were at School Action Plus, where support for a child is provided by professionals external to the school, such as speech and language therapists, as well as by the school itself.

Individual assessments were conducted to confirm that the participants had SLI: A series of repeated measures analyses of variance (ANOVAs) confirmed that the children's vocabulary (British Picture Vocabulary Scale, Second Edition; BPVS II; Dunn, Dunn, Whetton, & Burley, 1997), receptive grammar (TROG-2), and expressive narrative (*The Bus Story*) were all significantly lower than their nonverbal ability (Matrices subtest of the British Ability Scales, Second Edition; BAS II; Elliott, Smith, & McCulloch, 1997) (Dockrell, Lindsay, Mackie, & Connelly, 2007). Details of the measures are presented in the Measures section. The sample was followed up on five more occasions (10, 12, 14, 16, and 17 years) throughout compulsory education (up to 16 years) and during the first year of postcompulsory education, training, and/or work. Previous publications have examined the children's early language and literacy (Dockrell & Lindsay, 1998), reading skills at 16 (Palikara, Dockrell, & Lindsay, 2011), writing ability (Dockrell, Lindsay, & Connelly, 2009; Dockrell et al., 2007), and predictors of

academic attainments at school leaving (Dockrell et al., 2011); the young people's own perspectives on their development, needs, and the provision made to meet their needs (Palikara, Lindsay, & Dockrell, 2009); the perspectives of their parents (Lindsay & Dockrell, 2004) and teachers (Dockrell & Lindsay, 2001); and the young people's behavior and self-concepts of competencies up to 12 years (Lindsay & Dockrell, 2000; Lindsay et al., 2002, 2007).

Sixty-five of the students were followed up in their last year of compulsory education ($M_{\text{age}} = 15;8$, range 15;2–16;5). Forty-seven were attending mainstream schools, of whom nine were attending schools that had designated resource base special provision. The other 18 were attending special schools for students with either language difficulties ($n = 9$) or moderate learning difficulties (comparable to intellectual disability; $n = 9$).

Over the period from 8 to 16 years, a significant proportion of the students had moved between different types of provision (Dockrell & Lindsay, 2008). In common with earlier points in the study, there were few differences on the psychometric measures between students attending different provision. Students in specialist settings scored significantly lower on measures of reading comprehension, $F(1, 57) = 6.11, p = .02, \eta_p^2 = .10$, nonverbal ability, $F(1, 57) = 5.00, p = .03, \eta_p^2 = .08$, and one measure of language, the Formulated Sentences subtest of the Clinical Evaluation of Language Fundamentals: Revised UK Edition (CELF-R^{UK}; Peers, Lloyd, & Foster, 1999), $F(1, 57) = 4.50, p = .04, \eta_p^2 = .03$, but not on any other language (vocabulary, receptive grammar, listening to paragraphs) or literacy (single-word reading, fluency, or spelling) measures ($p > .05$).

In the first year after compulsory education, when the students were ~17 years old, 80% continued in full-time education: 37 were attending colleges of further education, similar to community colleges in the United States, which provide both academic and vocational courses; seven were attending specialist colleges for students with speech and language difficulties; and seven continued to attend school. In addition, five were employed, five attended secondary training programs, one was unemployed, and there was no information available on the remaining three.

In order to examine possible effects of attrition, independent-samples t tests were conducted for students for whom data were available at all time points compared with those who had missing data at 10, 12, or 16 years. There were no significant differences ($p > .05$) for any measure of language or nonverbal ability at 8 years.

Measures

Measures were selected to tap the students' oral language skills, nonverbal ability, literacy, behavior, and self-perceptions of competence. All were completed by the students except for the measure of behavior, which was completed by the students' teacher. All measures were age and culturally

appropriate, were standardized with reliability (typically internal consistency) and concurrent validity data, and were commonly used for the identification and assessment of children with SLI in the United Kingdom.

Nonverbal ability. The Matrices subtest of the BAS II presents children with a set of patterns where one pattern is incomplete. There is a choice of six responses, and children are required to point to the missing piece. Internal consistency of this measure is .85. Concurrent validity with the performance scale of the Wechsler Intelligence Scale for Children is .47 (Wechsler, 1991a).

Expressive narrative. *The Bus Story* requires the assessor to tell the child a short story about a naughty bus. The narrative is supported by pictures. The child is asked to retell the story as accurately as possible using the pictures as cues. A score for information reported is computed. Internal consistency of the measure is .70. Concurrent validity for both the British and American versions of the test is .98.

Receptive vocabulary. In the BPVS II, children are shown four line drawings and are asked to point to the one that best illustrates a word spoken by the assessor. Internal consistency of the measure is .89. Concurrent validity with the Expressive One-Word Picture Vocabulary Test—Revised Edition (Gardner, 1990) is .72.

Grammar. In the TROG-2, children are shown four pictures, and the assessor reads a sentence. The child selects a picture that matches the sentence structure. Internal consistency of the measure is .88. Concurrent validity with the CELF-R^{UK} is .53.

The CELF-R^{UK} Listening to Paragraphs subtest requires the child to attend to a short paragraph and answer specific questions related to the content. Internal consistency of the measure is .74. Concurrent validity with other receptive scales is .30–.43. In the CELF-R^{UK} Recalling Sentences subtest, children are asked to imitate orally presented sentences. Internal consistency of the measure is .82. Concurrent validity with other expressive scales is .43–.49. A language composite score was created from the two CELF subtests for the analysis.

Reading decoding. The Neale Analysis of Reading Ability—Revised (NARA-R; Neale, 1997) was administered. Accuracy of decoding is assessed by the child reading up to six narrative passages of increasing difficulty (Accuracy scale). Internal consistency ranges from .81 to .88. Concurrent validity with the Schonell Graded Word Reading Test (Schonell, 1942) is .95. The New Macmillan Reading Analysis (NMRA; Vincent & de la Mare, 1985) has a similar format but is designed for children ages 7 to 9 years. Its internal consistency for decoding (NMRA Accuracy) is .77–.86.

Reading comprehension. The NARA-R and NMRA also measure the child's understanding of short written passages of text (Comprehension scale). With these tests, the child reads a passage out loud or silently and then answers comprehension questions posed orally by the examiner. Internal consistency is .93–.95 for the NARA-R and .58–.77 for the NMRA.

Spelling. The BAS II Spelling scale provides a number of phonetically regular and irregular words to assess the child's ability to produce correct spellings. Each item is first presented in isolation, then within the context of a sentence, and then again in isolation. The child has to respond by writing the word. Internal consistency is .91. Concurrent validity with the Wechsler Objective Reading Dimensions Spelling (Wechsler, 1991b) subtest is .63.

Behavior. The SDQ includes five scales: Emotional Symptoms, Conduct Problems, Hyperactivity, Peer Problems, and Prosocial. Each scale consists of five items that are marked *not true*, *somewhat true*, or *certainly true* (range 0–10). The scores of the first four scales can be summed to produce a total difficulties score (range 0–40). The Prosocial scale provides a separate score for positive behavior. Goodman (1997) presented evidence for the concurrent and predictive validity of the SDQ as well as standardization data for the cutoffs for each scale and the total difficulties score to indicate children as likely psychiatric “cases,” with 80% *normal*, 10% *borderline*, and 10% *abnormal*, the latter indicating behavior within the clinical range, in each instance. Subsequently, age-related prevalence rates have been produced (<http://www.sdqinfo.com>). The SDQ has also been shown to have satisfactory reliability, factor structure, and prediction of *Diagnostic and Statistical Manual of Psychiatric Disorders, Fourth Edition* (American Psychiatric Association, 1996) diagnoses (Goodman, 2001).

Self-concept. Children's self-perceptions of their competencies were assessed using four age-related scales that were developed by Harter and colleagues. The number of domains increases with age and the increasing differentiation of self-perceptions of competence: The Pictorial Scale of Perceived Competence and Social Acceptance for Young Children, consisting of four scales (PSPCSA; Harter & Pike, 1984); the Self-Perception Profile of Children, consisting of six scales (SPPC; Harter, 1985); the Self-Perception Profile of Adolescents, consisting of nine scales (SPPA; Harter, 1988); and the Self-Perception Profile of College Students, consisting of 13 scales (SPPCS; Neemann & Harter, 1986). This paper reports two scales that measure comparable dimensions over the full period of the study, Scholastic Competence and Social Acceptance (titled Cognitive Competence and Peer Acceptance respectively, in the PSPCSA). In addition, global self-worth was measured by all scales except the PSPCSA. Minor changes were made to the language of some items on the scales to improve intelligibility for English students and to ensure that the measures were appropriate for participants with language difficulties.

Procedure

The students were assessed individually at each time point on the appropriate measures by trained researchers. Expressive narrative was assessed by *The Bus Story* at age 8, receptive vocabulary by the BPVS II at 8 and 10 years, and

grammar by the TROG-2 at 8 and 10 years and by the CELF-R^{UK} at 10 years. Literacy was assessed as follows: Reading accuracy and comprehension were assessed by the NMRA at age 8 and by the NARA-R at age 10, and spelling was assessed by the BAS II Spelling scale at 8 and 10 years. Nonverbal ability was measured by the BAS II Matrices subtest at ages 8 and 10. BESD were assessed by the SDQ at ages 8, 10, 12, and 16. Self-concept was measured by the PSPCSA at age 8, the SPPC at ages 10 and 12, the SPPA at age 16, and the SPPCS at age 17.

Until 16 years, the assessments took place in the school over two sessions of ~1 hr each. At 17 years, the sessions occurred in college or occasionally at the young person's home according to their situation and preference.

The SDQ was completed by the student's class tutor at ages 8 and 10; after transition to secondary school, it was completed by the school's special educational needs coordinator (SENCO) at ages 12 and 16 years. The SENCO has specific responsibility for students with special educational needs, especially those with statements or who are receiving support at School Action Plus, as was the case with all of our sample. Consequently, the SENCO was judged to be the most knowledgeable about the participants in the context of a large secondary school with many teachers teaching the student.

The study received approval from the University of Warwick's Humanities and Social Sciences Research Ethics Committee. Informed consent from the parents and from the students was received at each phase of the study.

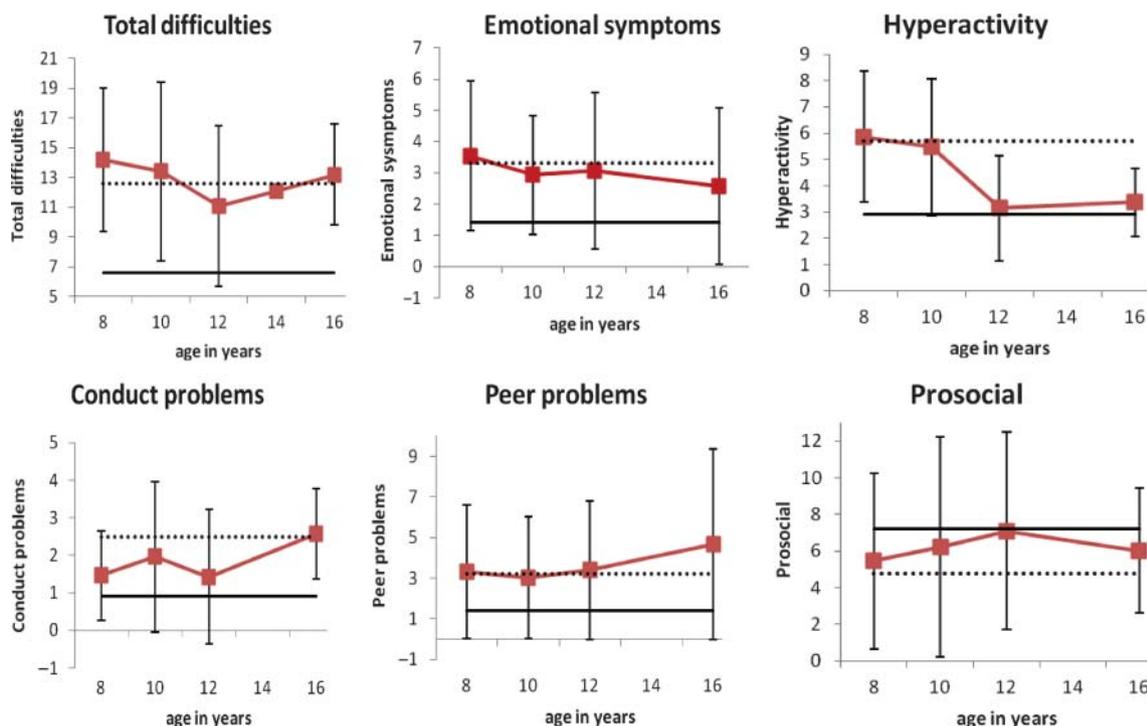
RESULTS

Self-concept was analyzed for male and female students separately as the norms are reported by gender. In all other cases, as there were no gender differences on any variable (independent-samples *t* tests $p > .05$), the analyses were conducted on the total sample.

Prevalence of Behavioral Difficulties Over Time

Figure 1 presents the means (*SDs*) for SDQ total difficulties, the four SDQ problem scales (Emotional Symptoms, Hyperactivity, Conduct Problems, and Peer Problems), and the Prosocial scale at ages 8, 10, 12, and 16 years. Each graph also shows the mean score (solid line) and 1*SD* above the mean (dotted line) from the UK norms for comparison (<http://www.sdqinfo.com>). However, for the Prosocial scale,

Figure 1. Trajectories of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1994) total difficulties score and scales from 8 to 16 years (means and standard deviations).



Note. In each case, the solid and dotted lines represent the mean and 1 *SD* above the mean, respectively, from the normative sample.

which has reverse scoring, the dotted line represents 1 *SD* below the mean.

Comparison between the normative sample of the SDQ measure and our study participants indicates that overall, the teachers rated the students with SLI as presenting with higher mean levels of difficulties across all domains, although the differences in terms of the *SD* units (derived from the normative sample means for the relevant scale) varied between domains and over time (Figure 1). The highest level of discrepancy was for Peer Problems, where differences in mean scores between the sample and the normative sample increased from 0.91 *SD* units at 10 years to 1.82 *SD* units higher at 16 years. For other domains, discrepancies from the norm ranged as follows: Emotional Symptoms decreased from 1.13 (8 years) to 0.62 *SD* units higher at 16 years, Hyperactivity decreased substantially from 1.06 (8 years) to just 0.16 *SD* units higher at 16 years, Conduct Problems increased from 0.35 (8 years) to 1.04 *SD* units higher at 16 years, and total difficulties showed a reduction from 1.26 *SD* units higher at 8 years to 0.74 at 12 years before increasing to 1.10 *SD* units at 16 years. Prosocial skills also improved, from 0.73 (8 years) to just 0.04 *SD* units *lower* at 12 years (as this scale has reverse scoring), before worsening to 0.48 *SD* units *below* the norm at 16 years.

An alternative scoring system for the SDQ reports results with cutoffs determined to produce three categories according to level of difficulties, specified in the normative sample estimates as *normal* (80%), *borderline* (10%), and *abnormal* (10%). We used the norms from an English national sample (Meltzer, Gatward, Goodman, & Ford, 2000). We use the term “within the clinical range” instead of “abnormal.”

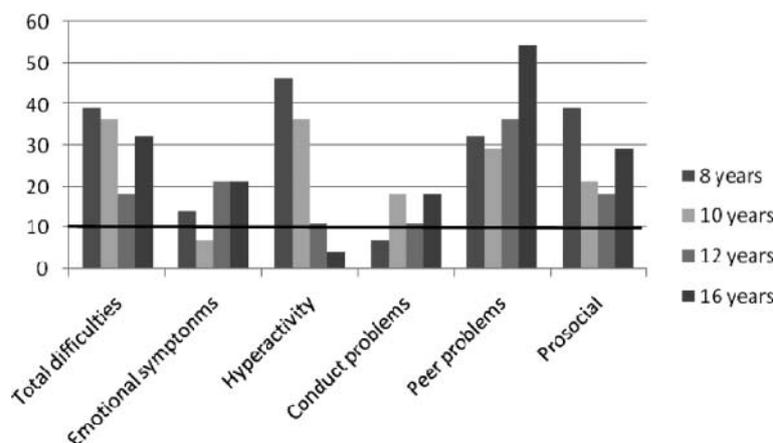
The percentages of the SLI sample that were rated within the clinical range over the four time points were generally comparable to the pattern of mean scores (Figure 2). The

proportion of the sample with clinically significant scores on the Peer Problems scale increased from ~one third over ages 8 to 12 years (32% at age 8 to 36% at age 12) to 54% at 16 years, more than five times the level of the normative sample. By contrast, the percentage with clinically significant Hyperactivity scores reduced over time from 46% (age 8) to 4% at age 16. The pattern for Conduct Problems was more varied, with peaks at 10 and 16 years (18% in each case). The percentage with Emotional Symptoms initially decreased from 14% (age 8) to 7% (age 10) before increasing to 21% (ages 12 and 16 years). The percentage with Prosocial behavior in the clinical range reduced from 39% (age 8) to 18% (age 12) before increasing to 29% (age 16). Finally, the percentage with total difficulties in the clinical range decreased from 39% (age 8) and 36% (age 10) to 18% (age 12), before increasing to 32% at age 16.

ANOVAs indicated a significant reduction over time for SDQ total difficulties, $F(3, 81) = 2.75, p = .048, \eta_p^2 = .09$. A decrease from 8 to 12 years was followed by an increase at 16 years (Figure 1), but Bonferroni post hoc tests revealed that only the reduction between 8 and 12 years was significant ($p = .008$). Hyperactivity also showed a significant reduction over time, $F(3, 81) = 13.98, p < .001, \eta_p^2 = .34$, with a reduction between 8 and 12 years and then levelling. Post hoc tests revealed that there were significant reductions between levels of Hyperactivity at 8 and 12 years ($p < .001$), 8 and 16 years ($p = .002$), and also between 10 and 12 years ($p = .001$) and between 10 and 16 years ($p = .002$).

Conduct Problems also showed a main effect of time, $F(3, 81) = 5.06, p = .003, \eta_p^2 = .16$, but in this case, characterized by a generally flat trend from 8 to 12 years followed by an increase to 16 years, Post hoc tests revealed significant differences between age 16 and both age 8 ($p = .002$) and age 12 ($p = .015$). Peer Problems showed a similar pattern: a main

Figure 2. Percentage of children scoring in the clinical range on the SDQ total difficulties score and scales from 8 to 16 years.



Note. In each case, the horizontal line represents the clinical cutoff from the normative sample.

effect of time, $F(3, 81) = 4.43, p = .006, \eta_p^2 = .14$, with stability between 8 and 12 years followed by an increase at 16 years. Only the increase between 10 and 16 years was significant ($p = .006$), although that between 8 and 16 years approached significance ($p = .059$).

Difficulties with prosocial behavior also showed a main effect of time, $F(3, 81) = 3.12, p = .031, \eta_p^2 = .10$. This was characterized by a significant increase in difficulties from age 8 to 12 ($p = .021$) and then a reduction, although this was a nonsignificant trend. There was a nonsignificant reduction over time for Emotional Symptoms, $F(3, 81) = 0.99, p = .403$.

Changes in Self-Perception of Competencies Over Time

Table 1 presents the means and standard deviations of the three scales from the four age-related Harter measures that are common across all ages (Scholastic Competence and Social Acceptance) or ages 10 to 17 (Global Self-Worth). The mean self-concept scores of the participants were above the mean of 2.5 of the 1–4 scale in all but one case: Scholastic Competence at 16 years indicated generally positive self-concepts for the participants. Comparison with the norms for male and female students separately indicated that the male students had significantly lower levels of self-perception of their scholastic competence at ages 10 ($p = .003$), 12 ($p = .029$), and 16 years ($p = .001$), but this applied to female students only at 16 years ($p < .001$). There were no significant differences from the norm for perception of social acceptance for either male or female students at any age, and perception of global self-worth differed significantly only for female students at 16 years, when it was lower than the norm ($p < .001$). There were no significant differences on any scale for male or female students at 8 and 17 years.

There was a significant difference between the students' ratings of their perceptions of scholastic competence across time: $F(4, 148) = 15.38, p < .001, \eta_p^2 = .29$. Post hoc tests indicated that this was mainly a result of the level when the students were 8 years, which was significantly higher than at all other ages: 10, 12, and 16 years ($p < .001$ in each case)

and 17 years ($p = .013$). There was also a significant increase in perception of scholastic competence between 16 and 17 years ($p = .019$).

Perceptions of social acceptance also showed a significant difference over time: $F(4, 148) = 2.67, p = .035, \eta_p^2 = .07$. A similar pattern to that of scholastic competence was evident for social acceptance, with higher levels of perception at the youngest and oldest points, 8 and 17 years, and lower levels at 10, 12, and 16 years. However, post hoc tests revealed no significant differences between ages. No age trend was found for global self-worth from 10 to 17 years: $F(3, 117) = 1.94, p = .127$.

Predictions of Behavior and Self-Concept by Language and Academic Achievement

In this section, we examine the relationship of language and literacy at both 8 and 10 years with later BESD at 16 years and with self-concept (16, 17 years). We again use scholastic competence, social acceptance, and global self-worth measures of self-concept and also the SDQ total difficulties score as a measure of behavior.

Because of the number of comparisons made in the analyses of language, literacy, and nonverbal ability, a Bonferroni correction ($p = .004$) was applied to determine statistical significance. The language measures at both 8 and 10 years showed low and nonsignificant correlations with both SDQ total score at 16 years and the three self-concept measures at both 16 and 17 years (Table 2). Furthermore, all correlations between SDQ scales, and between SDQ scales and self-concept measures, were nonsignificant ($p > .05$).

A further analysis compared the language and literacy measures at 8 and 10 years for those with SDQ total difficulties at 16 years rated within the clinical range compared with those rated normal or borderline. Independent-samples *t* tests were all nonsignificant ($p > .05$).

In contrast, both reading accuracy (NARA–R Accuracy) and spelling (BAS II Spelling) at 10 years correlated with scholastic self-concept at 16 years (NARA–R Accuracy, $r = .35$,

Table 1. Children's ratings of self-concepts from 8 to 17 years of age.

| Measure | 8 years ^a (n = 66) | | 10 years ^b (n = 65) | | 12 years ^b (n = 64) | | 16 years ^c (n = 55) | | 17 years ^d (n = 54) | |
|-----------------------|----------------------------------|-----|-----------------------------------|-----|-----------------------------------|-----|-----------------------------------|-----|-----------------------------------|-----|
| | M | SD | M | SD | M | SD | M | SD | M | SD |
| Scholastic Competence | 3.35 | .67 | 2.61 | .77 | 2.57 | .73 | 2.35 | .58 | 2.79 | .66 |
| Social Acceptance | 3.21 | .73 | 2.86 | .76 | 2.79 | .63 | 2.90 | .66 | 3.07 | .61 |
| Global Self-Worth | – | – | 3.12 | .67 | 3.11 | .54 | 2.88 | .61 | 3.22 | .60 |

Note. Measurements at the indicated ages were made using the following instruments: ^aPictorial Scale of Perceived Competence and Social Acceptance for Young Children (Harter & Pike, 1984), ^bSelf-Perception Profile for Children (Harter, 1985), ^cSelf-Perception Profile for Adolescents (Harter, 1988), and ^dSelf-Perception Profile for College Students (Neemann & Harter, 1986).

Table 2. Correlation of language, literacy, and nonverbal ability at 8 and 10 years with self-concept at 16 and 17 years and behavior at 16 years.

| Measure at 8 and 10 years | 16 years (n = 52) | | | | 17 years (n = 55) | | |
|-------------------------------------|-------------------|-----------------|------------------|------------------|-------------------|-----------------|------------------|
| | SC ^a | SA ^a | GSW ^a | SDQ ^b | SC ^c | SA ^c | GSW ^c |
| Language | | | | | | | |
| TROG-2 (8) | -.06 | .12 | -.02 | .14 | -.24 | .07 | -.06 |
| TROG-2 (10) | .05 | .00 | -.14 | .26 | -.10 | .01 | -.11 |
| BPVS II (8) | -.16 | -.09 | -.05 | .04 | -.29* | .12 | .00 |
| BPVS II (10) | -.06 | -.01 | -.19 | .05 | -.20 | -.04 | -.26 |
| <i>Bus Story</i> information (8) | -.27 | .22 | -.13 | .02 | -.06 | -.01 | .09 |
| CELF-R ^{UK} composite (10) | -.10 | -.01 | -.12 | .07 | -.24 | .14 | -.02 |
| Literacy | | | | | | | |
| NMRA Accuracy (8) | .25 | -.07 | -.11 | .11 | -.05 | -.17 | -.09 |
| NMRA (8) Comprehension | .03 | -.12 | -.21 | .21 | -.12 | -.12 | -.11 |
| NARA-R Accuracy (10) | .37** | -.04 | -.17 | .06 | -.12 | -.10 | -.11 |
| NARA-R (10) Comprehension | .23 | -.10 | -.16 | .03 | -.07 | -.06 | -.10 |
| BAS II Spelling (8) | .17 | .09 | .00 | -.07 | -.13 | -.12 | -.02 |
| BAS II Spelling (10) | .34* | -.10 | -.17 | .12 | .02 | -.11 | -.04 |
| Nonverbal ability | | | | | | | |
| BAS II Matrices (8) | .04 | .17 | .02 | -.05 | -.18 | .11 | .06 |
| BAS II Matrices (10) | .00 | .23 | -.20 | -.11 | -.22 | -.23 | -.12 |

Note. SC = Scholastic Competence, SA = Social Acceptance, GSW = Global Self-Worth, SDQ = total difficulties score on the Strengths and Difficulties Questionnaire (Goodman, 1994), TROG-2 = Test for Reception of Grammar—Second Edition (Bishop, 1989), BPVS II = British Picture Vocabulary Scale, Second Edition (Dunn, Dunn, Whetton, & Burley, 1997); *Bus Story* = *The Bus Story* (Renfrew, 1997), CELF-R^{UK} = Clinical Evaluation of Language Fundamentals—Revised UK Edition (Peers, Lloyd, & Foster, 1999); NMRA = New Macmillan Reading Analysis (Vincent & de la Mare, 1985); NARA-R = Neale Analysis of Reading Ability—Revised (Neale, 1997); BAS II = British Ability Scales, Second Edition (Elliott, Smith, & McCulloch, 1997).

^aScales from the Self-Perception Profile for Adolescents (Harter, 1988); ^bSDQ = Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) total difficulties score; ^cScales from the Self-Perception Profile for College Students (Neemann & Harter, 1986).

* $p < .05$. ** $p < .01$.

$p = .013$; BAS II spelling, $r = .34$, $p = .007$), but neither correlation was significant when the Bonferroni correction was applied, although that for spelling approached significance. There was no significant correlation between nonverbal ability and any measure of self-concept or behavior at 16 or 17 years.

Table 3 shows that the students' concept of scholastic competence at 16 years was positively correlated with their concept of scholastic competence at both 8 ($r = .38$, $p = .007$) and 10 years ($r = .30$, $p = .039$) and scholastic competence self-concept at 17 years correlated with the measure at 10 years ($r = .32$, $p = .02$). However, only the correlation between the measures of scholastic competence at 8 and 16 years reached significance after applying the Bonferroni correction ($p = .007$). Social acceptance measures at 8 and 10 years were not associated with social acceptance at either 16 years or 17 years after using the Bonferroni correction.

Teachers' ratings of the students' behavioral difficulties at 10 years were positively correlated with the students' self-concept of scholastic competence at 16 years ($r = .34$, $p = .039$) but not at 17 years, whereas negative correlations were found at the later age with measures of both social

acceptance ($r = .38$, $p = .007$) and global self-worth ($r = -.32$, $p = .027$). But again, none was significant.

Finally, correlations between the SDQ total difficulties score at both 8 ($r = .17$; *ns*) and 10 years ($r = .13$, *ns*) with that at 16 years were small and nonsignificant.

DISCUSSION

The current study first sought to explore the nature of BESD and self-concept in a sample of young people with a history of SLI over the period from 8 to 16 and 17 years. Previous research had clearly demonstrated that children with SLI are at higher risk of BESD, but the accumulating evidence indicated the necessity to distinguish between different types of BESD. In addition, theoretical developments in self-concept research indicated that single construct measures used in prior research were of limited usefulness (Marsh & Martin, 2011) because self-concept becomes more differentiated as children mature. Previous research has explored continuities at an earlier stage of development, for example, Benasich et al. (1993) for 4 to 8 years, Redmond and Rice (2002) for kindergarten to 8 years, and Lindsay

Table 3. Correlation of self-concept and behavior at 8 and 10 years compared with 16 and 17 years.

| Measure at 8, 10, and 16 years | 16 years | | | | 17 years | | |
|-----------------------------------|---------------------------------------|-----------------------------------|-----------------------------------|--|---------------------------------------|-----------------------------------|-----------------------------------|
| | ^a Scholastic Competence | ^a Social Acceptance | ^a Global Self-Worth | ^b SDQ total difficulties | ^c Scholastic Competence | ^c Social Acceptance | ^c Global Self-Worth |
| Self-concept | | | | | | | |
| Scholastic Competence (8) | .38** | .11 | .02 | -.09 | .10 | -.04 | .03 |
| Scholastic Competence (10) | .30 | .02 | .07 | -.13 | .33* | -.03 | -.05 |
| Social Acceptance (8) | .21 | .21 | -.06 | -.42** | .33* | .24 | .18 |
| Social Acceptance (10) | .25 | .35* | .26 | -.02 | .27 | .11 | .22 |
| Global Self-Worth (10) | -.01 | .16 | .03 | -.04 | .08 | .05 | .04 |
| Behavior | | | | | | | |
| SDQ total difficulties (8) | .06 | -.19 | .09 | -.17 | .15 | .01 | -.02 |
| SDQ total difficulties (10) | .34* | -.04 | .05 | -.13 | -.10 | -.38** | -.32* |
| SDQ total difficulties (16) | .14 | -.41* | -.35* | — | .11 | -.08 | .21 |

^aScales from the SPAA; ^bSDQ = total difficulties score; ^cScales from the SPPCS.

* $p < .05$. ** $p < .01$.

et al. (2007) for 8 to 12 years. The current study is, to the best of our knowledge, the first to report on continuities of both behavior and self-concept from 8 to 17 years of age.

The absolute levels of difficulties were generally greater than the norm for both the general BESD measure (SDQ total difficulties) and also the five domains at each of the four time points; however, patterns of both mean level of difficulty and percentage of students with clinically significant difficulties varied between the measures. The greatest discrepancy was for Peer Problems, where the SLI sample mean was 1.82 *SD* units higher than the norm at 16 years. Furthermore, the level of clinically significant difficulties was relatively stable at about one third between 8 and 12 years but increased significantly at 16 years, when 54% of the group with SLI had substantial peer problems, representing a five times higher prevalence than the norm. The mean level of Conduct Problems also increased significantly over time, but with a reduction at 12 years after transfer to secondary school, possibly reflecting a reaction to the changed context and school ethos. By 16 years, the proportion with clinically significant conduct problems had increased to 18% (from 7% at 8 years), which is almost double the norm.

Mean level of Hyperactivity, by contrast, reduced in a linear fashion between 8 and 12 years, when it plateaued to 16 years at a level close to the norm: The percentage of students with clinically significant difficulties decreased from 46% at 8 years to 4% at 16 years. Mean level of Emotional Symptoms decreased over the period from 8 to 16 years, but this masked an initial drop in the percentage of students with clinically significant difficulties, from 14% at 8 years to 7% at 10 years, followed by an increase to 21% at both 12 and 16 years, which is twice the level of the norm. Hence, there were variations between BESD domains with respect to both the size of deviation from the norm and the pattern over time: Some types of difficulty increased

over time and others decreased. There were also examples of both stabilization and changes in trend. These findings indicate the importance of distinguishing between different BESD domains.

The age trends in our study are similar to those of St. Clair et al. (2011) for emotional symptoms and hyperactivity. However, St. Clair et al. reported conduct problems continuing to decrease from 11 to 16 years of age, when they were at the level of the norm, whereas in our study, there was a significant increase at 16 years to a level about twice that of the norm. Also, peer problems levelled off between 11 and 16 years in the St. Clair et al. study, whereas in our study, peer problems increased significantly between 10 and 16 years, at which time 54% had clinically significant difficulties. These differences in results may reflect sample differences as the mean levels of BESD were generally higher in the present sample; for example, the SDQ total difficulties score at 8 years was 11.05 (St. Clair et al., 2011) compared with 14.18 in the current study. Furthermore, it is important to note that St. Clair et al. used a broader definition of *impaired* for the SDQ, combining the abnormal and borderline scores, for which the normative sample estimate is 20%, compared with our study, which used the abnormal scores to indicate clinically significant difficulties (normative estimate 10%; Goodman, 1997; <http://www.sdqinfo.com>).

In the current study, the increases over the 12- to 16-year-old period in conduct problems and peer problems were not associated with language levels at ages 8 or 10 years. Furthermore, levels of conduct problems and peer problems were not correlated, indicating that these were independent characteristics. This phase of development involves a number of changes for all young people, including moving schools, in the United Kingdom, where different patterns of teaching and learning take place; establishing different

peer group relationships; and increasing independence. Any or all of these factors may contribute to increase the challenges for pupils with language and communication difficulties.

There is now substantial evidence that academic self-concept has both direct and indirect effects on subsequent achievement (Marsh & Martin, 2011) and that academic self-concept both affects and is affected by academic achievement (Valentine, DuBois, & Cooper, 2004). For example, Marsh (1990) demonstrated that prior academic self-concept had an effect on school grades over the period from 10th to 12th grade (15 to 17 years), and Lackaye and Margalit (2006) found that self-efficacy predicted both investment of effort and grades achieved by students with learning disabilities. In addition, academic self-concept has stronger associations with later achievement than do global measures of self-esteem (Marsh & Martin, 2011).

In our study, perceptions of scholastic competence (academic self-concept) were lower than the norm at 16 years, replicating findings by Tomblin (2008). However, once the students had left school, typically moving to further education (community) colleges, their academic self-concept increased and there was a nonsignificant difference from the norm. This suggests that the students' academic difficulties over the period of compulsory (school) education adversely affected their academic self-concept, but that the new curricula and ethos of the colleges, and the different opportunities provided post 16 years, had a positive effect on their academic self-concept (Lindsay, Dockrell, & Palikara, 2010).

The students' perceptions of social acceptance also improved post 16 years, but this was nonsignificant. Nevertheless, it is interesting to compare this with the increase in peer problems identified at 16 years, during their final year of compulsory schooling. Again, this suggests that the new opportunities were having a positive effect, supported by the findings for perceptions of global self-worth. This was below the norm at 16, replicating the studies by Tomblin (2008) and Wadman et al. (2008), but increased significantly at 17 years.

Previous research has shown that language is related to concurrent social skills in young children with LI (Horowitz, Jansson, Ljungberg, & Hedenbro, 2006). Marton, Abramoff, and Rosenzweig (2005) argued that their study of 7- to 10-year-olds supports a causal relationship between impaired communication and social competence, although not academic competence. At an earlier stage in our research program, teacher-rated expressive language at 8 years was found to be a predictor of behavioral difficulties at both 10 and 12 years, and receptive language at 10 years predicted behavior at 12.

Studies of adolescents have found a more complex relationship. Wadman et al. (2008) reported that concurrent language did not predict a global measure of self-esteem in 16-year-olds with SLI once shyness was included in the regression. Botting and Conti-Ramsden (2008) found generally nonsignificant relationships between both concurrent

and earlier (7 years) language abilities and measures of social behavior (friendships and social activities) and general BESD (SDQ total difficulties) at 16 years. Nonsignificant concurrent correlations at 16 years were also found in a separate study from the current research program (Lindsay et al., 2010). The current study found that language measures at 8 and 10 years did not predict later behavior or self-concepts at 16 and 17 years.

The relationship between lower academic achievement and behavioral difficulties (Green et al., 2005) and academic self-concept (Marsh & Martin, 2011) is well established. With respect to children with LI, literacy has been found to be a mediator of behavior problems in 8-year-olds. Whereas reading disability was directly associated with behavioral disorder, the association with LI was subject to the mediation of reading disability (Tomblin et al., 2000). Hence, children with LI are at greater risk of behavioral difficulties because of their associated reading problems. Our sample had low literacy at 8 and 10 years, and this continued to age 16 (Dockrell et al., 2011). However, there was no significant predictive correlation in the present study between literacy skills at 8 or 10 years and either behavior or academic self-concept at age 16, although the latter approached significance for reading accuracy at 10 years. With respect to behavior and self-concept, therefore, it is likely that it is academic achievement rather than oral language ability that is the main factor linked to behavioral difficulties, at least with respect to conduct problems at this point in development. This may apply to a lesser extent to hyperactivity, for which a biological basis is now established, although different trajectories for subgroups of children with ADHD have been reported (Larsson, Dilshad, Lichtenstein, & Barker, 2011).

With respect to social relationships, difficulties with social cognition have been proposed as a factor for children with LI (Ford & Milosky, 2003). Botting and Conti-Ramsden (2008) provided some supporting correlational evidence in a study of 16-year-olds with SLI, although the social cognition measures became nonsignificant in the final regression models. Wadman et al. (2008) argued that shyness was a mediator of the effects of language difficulties on self-esteem as the indirect effect of language on self-esteem through shyness was stronger than the direct effect.

It is also important to consider the rater of BESD and the context: These may be confounded. In an earlier study with the current sample, Lindsay et al. (2007) found very different patterns of ratings for behavior by teachers and parents. Parents typically have firsthand experience of their child within the family or local neighborhood context. For teachers, as in the current study, knowledge of the student was essentially drawn from observations within the school, where young people with SLI have a continuing, long-term experience of struggling to achieve and operate within large peer groupings nested within a large organization. A further factor with respect to respondents is the

relative knowledge of the SENCO, who has an ongoing overview of all students with significant special educational needs, compared with that of individual teachers. In the English system, the form tutor will have a form group briefly at the start of the session but may never teach them; and subject specialists will only have experience of behavior in their small number of lessons.

The findings from studies examining the views of the young people themselves, following transition from school to further education (community college), provide support for the evidence in the present study (see also Lindsay et al., 2010) that improvements in academic self-concept follow this change in educational provision (Carroll & Dockrell, 2010; Palikara et al., 2009). An important factor revealed by these studies is agency, or having control over one's own actions and future. These studies also demonstrate the importance of family and friendship support and the potential positive impact of other adults in their lives. However, whereas the present study gathered students' own views regarding self-concepts, it did not include self-ratings of their BESD, which would provide additional information and also allow triangulation (Lindsay et al., 2007).

Conclusions and Implications

Children and adolescents with a history of SLI are at increased risk of behavioral difficulties, with prevalence rates of ~30%–40% for clinically significant difficulties reported for a general measure of BESD (SDQ total difficulties). Although these rates are high, the corollary is that the majority of students do not experience such difficulties. Furthermore, our study shows the importance of distinguishing between types of difficulty as these show different prevalence rates and have different trajectories between 8 and 16 years. For example, although the prevalence of clinically significant conduct problems was double the norm at 16 years, the main concern is with peer problems, where more than half were judged by their teachers to have significant difficulties. Children and adolescents may also exhibit different behaviors in different contexts, and the trajectories over time as rated by teachers and parents in those different settings may also vary. In addition, the use of different cutoff scores for measures of BESD such as the SDQ has implications for the interpretation of prevalence rates.

The current study provides further support for the importance of distinguishing between domains of behavioral difficulties and self-concept. General measures are too imprecise for both research and practice. The different domains examined here show different pathways over time. Furthermore, the extension to 16 years shows that trajectories evident in the period to 12 years of age (Lindsay et al., 2007) do not necessarily continue up to 16 years: Both peer and conduct problems increased over this period from previous relatively steady states. From a practical point of view, such variations provide important information.

Language difficulties per se appear to have an important relationship with behavioral difficulties when children are young but a relatively limited direct relationship with behaviors or self-concept as the children become older; concurrent correlations are not high, and predictive associations are generally low and nonsignificant. With respect to intervention, adults, including parents and family members and those involved in teaching, training, and work mentoring, have the potential to support these young people, enhancing their resilience to BESD by providing emotional support; developing achievement, whether academic or vocational skills; and providing a stronger basis for autonomy and agency.

With respect to practitioners, our study indicates that a significant number of adolescents with a history of language difficulties continue to experience problems in the area of social communication. For practitioners, this highlights the necessity to consider these issues and tailor the support to the pupils' presenting needs: Many will have difficulties with relationships with peers, and others will experience problems with conduct. It is important to remember that, in the current study, these peer and conduct problems were not associated, indicating the importance of interventions being personalized. Furthermore, practitioners will need to consider the pupils' educational contexts and the ways in which larger schools with academically focused curricula can differentiate the learning environment to support the pupils' socio-emotional development.

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