

## Review

# Ten questions about terminology for children with unexplained language problems

D. V. M. Bishop

Department of Experimental Psychology, University of Oxford, Oxford, UK

(Received November 2013; accepted March 2013)

### Abstract

*Background:* In domains other than language, there is fairly consistent diagnostic terminology to refer to children's developmental difficulties. For instance, the terms 'dyslexia', 'attention deficit hyperactivity disorder' and 'autistic spectrum disorder' are used for difficulties with reading, attention or social cognition, respectively. There is no agreed label, however, for children with unexplained language problems.

*Aims:* To consider whether we need labels for unexplained language problems in children, and if so, what terminology is appropriate.

*Main Contribution:* There are both advantages and disadvantages to labels, but they are important to ensure children receive services, and to increase our knowledge of the nature and causes of such problems. A survey of labels in current use found 132 different terms, 33 of which had 600 or more returns on Google Scholar between 1994 and 2013. Many of these labels were too general to be useful. Of the remainder, the term 'specific language impairment' was the most commonly used.

*Conclusions:* The current mayhem in diagnostic labels is unsustainable; it causes confusion and impedes research progress and access to appropriate services. We need to achieve consensus on diagnostic criteria and terminology. The DSM-5 term 'language disorder' is problematic because it identifies too wide a range of conditions on an internet search. One solution is to retain specific language impairment, with the understanding that 'specific' means idiopathic (i.e., of unknown origin) rather than implying there are no other problems beyond language. Other options are the terms 'primary language impairment', 'developmental language disorder' or 'language learning impairment'.

*Keywords:* diagnosis, DSM-5, labels, terminology, specific language impairment.

### What this paper adds?

This paper aims to open up discussion about the use of different labels that have been used to refer to children's unexplained language impairments. It notes the wide range of terminology that has been applied and the confusion that results, and links this to debates about the appropriate criteria that are used to identify children in need of intervention. A range of diagnostic terms are evaluated in terms of their advantages and disadvantages.

### Introduction

Consider the case of 8-year-old George. He was rather late to start talking, and he did not speak in sentences until he was 4 years old. In other regards he developed normally: he is a healthy child and a hearing check

found no problems. He attends mainstream school, but he struggles with reading, and has a weak vocabulary for his age. He does not always remember what his teacher says to him, and his confidence, never good, has been dented further by other boys teasing him for not understanding the punch line to a joke. George is having some

Address correspondence to: D. V. M. Bishop, Department of Experimental Psychology, University of Oxford, Tinbergen Building, South Parks Road, Oxford OX1 3UD, UK; e-mail: dorothy.bishop@psy.ox.ac.uk

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

extra help with his reading in a small group, but he hates being singled out and made to feel different from others. He is beginning to be reluctant to go to school, except on days when he has art lessons, which he loves. His parents, concerned to see him so miserable, have arranged a private assessment with a psychologist, who diagnoses specific language impairment (SLI) and dyslexia. She explains that George has a nonverbal IQ of 95, within normal limits, but his vocabulary and comprehension levels are lower, with scaled score equivalents of 80, and his reading ability is at a 6-year-old level. The parents look for information on the internet and learn that SLI is thought to be a strongly genetic disorder that impairs language development. When, however, they talk to the head teacher about the assessment, he is not impressed. He thinks that it is unhelpful to apply a diagnostic label to George. All children vary in their language abilities, he explains, and the best approach will be to continue to support George with extra help in the classroom. He offers to ask the speech and language therapist for her opinion, as she is good at working with teachers to find the best way to help children with speech, language and communication needs (SLCN). The head teacher explains that there have been growing concerns that too many children are being identified with special educational needs (SEN), which just creates stigma and low expectations.

This vignette illustrates a number of tensions that surround the identification and labelling of children whose language development is falling behind their peer group for no obvious reason. There is polarization between two extremes: those who treat identification of children's language problems as akin to medical diagnosis, and those who adopt a normative approach, which eschews diagnostic labels as invalid and inappropriate. Among those who use labels, there is no agreement as to what is appropriate. In reviewing background literature, I shall use the term 'specific language impairment' (SLI) when referring to studies that have used this term, but provisionally will otherwise talk of 'unexplained language problems'. The vexed issue of what terminology should be adopted will emerge in the course of this article.

### 1. Should we be concerned about children's language problems?

Should we just let children develop at their own pace rather than worrying about those who progress more slowly for no apparent reason? On this point, I suspect there will be agreement between most professionals, regardless of which discipline they come from. The evidence is stark: children whose language lags well behind their peer group are at increased risk of academic failure (Durkin *et al.* 2012, Johnson *et al.* 2010), behavioural

and psychiatric problems (Conti-Ramsden *et al.* 2013, Snowling *et al.* 2006), unemployment and economic disadvantage (Parsons *et al.* 2011), and social impairment (Clegg *et al.* 2005).

Age, however, is critical. Late-talking in toddlers is not necessarily predictive of future problems, provided language comprehension is adequate, there is no family history of language or literacy problems, and other aspects of development are proceeding on course (Lyytinen *et al.* 2005, Zambrana *et al.* 2014). Many late-talkers catch up with their peer group after a slow start, and do not have significant difficulties later on (Reilly *et al.* 2010). But for children whose language deficits persist into school age, the outlook is bleaker (Conti-Ramsden and Durkin 2008, Stothard *et al.* 1998, Tomblin *et al.* 2003), prompting concern about whether we can effectively intervene to prevent a downward spiral of negative consequences.

### 2. Should we abandon diagnostic labels?

In many educational contexts, there is resistance to giving children diagnostic labels. The approach is educational rather than medical, with the goal being to identify children who will benefit from help by identifying the specific kinds of need on an individual basis. The more generic term 'special educational needs' (SEN) is used to determine who gains access to special educational provision; this would encompass children with serious communication difficulties alongside those with other disabilities affecting education. 'Speech, language and communication needs' (SLCN) is used as a non-specific term, i.e., it covers a range of children including those with English as an additional language, stuttering, or speech/language problems due to hearing loss or physical causes, as well as those with unexplained language problems. Within the UK educational system, diagnostic labels are not widely adopted, and the Diagnostic and Statistical Manual (DSM-5) classification system of the American Psychiatric Association (2013) and International Classification of Diseases (ICD-10) of the World Health Organization (1992) are largely ignored.

For some, labelling is seen as irrelevant, whereas for others, it is explicitly rejected as having more negative than positive consequences. Some of the disadvantages of diagnostic labels are summarized in the first column of table 1, which draws heavily on arguments advanced by Lauchlan and Boyle (2007).

Avoidance of labels may seem an admirably pragmatic approach which avoids potential stigmatization. It also avoids the unfairness that can ensue if educational support is restricted to those who meet arbitrary cut-offs, such as the discrepancy criteria sometimes used to identify children with specific learning disabilities (Fletcher 1992). It does, however, have some serious limitations.

Table 1. Pros and cons of diagnostic labels

Negative consequences	Positive consequences
Focus on what is wrong with the child; may ignore aspects of environment; localize problem in the child	Provides an explanation and legitimacy
Parents take no responsibility	Removes blame from parents
Child feels failure inevitable, stops trying	Removes blame from child
Excuse for what is really consequence of bad teaching	Removes blame from teachers
Leads to stigmatization, social disadvantage and exclusion	Promotes understanding and awareness of particular difficulties; legal protection against discrimination; can give sense of belonging; support groups; allows for group action; can lead to emphasis on positive attributes
Resources denied to those who do not meet specific diagnostic criteria; cynical use of labels to get extra funds	Leads to access to resources; in some countries may not be able to access these without a diagnostic label
Focus on label rather than assessment of child's specific needs; tendency to stereotype; generalizations may obscure important differences	Recognize common patterns across children with similar difficulties
Child may do better with skilled teaching and not need/ benefit from other intervention	Child can receive targeted intervention
Same label used with different meanings leads to confusion	Facilitates communication among professionals
Undue reliance on unreliable criteria, especially IQ	Objective criteria from formal assessment identify problems that might otherwise get missed
Medicalization of non-medical disorders; social problems attributed to medical causes	Recognition of biological as well as social causes of difficulties
Planning in terms of numbers with difficulties, rather than making changes that benefit all children	Need to know how many children affected, for planning resources and documenting progress
Groups studied by researchers are artificial and findings may not generalize to most children	Researchers need to generalize across groups; labels allow for continuity across research

First, in avoiding medicalization of children's difficulties, we may swing too far in the other direction, denying any role of biological risk factors in causing problems. The net result can be a culture of blaming either the parents or the teachers when children fail to achieve. A more balanced approach recognizes that children vary in their biological as well as their social backgrounds, and educational approaches need to be optimal for each individual, without introducing notions of inadequacy or blame.

Second, without diagnostic categories, it becomes easy for educational and governmental agencies to minimize children's difficulties, especially if they are attributed to poor schooling. With no clear criteria for deciding who needs extra help, it is all too easy to remove support. Consider, for instance, a government report issued in 2010 that argued that there was massive over-identification of children with SEN (Office for Standards in Education, Children's Services and Skills 2010). The authors of this report took the view that a primary reason for children's educational failures was inadequate teaching, and that schools were using the terminology of SEN to disguise their limitations and imply that the reason for failure lay in the child rather than in poor teaching. If there are no agreed criteria of what constitutes a significant language problem, then it is impossible for anyone to provide evidence either for or against this statement—it is simply a matter of opinion as to who merits special help. If we had clear and objective criteria, we could then gather evidence to

determine which children actually benefit from support and services.

This leads us to the third limitation of the 'no labels' approach, namely that it hampers research. In order to find out more about the nature and causes of language problems, and to discover which interventions are effective, we need to study groups of children. We can only do that if we can agree who is to be in the group, and hence we need to agree on diagnostic criteria. To date, researchers have had notable successes in finding out about the linguistic difficulties, correlates, outcomes and causes of SLI, despite the fuzziness and heterogeneity of this diagnostic category. For example, we have been able to identify specific deficits that might help account for language difficulties (Conti-Ramsden *et al.* 2001), to evaluate efficacy of intervention (Washington *et al.* 2011), to give parents a prognosis (Whitehouse *et al.* 2009a), and to identify genetic risk factors (Bishop *et al.* 1995): Our knowledge is far from perfect, but it would be non-existent if we had not been able to identify groups for study. None of this would be possible using a global category such as SLCN, which may be workable for certain administrative purposes, but is too broad for research contexts. It is sometimes argued that in identifying children with SLI, we are assuming they are all the same. That is wrong; they will differ in various ways, but the point is that we can identify clusters of children who share some key characteristics. In clinical contexts, we need to beware of stereotyping and assuming all children are the same, but if we treat each child

as unique, we can never generalize and learn from our experiences.

Arguments about labelling are not confined to the field of language impairment, or even to neurodevelopmental disorders. In his critique of DSM-5, *Saving Normal*, Frances (2013) noted the societal significance of labels in psychiatry. He was particularly concerned about the expansion of diagnostic categories in DSM-5, whereby normal variations in behaviour were being treated as diseases, so that a very high proportion of the population would qualify for a diagnosis. Nevertheless, Frances was careful to stress that he was not opposed to diagnostic labels—quite the contrary. He noted that in situations where resources are limited—which is almost always—budgets are a zero-sum game: if you do not have a diagnosis, then nobody will pay for your treatment.

Overall, Frances's conclusions have broad applicability to the case of children's language problems. There is a necessity for diagnostic labels if we are to advance our understanding of why some children have language problems, and identify those who might benefit from intervention. However, there is considerable potential for unintended consequences from labelling, and we need to think carefully about what kind of labels we use and whether we can take steps to mitigate the negative impacts that can arise from their use.

### 3. Is a medical model appropriate for unexplained language problems in children?

Does use of diagnostic labels 'medicalize' children's difficulties inappropriately? After all, language difficulties are quite different from a condition such as Down syndrome, where there is a known aetiology (an extra copy of chromosome 21), leading to a distinctive cluster of physical and cognitive characteristics. Labels may give the impression that they offer explanations for children's difficulties, especially when they are medical-sounding, like 'dyslexia' or 'Asperger syndrome', but in fact these are behaviourally defined conditions, and the labels are really no more than shorthand descriptions of a cognitive profile. The drawback of medical labels is that they can lead to what Hyman (2010) has termed 'reification': the assumption that our labels are defining 'natural kinds'.

SLI is not a distinct syndrome. There is evidence for genetic variants that increase the risk of language impairment (Newbury *et al.* 2011), but individual genes typically have very small effects, and, importantly, the genetic variants associated with increased risk are common in the general population. Rare mutations that cause major language problems are the exception rather than the rule (Graham and Fisher 2013). SLI is best

conceptualized as a complex multifactorial disorder that is usually caused by the combined influence of many genetic and environmental risk factors of small effect (Bishop 2009). In sharp contrast to Down syndrome, there is usually no clear dividing line between normality and abnormality in its aetiology, and although SLI is influenced by genes, it is not possible to diagnose it using a genetic test.

The literature on brain correlates of SLI tells a similar story. Although striking abnormalities such as developmental cortical malformations are sometimes noted (De Vasconcelos Hage *et al.* 2006), more usually, where correlates of SLI are found on structural or functional imaging, they tend to be subtle and not always consistent from study to study (Leppänen *et al.* 2004). Overall, we are not in a position to diagnose SLI from brain scans. Of course, we cannot rule out the possibility that with new techniques and better data, we might achieve what many regard as the Holy Grail: a system for diagnosis of neurodevelopmental disorders based on biomarkers rather than behaviour. However, we are a long way from achieving that goal: Even where biomarkers are found, they are seldom specific to a particular condition (Leonard *et al.* 2008).

It might be thought that such evidence invalidates any attempt to apply a 'medical model' to children's language problems, but as Taylor and Rutter (2008) pointed out, a view of medicine as involving only categorical syndromes with single causes is unrealistic. Medical conditions such as hypertension, obesity and kidney disease are all diagnosed on the basis of measures that are above cut-off on a quantitative scale. This may identify a group of people who are heterogeneous: hypertension can arise for a host of different reasons, and may not have any one clearly defined cause; rather it results when there is a constellation of genetic and environmental risk factors. There will often be co-occurring problems: the obese individual is likely also to suffer from other physical and psychiatric problems. Nevertheless, we find it worthwhile identifying these conditions because, when a person falls on the extreme of a normal distribution, they are at risk of further problems and may be helped by specific interventions. Those interventions may include pharmacological agents, but may also involve lifestyle recommendations such as changes in diet and exercise. The analogy with children's language impairments should be evident: in applying a label such as SLI, we are not assuming that the child has a distinct medical syndrome, that all children so labelled are the same, that language is the only problem that is present, that the child is qualitatively different from others, or that non-medical interventions will be ineffective. We are, however, acknowledging that biological, as well as environmental, factors affect a child's language development.

#### 4. What are appropriate criteria for identifying children's language problems?

There is no simple answer to this question because the specific criteria that are optimal will vary with the purposes of diagnosis (Bishop 2004). In some contexts, we may give most weight to evidence of poor skill on a test of a specific component of language processing, such as grammar or verbal memory. In other situations, the key issue will be how well the child is functioning in everyday life, at home and at school. A key point is that the specific purpose of a labelling system will dictate which criteria are used. We will first consider what types of information are typically considered when evaluating a child's difficulties, and then discuss how these may be applied depending on the purpose of diagnosis.

##### *Information used in diagnosis*

The traditional approach to identifying SLI has involved three components of diagnostic criteria, which together are intended to select children whose language difficulties have no obvious cause:

##### *Evidence of significant language impairment*

Although this may seem simple enough, assessing and quantifying language raises numerous questions. For instance, should we measure language using standardized tests, and if so which ones? Tomblin *et al.* (1996), for instance, made a case for excluding phonological impairment (a linguistically based speech-sound disorder) or pragmatic impairment in their diagnostic system for SLI, focusing instead on vocabulary, grammar and narrative skills. It could, however, be argued that phonology or pragmatics are part of language that should be included in a definition of SLI. Another question is what cut-offs should be used? Traditionally, scores that are at least 1 or 1.5 SD below the population mean are regarded as evidence of impairment, but this is an arbitrary criterion.

We also have the thorny problem that language tests may not capture important aspects of everyday communication. Several studies have shown that children who are judged to have language difficulties by parents or professionals are not necessarily the same children who are selected by language tests (Law *et al.* 2011, Roy and Chiat 2013, Tomblin *et al.* 1997). If we rely on parents or teachers to identify which children need help, we need to be aware that factors such as social background, as well as the type of language difficulty, may determine whether problems are detected (Bishop and McDonald 2009, Tomblin *et al.* 1997). This is potentially problematic: we do not want to waste scarce resources on children who are not experiencing any day-to-day problems, but some children with hidden language

problems—especially those affecting comprehension—can get missed unless formal language testing is used. A key point here is that a language problem may not always look like a language problem: an underlying comprehension impairment can present as poor academic attainment, impaired social interaction, or behavioural difficulties (Cohen *et al.* 1998).

##### *'Cognitive referencing'*

'Cognitive referencing' is the practice of evaluating a child's language skills in relation to the level of nonverbal ability, rather than chronological age (Cole and Fey 1997). Implicit in this criterion is the notion that a child with a mismatch between language and nonverbal skills is different from one whose poor language is at a similar level to nonverbal ability. However, as discussed further below (Question 5), there is no good evidence that this is the case (Tomblin 2008). Accordingly, this criterion is now largely discredited, and the more usual approach is to require only that the child achieve some minimum level of nonverbal ability (though there is no consensus about which nonverbal test and which cut-off to use).

##### *Exclusionary criteria*

The use of exclusionary criteria seems simple enough: we wish to separate those children for whom there is a known cause of language problems, from those that are unexplained. In practice, however, this is not always easy.

*Genetic syndromes.* A child with a known genetic syndrome, such as Down syndrome, would not usually be categorized as a case of SLI, because there are usually widespread cognitive deficits extending beyond language—though language skills tend to be disproportionately worse than nonverbal ability (Laws and Bishop 2004). But what about Klinefelter syndrome (47, XXY karyotype)? Children with this chromosomal constitution often have a cognitive profile that is similar to that seen in SLI, with depressed verbal skills in the context of normal nonverbal ability (Bishop and Scerif 2011). Should they therefore be included as cases of SLI? The answer, as always, varies according to the purpose of diagnosis, as will be discussed further below.

*Hearing loss.* Another example that may be less simple than it appears is the case of the child with moderate to profound sensori-neural hearing loss. A permanent hearing loss of this level of severity will typically impair acquisition of oral language, and may lead to a pattern of language difficulties similar to that seen in normally hearing children with SLI (Bishop 1983). Nevertheless, there is still wide variation in the extent of language

problems. This was demonstrated in a study of children receiving cochlear implants, some of whom had language problems that were far more severe than was usually seen with that degree of hearing loss (Hawker *et al.* 2008). The authors suggested that they might have both hearing loss and risk factors for SLI. This interpretation was supported by a subsequent study showing evidence of increased language impairment in the normally-hearing siblings of cochlear implant users with disproportionate language impairment (Ramirez-Inscoe and Moore 2011). There are also hearing-impaired children who fail to master sign language, despite adequate opportunity to learn, who can be regarded as having a SLI for sign (Mason *et al.* 2010).

*Social deprivation.* Roy and Chiat (2013: 131–132) noted that SLI can be interpreted as ‘poor language performance that cannot be explained by limitations in a child’s language experience’, but just how realistic is it to identify cases where language problems are due to such limitations? My view is that, if we set aside cases of extreme neglect, it is not. While it is well-established that there is a positive association between social disadvantage and children’s language skills (Letts *et al.* 2013, Schoon *et al.* 2010), it is seldom possible to disentangle the causal paths behind this association. Social deprivation effects could arise because poor language input from parents leads directly to language difficulties in their children (Leffel and Suskind 2013, Pickstone *et al.* 2009), as shown in figure 1. However, twin studies suggest a different interpretation of the association, namely that parents and children share genetic risk factors for language impairment (Bishop 2006b). Factors such as low socioeconomic status and parental educational level are not the independent environmental factors that they are often assumed to be: they can be *consequences* of language impairment. This is amply illustrated by follow-up studies of language-impaired children. We know that when they grow up, children who have language problems have poorer educational and employment outcomes than those who do not (Johnson *et al.* 2010, Whitehouse *et al.* 2009b). As adults, they are therefore likely to have a lower educational level and lower socio-economic status than other people. Consistent with this, parents of children have, on average, poorer language and literacy skills than control parents (Barry *et al.* 2007, Law *et al.* 2009). We could thus have an association emerging between lower socioeconomic status and poor educational attainments in the parents and language difficulties in their children even if there were no causal route from parental language to child language, simply because children share 50% of genetic makeup with their parents. If a parent has heritable language impairment, his or her child will also have a higher

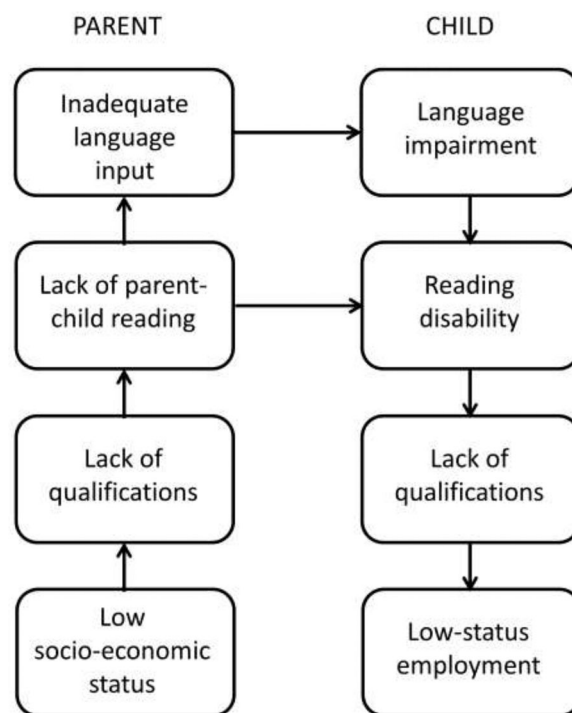


Figure 1. Causal model in which there is a direct link from communicative behaviour in the parents to language impairment in the child.

genetic risk for SLI. Figure 2 shows the causal chain suggested by this account, and contrasts it with the causal route that is typically assumed to account for the association (Figure 1). The shared causal factor responsible for the association is labelled here as ‘(genetic) risk factor’ because of the evidence that language impairment is often heritable, but there could also be environmental risk factors that operate in the same way.

Of course, the different causal mechanisms shown in figures 1 and 2 are not mutually exclusive, and it is likely that in many children there is a mix of biological and environmental causes involved. It would be unwise, however, to assume that a low educational level of parents is the sole and direct cause of language difficulties in children in cases where there is social disadvantage. A distinction between language problems with environmental versus biological causes would be more justifiable if we could demonstrate some differences in the nature and pattern of language problems for children from different social backgrounds, or if they responded differently to intervention. However, to date, I am unaware of any good evidence of that kind, and indeed, Roy and Chiat (2013) found that language-impaired children with high or low SES had similar language profiles.

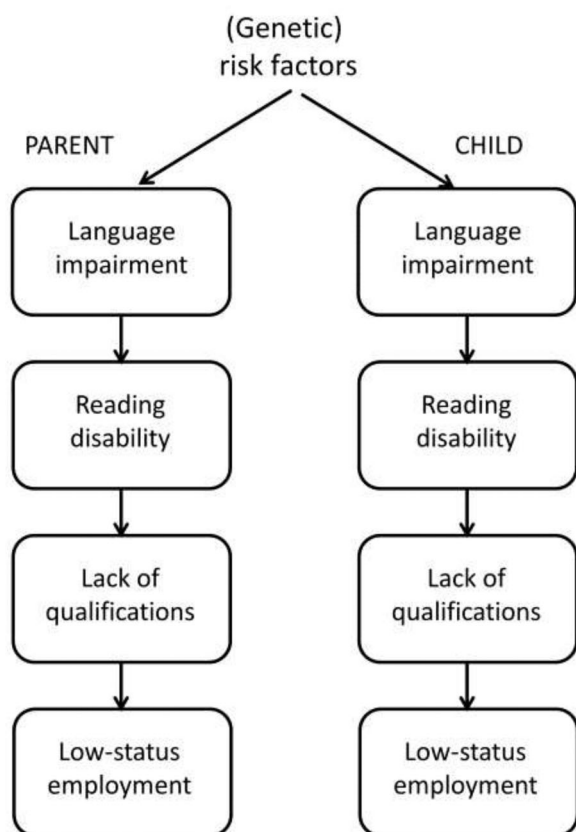


Figure 2. Causal model in which shared genes account for association between socioeconomic factors in the parents and language impairment in the child.

### *Different goals of diagnosis*

#### *Deciding who gets intervention*

In clinical settings, our principal goal is to identify children who will benefit from intervention. In this context, functional disability—evidence that the child's problems are interfering with everyday life or academic attainment—is likely to be at least as important as language test scores. However, as noted above, we need to be alert to the possibility that the child's difficulties may not be obvious, especially if they principally involve comprehension.

A further point relates to the discussion of exclusionary criteria, above. In this particular context, it is not clear that strict use of exclusionary criteria is justified, unless there is good evidence that the child has difficulties that would not respond to intervention. For instance, a child with Klinefelter syndrome may benefit from the same kind of intervention as a child without any additional diagnoses.

In the final analysis, we should be identifying those children who will benefit from targeted help. Unfortunately, there is a dearth of high-quality research on

effectiveness of intervention in this area, and this makes it difficult to devise well-motivated, evidence-based criteria.

### *Epidemiology and audit*

Knowing how many children are affected with a condition is important for planning resources, and for identifying causal factors that may vary across time and place. Lack of an agreed set of criteria for language impairment makes comparisons of prevalence rates problematic. A widely adopted solution is to take a statistical definition, selecting children whose scores on a language test are below some specified cut-off, e.g. the bottom 10%. However, such a criterion will select a constant, and arbitrary, percentage of children, and may relate only poorly to measures of functional impairment. Tomblin *et al.* (1997) noted that prevalence rates are not entirely predictable from statistical cut-offs used for diagnosis, because some of those falling below cut-off will meet exclusionary criteria. In addition, if we use tests that are normed for a representative population, we can consider how rates of impairment vary within substrata of that population. Nevertheless, use of statistical cut-offs creates the same problems that are seen when we try to set standards for determining levels of poverty, or prevalence of short stature. Income, height or language ability of the whole population could improve substantially, but a statistical cut-off will still select a specific proportion, such as the bottom 10%. We can only avoid this by identifying an absolute anchor point for impairment. For instance, Rice (2000) argued against purely statistical criteria, maintaining that some key differences between impaired and unimpaired children are not readily assessed on tests that generate normal distributions of scores. She suggested that, in English-speaking children, a failure to use aspects of grammatical morphology reliably by 5 years of age can be used as an indicator of language impairment—a view supported by a recent study by Redmond *et al.* (2011). The field would benefit from additional specification of absolute criteria for language skills that should be mastered at given ages to allow us to escape from the circularity inherent in statistical definitions. This is a challenging task, which may require different solutions for different languages.

### *Research on correlates of language problems*

If the goal is to find the underlying neurobiological or cognitive bases of language problems, then it may be more important to select a group of children who are homogeneous in terms of their language profile, rather than to focus on those with the most severe functional impairments. Furthermore, to isolate correlates of language deficits, we may want to focus on children who

do not have any additional problems. Such pure cases are, however, rare, and not likely to be representative of children who are seen in clinical contexts, where co-occurring problems are the rule rather than the exception (Dyck *et al.* 2011).

### *Research on genetics*

When doing genetic studies it might seem sensible to stick with published clinical criteria, such as those in ICD-10 (World Health Organization 1992) or DSM-5 (American Psychiatric Association 2013). For genetic studies it would certainly make sense to use exclusionary criteria to select out children with a known organic disorder that could lead to language problems, such as a chromosome anomaly, neurological disease or cochlear damage. But in other regards, a focus on ‘pure’ disorders has proved counterproductive. Relatives of children who meet stringent diagnostic criteria often have a ‘broad phenotype’, i.e. milder versions of the same problems which would not usually qualify for a diagnosis (Barry *et al.* 2007). In addition, they may have other disorders, such as autistic features, or low nonverbal ability (Bishop 1994). A focus on textbook cases can therefore be unhelpful in uncovering patterns of familiarity (Lewis *et al.* 2006). Instead, we may get clearer results if we can identify ‘endophenotypes’, i.e. measures that relate more closely to the underlying neurobiology of the condition (Gottesman and Gould 2003).

Another point emerging from genetic studies is that heritability of language impairment can vary depending on how it is defined. Bishop and Hayiou-Thomas (2008) found that alternative ways of identifying language disorder gave very different results in analysis of a twin sample. Genetic influence on impairment was marked only for children who attracted parental or professional concern. For children who had low scores on language tests but no clinical referral, there was little evidence of genetic influence. This suggests that overt problems with speech production and/or expressive language—which tend to be readily noticed and so lead to clinical referral—are more heritable than weak vocabulary, which does not attract concern unless accompanied by other difficulties.

### **5. Does it make sense to focus on ‘specific’ problems with language?**

It is often assumed that we should distinguish children whose language difficulties can be attributed to a known cause from those who have unexpected, unexplained language problems. The notion of a ‘specific’ impairment has been operationalized by requiring a discrepancy between impaired language function and normal nonver-

bal ability—something which was part of diagnostic criteria for specific learning disabilities for many years. The discrepancy criterion captured the notion that the impairment was unexpected and unexplained: whereas there was an assumption that language deficits were unsurprising in a child who had more global intellectual difficulties. However, this rationale has not been supported by evidence in either language or literacy problems. While it is true that verbal and nonverbal impairments often co-occur, it is not the case that nonverbal ability sets a limit on language development (Bishop 2004, Tomblin *et al.* 1996). Indeed, it is possible to find children whose performance on language tests is much better than their performance on nonverbal tests—the opposite pattern to what is seen in SLI. Furthermore, inclusion of discrepancy criteria in diagnostic formulations can be a barrier to progress in studies of aetiology. For instance, Bishop (1994) found that twin data were more interpretable if children were categorized according to language deficits, regardless of nonverbal ability, than if a conventional diagnosis of SLI were used. In short, where low nonverbal ability accompanies poor language skills, it should be seen as a correlate rather than an explanation.

One setting where use of nonverbal IQ criteria can sometimes be justified is in research contexts where the goal is to identify specific correlates of poor language learning. For instance, poor phonological awareness is a well-established correlate of poor reading, regardless of IQ level. If, however, this had been discovered in children whose poor reading was accompanied by low nonverbal IQ, it is unlikely its significance for reading would have been appreciated. It would instead have been regarded as part of general developmental delay. In the field of oral language impairments, demonstration of problems with procedural learning (Lum *et al.* 2013), grammatical morphology (Bishop 2013, Rice 2000) or nonword repetition (Graf Estes *et al.* 2007) are far more striking when seen in language-impaired children of normal nonverbal ability, than if demonstrated in those with more general learning difficulties.

### **6. Are language problems distinct from other neurodevelopmental disorders?**

In the past, research on different neurodevelopmental disorders proceeded largely independently, but there is growing awareness of considerable overlap between different conditions. First, it is evident that many children with SLI meet criteria for developmental dyslexia and vice versa (Bishop and Snowling 2004). The overlap was for many years not appreciated, because reading and oral language problems are usually dealt with by different professional groups: psychologists or educators



for reading problems, and speech–language therapists for language problems. As the evidence grew for close relationships between disorders of written and spoken language, people started to ask whether SLI and dyslexia were the same condition presenting at different points in development. Bishop and Snowling (2004) concluded that the reality was more complex, with different children showing different combinations of underlying problems, which may be restricted to phonological processing in some cases, or extend to broader aspects of oral language in others. The message, however, is clear: it does not make sense to create a sharp division between oral and written language in any diagnostic system, because the two go hand in hand (Snowling and Hulme 2012).

There are also high rates of co-occurrence between language problems and a range of other neurodevelopmental disorders, notably speech sound disorder, ADHD, developmental dyscalculia, and developmental coordination disorder (DCD: more informally termed ‘developmental dyspraxia’) (Bishop and Rutter 2008). We still do not know the reason for these overlaps, but it seems likely that they occur because the same environmental or genetic factors that increase risk for language problems also increase risk for other neurodevelopmental disorders. Should we refer to language impairments as ‘specific’ when they occur together with these other conditions (Hill 2001)? It comes down to how words are used. If by ‘specific’ we mean that the child has no problems other than with language, then this is clearly an inappropriate term if ADHD or DCD is also present. If, however, we take ‘specific’ to mean ‘idiopathic’ or ‘functional’, i.e. with no known cause, then the term is still applicable, because the co-occurring condition is not an explanation for the language problems.

Autism spectrum disorder (ASD) is of particular interest, because traditional diagnostic criteria exclude a diagnosis of SLI when ASD is present, yet it is clear that a subset of children with ASD also have language difficulties that are similar to those seen in SLI (Tager-Flusberg and Caronna 2007). This has led researchers to subdivide children with ASD into those with and without additional language impairments (Lindgren *et al.* 2009). Even more complex for any diagnostic system are children who appear to occupy a position that is half-way between ASD and SLI. These are children who have problems with pragmatic aspects of communication, yet do not have the repetitive behaviours and restricted interests characteristic of autism. In some cases they also have the kinds of grammatical and phonological difficulties typical of SLI. The solution in DSM-5 has been to create a new category of social communication (pragmatic) disorder (SCD) for these children (figure 3). Norbury (2014) has pointed out a number of problems with this solution: it treats SLI and SCD as different con-

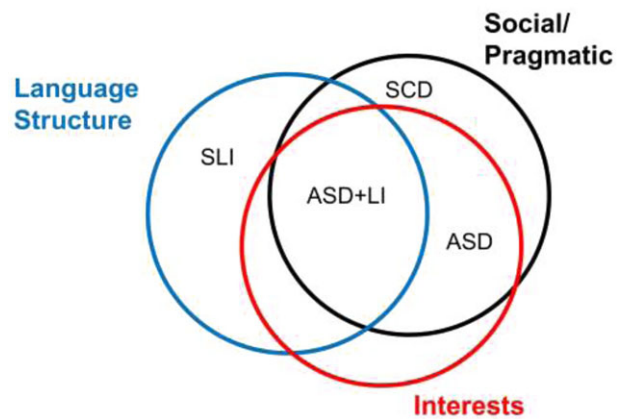


Figure 3. Relationship between social communication disorder (SCD), specific language impairment (SLI) and autism spectrum disorder (ASD) in DSM-5. Unlabelled regions of the Venn diagram do not correspond to specific diagnostic labels, though it is likely that some children would fall in these regions.

ditions, though often there are overlapping impairments in the two groups; it bases diagnosis on aspects of social communication for which reliable and valid assessments are lacking; and there is a risk that children may end up with no suitable intervention if no professional group feels responsible for meeting their needs.

## 7. What labels have been used for unexplained language problems?

The diagnostic mayhem affecting the field of children’s speech and language impairments is illustrated in figure 4. Most labels consist of some permutation of the terms shown in the figure, i.e. an optional prefix (specific, primary, or developmental), a reference to the language domain, and a noun that indicates we are identifying a child with a problem. A search on Google Scholar for each phrase for the period 1994–2013 revealed that 130 of 168 possible combinations had at least one return. Two additional terms that were counted were ‘developmental aphasia’ and ‘developmental dysphasia’. Terms with more than 600 returns are shown in table 2. This reveals a massive problem: not only are there numerous possible terms, but also they can have different meanings. By far the commonest terms were ones with no prefix, but their use was not restricted to children with unexplained language problems. Indeed, the terms, ‘communication delay’ and ‘communication problems’ were widely used to refer to electronic systems. ‘Communication disorder’ identified papers on language or communication difficulties of adults with Parkinson’s disease or acquired aphasia, and children with Down syndrome. ‘Language needs’ often referred to second-language learners. It is of concern that ‘language disorder’ is the term used in DSM-5 to refer

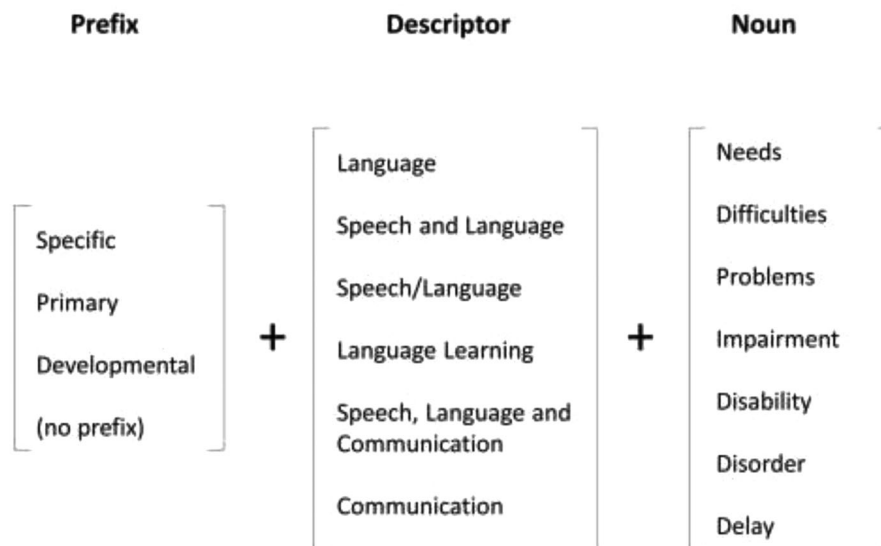


Figure 4. Possible terminology for children with unexplained language problems: 130 of the 168 possible combinations of a prefix, descriptor and noun were found on a literature search using Google Scholar.

to children with unexplained language problems, yet is effectively useless in a literature search because it is far too general.

If we focus just on terms that have a prefix that distinguishes childhood language problems of unknown origin, then table 2 shows that the term 'specific language impairment' is the most commonly used: five times more common than the next in the list, 'developmental language disorder'. As noted, however, there are objections to the label SLI, centring around the word 'specific'. This implies that the language problems occur in the context of otherwise typical development and, this is only rarely the case.

Further confusion surrounds the use of terms such as 'speech and language' or 'speech/language', because they are ambiguous. They could be used to group together children with speech *or* language difficulties, or to refer to those who had problems in both domains. Indeed, 'speech' is a term used with various meanings, and can include those who have articulatory difficulties for structural or neurological reasons (e.g., cleft palate or cerebral palsy), or for cases of 'speech sound disorder' which are not attributable to sensori-motor causes, and may be better characterized as language problems affecting the phonological domain. 'Communication' is another alternative which seems too broad to be useful: although sometimes used with more specific meanings, it potentially includes nonverbal communication and social interaction, as well as language and speech.

Another part of terminology that can be controversial is the third column in figure 4: how problems are referred to. Should we talk about language impairment, disorder, disability, difficulties, needs or delay? In practice, these are often treated as synonyms, yet they have

different connotations and political implications. The term 'disability' was introduced as part of 'specific learning disability' in the United States in the 1960s to refer to children who had difficulties learning despite being of normal intellectual capacity. As Waber (2010) noted, there were legal ramifications in the choice of terminology. 'Learning disability' drew parallels with other disability conditions, and led to provisions being made in law for federal funding for education and research for affected children. 'Disorder' is widely used in medical contexts to refer to neurodevelopmental problems of no known cause, including autistic spectrum disorder and developmental coordination disorder. 'Language disorder' is the term used in DSM-5. However, both 'disability' and 'disorder' are disliked by some practitioners because they are seen as emphasizing abnormality rather than quantitative differences between children, and they focus attention on problems within the child. The acronym LD is also ambiguous, being used for learning disability (which means intellectual disability in the UK but *specific* learning disability in other English-speaking countries).

The term 'delay' is fairly common but highly ambiguous. A parent who is told that their child's development is delayed might reasonably assume that it will follow a normal course but at a later age than usual. 'Language delay' is indeed sometimes used this way, to refer to late-talking toddlers who subsequently catch up with their peer group. However, another use is to draw an implicit contrast with 'language disorder', but agreed criteria for making this distinction do not exist. One view is that a child with language delay will have language that in all respects resembles that of a younger, typically developing child, whereas a child with language disorder

**Table 2. Number of returns for terms with at least 600 returns on Google Scholar, search date range 1994–2013**

Label	Number of hits
*Communication problems <sup>a</sup>	56 739
*Communication needs	40 632
*Language problems	40 427
*Language difficulties	32 610
*Communication difficulties	32 530
*Language needs	21 139
Specific language impairment	18 850
*Communication delay <sup>a</sup>	17 594
*Language impairment	16 663
*Language disorder	16 208
*Language delay	14 786
*Communication disorder	7061
*Communication impairment	4611
*Language disability	3738
Developmental language disorder	3509
*Speech and language difficulties	2602
*Speech and language disorder	2584
*Speech and language problems	2486
*Communication disability	2376
Developmental aphasia	2097
*Speech and language impairment	2081
*Speech and language delay	1781
Developmental dysphasia	1772
*Language learning needs	1758
*Speech/language impairment	1718
*Language learning difficulties	1595
*Language learning problems	1328
Developmental language delay	1310
Developmental language impairment	1105
*Language learning disability	783
*Speech/language disorder	685
*Speech, language and communication needs	673
*Speech/language problems	646

Notes: \* Counts for these terms after subtracting cases preceded by 'specific', 'primary' or 'developmental', which are counted separately.

<sup>a</sup>Frequently used to refer to electronics systems.

will have an abnormal profile. Yet in practice, children who have selective problems with specific components of language (potentially cases of 'disorder') have a better prognosis than those with a more even depression of language skills (Bishop and Edmundson 1987), which seems counterintuitive. And in addition, it is clear that, at least in the research literature, 'delay' is seldom used with such a distinctive meaning: more often, it is just another synonym for below-age-level language skills.

The term 'impairment' has a clear definition in the World Health Organization's (1980) classification of impairments, disabilities and handicaps, but in the context of children's language problems it is used with a rather different meaning. It does not refer to physical impairment, but rather to poor performance on a measure of language skill. Bishop (2004) suggested that, in contrast to 'disability', 'impairment' can be used without any implication that there is an impact on functioning in everyday life. For instance, some children who do

poorly on a test of nonword repetition do not have evident problems in everyday communication or academic achievement. Nevertheless, an impairment in nonword repetition can run in families, and may put the child at risk for language or literacy problems if it occurs in combination with other risk factors (Bishop 2006a, Snowling 2008).

In the UK, 'needs' began to be used in educational contexts after the Warnock Report (Warnock 1978), which introduced the term 'special educational needs' (SEN) to break away from dichotomizing children into the 'handicapped' and everyone else. The report noted that up to one in five children were likely to require some form of special educational provision at some point, and children with language difficulties were explicitly included in this group. The term 'needs' represented a move away from a focus on deficit—what the child or young person could not do—to what was required to provide learning opportunities and support academic progress. It seems, though, too weak a term to convey the major, long-term language deficits that affect some children. Similar criticisms may be made of the terms 'problems' and 'difficulties': everyone has 'needs' and encounters 'problems' and 'difficulties' in life, but other people may feel little obligation to do anything about this if they are just regarded as normal challenges of everyday existence.

## 8. What are the consequences of the lack of agreed terminology?

In many respects, diagnostic dilemmas in the field of children's language problems are similar to those for other conditions such as reading or attentional difficulties: In all cases, there are questions about the appropriateness of a medical model, difficulties in specifying cut-offs to define disorder, and overlaps between different conditions. However, there is one problem that is particular to the domain of language, and that concerns the lack of an agreed label. In this regard, SLI is very different from developmental dyslexia. Just as with SLI, children with a diagnosis of developmental dyslexia are quite variable in both the severity and the profile of their literacy problems, there is no clear dividing line between dyslexia and normal variation, the aetiology is complex and multifactorial, and there is no good biomarker of the condition. Accordingly, the label 'developmental dyslexia' has been repeatedly attacked over the years by those who have pointed out how misleading it is in implying that we are dealing with a homogeneous syndrome with a neurological basis. This case has been made again with renewed vigour in a recent review of evidence by Elliott and Grigorenko (2014). They argue that 'developmental dyslexia' has no

validity, and they make the case that persistent use of the term does a disservice to other poor readers who are denied the extra resources and legal protection that are afforded to those with this label. Nevertheless, the term is likely to weather this attack, just as it has withstood previous assaults (Rutter and Yule 1975, Stanovich 1994). The evidence comes again from bibliometrics, where one can trace changing terminology used at different points in history. Attempts to introduce alternative terms such as ‘specific reading retardation’ (Rutter and Yule 1975), ‘reading disorder’ (American Psychiatric Association 1994) or ‘language-based learning disabilities’ (American Speech–Language–Hearing Association n.d.) have been ignored by the majority of people: In the bibliometric database used by Bishop, the term ‘dyslexia’ accounted for 93% of research papers on children’s reading problems in 1985–89, rising to 99% from 2000 onwards. Quite simply, in spite of its poor validity, the term is a successful meme (Kamhi 2004). One reason for this success may be that ‘dyslexia’ emphasizes the positive consequences listed in the second column of table 1, with some children and young people talking of a sense of relief at receiving the diagnosis (Ingesson 2007) and some claiming that dyslexia has positive attributes—but see Seidenberg (2013).

There is nothing comparable for children with unexplained language problems. If they are provided with a label, it will probably be one that most people have not heard of, and it is unlikely to have any positive connotations. The lack of agreement about terminology means that many will either misunderstand the condition or doubt its reality.

The terminological confusion also has a detrimental effect on research (Bishop 2010). It is very difficult to assemble information from the research literature because one must search using multiple different terms, some of which will capture a large amount of irrelevant material. Any attempt to apply for research funding is hampered by the need to first explain to funders what the condition is that one is researching: it cannot be assumed that they will have any notion of the nature, prevalence, personal implications or social impact of children’s language difficulties. The amount of research funding, and the number of published papers on unexplained language problems is considerably less than one would predict from knowledge of the frequency and impact of such problems (Bishop 2010): It seems likely that lack of agreed terminology plays a significant role in this deficit.

### 9. How might we enhance positive consequences, and avoid negative consequences, of labelling?

I have argued in favour of an agreed label to refer to children with unexplained language problems, but noted

too that there can be unintended negative consequences of using labels. How can these be averted? First, a child who receives such a label should automatically qualify for an evaluation by a language specialist—usually a speech and language therapist—who would aim to identify barriers to language learning and put intervention in place to counteract or compensate for these. Note the mention of compensation: there are rather few kinds of language intervention that have been validated as effective in clinical trials for improving serious language deficits, especially those involving comprehension (Law *et al.* 2004). This does not mean that we should stop trying to develop interventions, but it does imply that one role of the therapist will be to work with children and their teachers to develop effective strategies for coping with problems and accommodating to them. The second recommendation is more radical: it is that any child identified with unexplained language problems should also undergo an evaluation to identify areas of strength: activities they enjoy and have the possibility of succeeding at. These could, for instance, involve sports, art, cookery, graphic design, horticulture, working with animals or music. Realistically, we would not expect all children to have hidden talents, but we should move from a frame of mind that is solely focused on deficits, and attempting to ‘fix’ these so the child can gain academic credentials. We have ample evidence that most children with language learning impairments (LLIs) have difficulties that persist into adolescence (Conti-Ramsden and Durkin 2008, Stothard *et al.* 1998) and beyond (Clegg *et al.* 2005, Johnson *et al.* 2010, Whitehouse *et al.* 2009a). We should therefore be thinking more about how to enable children to be successful citizens, and this may require us to move away from narrowly conceived academic ideas of success.

### 10. What terminology should we adopt?

I have argued that we need an agreed terminology to describe children whose language is well behind age level for no obvious reason. As Tomblin (2008: 95) put it: ‘language disorder represents a situation in which the child is unlikely to be able to meet the socially defined functional expectations either currently or in the future because of his or her current or future language abilities’. We know that when language problems persist into school age, the outcomes for children are usually poor. While they may benefit from school-based programmes designed to foster language development in all children (Law *et al.* 2013), this is unlikely to be sufficient to overcome the academic and social difficulties that ensue when language expression and/or comprehension are well behind that of the peer group.

Labels can have negative consequences, but the consequences of avoiding labels can be worse. Without agreed criteria for identifying children in need of additional help, and without agreed labels for talking about

them, we cannot improve our understanding of why some children fail, or evaluate the efficacy of attempts to help them. The fact that language difficulties do not constitute a specific syndrome is not a sufficient reason to abandon labels.

The current situation, with myriad different definitions and labels, is unsustainable. Having an unconstrained set of descriptive terms is just as bad as having no labels at all. It hinders communication, prevents cumulative research, and introduces ambiguity into decisions about who merits intervention—ambiguity that can easily be exploited when it is politically expedient to do so.

Although I have argued that the purpose of diagnosis will determine the ideal diagnostic system, there needs to be contact between different approaches: those working in education, in speech–language therapy and in research need to have a common vocabulary that allows information to be exchanged between these disciplines.

One point that is often overlooked when devising classification systems is the importance of having a label that is a good term for use with internet search engines. In this regard, general terms, such as ‘language disorder’ are too nonspecific to be useful; although they can be applied to unexplained language problems, they are also used descriptively for adults as well as children with a wide range of aetiologies. The term ‘speech, language and communication needs’ (SLCN), which is widely used in the UK in educational contexts, is also too general, as it includes both speech and language difficulties, and fails to distinguish unexplained language problems from those that can be attributed to a known cause. While there may be situations when it is not necessary to distinguish problems by type or by aetiology, very often this distinction is of practical importance in education, as well as being crucial for research.

Of the less general terms in current use, SLI is by far the most common in academic settings, though it is less widely used in clinical and educational practice in the UK. A case could be made for retaining this term, to maintain continuity with the past. It has, however, one drawback, which is that the ‘specific’ part of the label has been criticized for being too exclusive. If we take ‘specific’ to mean that the child (1) has a substantial discrepancy between language and nonverbal ability and (2) has no other neurodevelopmental difficulties, then a vanishingly small proportion of language-impaired children would be included as cases of SLI. In practice, the criteria have loosened over the years, and it is no longer common to interpret SLI as requiring a large mismatch between verbal and nonverbal skills: rather children are included if they have notable language difficulties in the context of broadly normal-range nonverbal ability—usually interpreted as having a nonverbal IQ of at least 80 (though some use other cut-offs, ranging from 70 to 85) (Tomblin *et al.* 1996). Furthermore, the presence of other conditions such as dyslexia, ADHD, or DCD

would not usually be regarded as precluding the diagnosis of SLI. So we could just agree to keep the term SLI, but to adopt laxer criteria that did not specify an absence of other neurodevelopmental problems, and that require only that nonverbal IQ should be broadly within normal limits. This corresponds to usage by the American Speech–Language–Hearing Association (2008). In addition, we might want to restrict the use of SLI to children who have a functional impairment affecting everyday communication, social interaction, behaviour, and/or academic attainment.

We also need to reach agreement about a common set of language components that should be included in a language assessment for SLI. In clinical practice, the choice of measures can be quite arbitrary, but is of potential importance: it could, for instance, determine whether children meeting DSM-5 criteria for social communication disorder are included or not. One approach would be to include those aspects of language that reliably have emerged as good ‘markers’ of SLI (Bishop 2004, Conti-Ramsden 2003, Redmond *et al.* 2011). These mainly involve aspects of language structure and verbal memory, rather than language content or use.

SLI is not, however, the only terminological option open to us. An alternative term that would be precise enough to be useful, without having unwanted connotations of specificity is primary language impairment (PLI). This term is not in widespread circulation—it had only 362 returns on my Google Scholar search—but it has been used in two contexts: first, when identifying language impairments that are not accounted for by bilingualism (Kohnert 2010) and second as a more inclusive term to refer to language difficulties that are not secondary to another condition, without requiring a discrepancy with nonverbal ability (Boyle *et al.* 2007). One drawback is that the acronym PLI has potential for confusion with ‘pragmatic language impairment’ (Bishop 2000), though it could be argued that this is not important, given that ‘pragmatic language impairment’ was never part of any official diagnostic framework, and DSM-5 has now coined ‘social communication disorder’ which covers the same territory.

Another option would be to revert to a term such as ‘developmental language disorder’, which was more commonly used some 20–30 years ago. As noted above, ‘disorder’ is disliked by some because it has medical overtones and implies qualitative rather than quantitative differences between children. ‘Developmental language impairment’ would be another possibility, which is already in circulation (table 2).

Finally, another option would be the term ‘language learning impairment’ (LLI). Like PLI or developmental language disorder, this avoids confusion with more general language problems from known aetiologies, without implying that the language problems occur in isolation.

It also emphasizes that this is a kind of learning difficulty, rather than reflecting a lack of progress due to inadequate stimulation. This is the term that we settled upon when considering how to refer to unexpected language difficulties in an internet campaign to raise awareness: Raising Awareness of Language Learning Impairments (RALLI) (Bishop *et al.* 2012). However, only time will tell whether it becomes more widely accepted, or joins the long list of possible labels that serve only to add to confusion in this field. Changing a label should not be undertaken lightly, as it can break links with previous knowledge: this is why in the RALLI campaign we still use 'specific language impairment' in many of our videos, as this is a better-known label, and more likely to be used as a search term. Only by having discussions with a wide range of stakeholders can we hope to reach a consensus on terminology.

Many of the points made by Frances (2013) in his DSM-5 critique would apply equally to our deliberations about a label such as SLI. We should heed his warnings about unintended consequences of diagnostic inflation and medicalization of normality. But we should note too his comments about the importance of diagnostic labels for those whose problems are severe, clear-cut, and unlikely to go away on their own. We must accept that we will never have an ideal nomenclature, suitable for all purposes: As Frances noted, diagnosis has a necessary place in every evaluation, but never tells the whole story. We must not reify our labels, but recognize they are a collection of 'temporarily useful diagnostic constructs, not a catalogue of "real" diseases' (Frances 2013: 73).

### Acknowledgements

The author is most grateful to Becky Clark, Kate Nation and Caroline Bowen for insightful comments on an earlier draft of this paper. This research was supported by a Wellcome Trust Principal Research Fellowship and programme (Grant Number 082498/Z/07/Z). **Declaration of interest:** The author reports no conflicts of interest. The author alone is responsible for the content and writing of the paper.

### References

- AMERICAN PSYCHIATRIC ASSOCIATION, 1994, *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition* (Washington, DC: American Psychiatric Association).
- AMERICAN PSYCHIATRIC ASSOCIATION, 2013, *Diagnostic and Statistical Manual of Mental Disorders (5th ed.): DSM-5* (Arlington, VA: American Psychiatric Publ.).
- AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION, 2008, *Incidence and Prevalence of Communication Disorders and Hearing Loss in Children—2008 Edition* (available at: <http://www.asha.org/research/reports/children.htm>).
- AMERICAN SPEECH-LANGUAGE-HEARING ASSOCIATION, n.d., *Language-Based Learning Disabilities* (available at: <http://www.asha.org/public/speech/disorders/lbld.htm>).
- BARRY, J. G., YASIN, I. and BISHOP, D. V. M., 2007, Heritable risk factors associated with language impairments. *Genes, Brain and Behavior*, **6**, 66–76.
- BISHOP, D. V. M., 1983, Comprehension of English syntax by profoundly deaf children. *Journal of Child Psychology and Psychiatry*, **24**, 415–434.
- BISHOP, D. V. M., 1994, Is specific language impairment a valid diagnostic category? Genetic and psycholinguistic evidence. *Philosophical Transactions of the Royal Society, Series B*, **346**, 105–111.
- BISHOP, D. V. M., 2000, Pragmatic language impairment: a correlate of SLI, a distinct subgroup, or part of the autistic continuum? In D. V. M. Bishop and L. B. Leonard (eds), *Speech and Language Impairments in Children: Causes, Characteristics, Intervention and Outcome* (Hove: Psychology Press), pp. 99–113.
- BISHOP, D. V. M., 2004, Specific language impairment: diagnostic dilemmas. In L. Verhoeven and H. van Balkom (eds), *Classification of Developmental Language Disorders* (Mahwah, NJ: Erlbaum), pp. 309–326.
- BISHOP, D. V. M., 2006a, Developmental cognitive genetics: how psychology can inform genetics and vice versa. *Quarterly Journal of Experimental Psychology*, **59**, 1153–1168.
- BISHOP, D. V. M., 2006b, What causes specific language impairment in children? *Current Directions in Psychological Science*, **15**, 217–221.
- BISHOP, D. V. M., 2009, Genes, cognition and communication: insights from neurodevelopmental disorders. *The Year in Cognitive Neuroscience: Annals of the New York Academy of Sciences*, **1156**, 1–18.
- BISHOP, D. V. M., 2010, Which neurodevelopmental disorders get researched and why? *PLOS One*, **5**, e15112.
- BISHOP, D. V. M., 2013, Problems with tense-marking in children with specific language impairment (SLI): not how but when. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **369**, 20120401.
- BISHOP, D. V. M., CLARK, B., CONTI-RAMSDEN, G., NORBURY, C. F. and SNOWLING, M. J., 2012, RALLI: an internet campaign for raising awareness of language learning impairments. *Child Language Teaching and Therapy*, **28**, 259–262.
- BISHOP, D. V. M. and EDMUNDSON, A., 1987, Language-impaired four-year-olds: distinguishing transient from persistent impairment. *Journal of Speech and Hearing Disorders*, **52**, 156–173.
- BISHOP, D. V. M. and HAYIOU-THOMAS, M. E., 2008, Heritability of specific language impairment depends on diagnostic criteria. *Genes, Brain and Behavior*, **7**, 365–372.
- BISHOP, D. V. M. and McDONALD, D., 2009, Identifying language impairment in children: combining language test scores with parental report. *International Journal of Language and Communication Disorders*, **44**, 600–615.
- BISHOP, D. V. M., NORTH, T. and DONLAN, C., 1995, Genetic basis of specific language impairment: evidence from a twin study. *Developmental Medicine and Child Neurology*, **37**, 56–71.
- BISHOP, D. and RUTTER, M., 2008, Neurodevelopmental disorders: conceptual issues. In M. Rutter, D. Bishop, D. Pine, S. Scott, J. Stevenson, E. Taylor and A. Thapar (eds), *Rutter's Child and Adolescent Psychiatry* (Oxford: Blackwell), pp. 32–41.
- BISHOP, D. V. M. and SCERIF, G., 2011, Klinefelter syndrome as a window on the etiology of language and communication impairments in children. *Acta Paediatrica*, **100**, 903–907.
- BISHOP, D. V. M. and SNOWLING, M. J., 2004, Developmental dyslexia and specific language impairment: same or different? *Psychological Bulletin*, **130**, 858–886.
- BOYLE, J., MCCARTNEY, E., FORBES, J. and O'HARE, A., 2007, A randomised controlled trial and economic evaluation of direct versus indirect and individual versus group modes of speech and language therapy for children with primary language impairment. *Health Technology Assessment*, **11**, iii–iv, xi.

- CLEGG, J., HOLLIS, C., MAWHOOD, L. and RUTTER, M., 2005, Developmental language disorders—a follow-up in later life. Cognitive, language and psychosocial outcomes. *Journal of Child Psychology and Psychiatry*, **46**, 128–149.
- COHEN, N. J., MENNA, R., VALLANCE, D. D., BARWICK, M. A., IM, N. and HORODEZKY, N. B., 1998, Language, social cognitive processing, and behavioral characteristics of psychiatrically disturbed children with previously identified and unsuspected language impairments. *Journal of Child Psychology and Psychiatry*, **39**, 853–864.
- COLE, K. N. and FEY, M. E., 1997, Cognitive referencing in language assessment. In K. N. Cole, P. S. Dale and D. J. Thal (eds), *Assessment of Communication and Language* (Baltimore, MD: Paul H. Brookes), pp. 143–160.
- CONTI-RAMSDEN, G., 2003, Processing and linguistic markers in young children with specific language impairment. *Journal of Speech, Language and Hearing Research*, **46**, 1029–1037.
- CONTI-RAMSDEN, G., BOTTING, N. and FARAGHER, B., 2001, Psycholinguistic markers for specific language impairment (SLI). *Journal of Child Psychology and Psychiatry*, **42**, 741–748.
- CONTI-RAMSDEN, G. and DURKIN, K., 2008, Language and independence in adolescents with and without a history of specific language impairment (SLI). *Journal of Speech, Language and Hearing Research*, **51**, 70–83.
- CONTI-RAMSDEN, G., MOK, P. L. H., PICKLES, A. and DURKIN, K., 2013, Adolescents with a history of specific language impairment (SLI): strengths and difficulties in social, emotional and behavioral functioning. *Research in Developmental Disabilities*, **34**, 4161–4169.
- DE VASCONCELOS HAGE, S. R., CENDES, F., MONTENEGRO, M. A., ABRAMIDES, D. V., GUIMARÃES, C. A. and GUERREIRO, M. M., 2006, Specific language impairment: linguistic and neurobiological aspects. *Arquivos de Neuro-Psiquiatria*, **64**, 173–180.
- DURKIN, K., CONTI-RAMSDEN, G. and SIMKIN, Z., 2012, Functional outcomes of adolescents with a history of specific language impairment (SLI) with and without autistic symptomatology. *Journal of Autism and Developmental Disorders*, **42**, 123–138.
- DYCK, M. J., PIEK, J. P. and PATRICK, J., 2011, The validity of psychiatric diagnoses: the case of ‘specific’ developmental disorders. *Research in Developmental Disabilities*, **32**, 2704–2713.
- ELLIOTT, J. G. and GRIGORENKO, E. L., 2014, *The Dyslexia Debate* (Cambridge: Cambridge University Press).
- FLETCHER, J. M., 1992, The validity of distinguishing children with language and learning disabilities according to discrepancies with IQ. *Journal of Learning Disabilities*, **25**, 546–548.
- FRANCES, A., 2013, *Saving Normal: An Insider's Revolt against Out-of-Control Psychiatric Diagnosis, DSM-5, Big Pharma, and the Medicalization of Ordinary Life* (New York, NY: Harper-Collins).
- GOTTESMAN, I. I. and GOULD, T. D., 2003, The endophenotype concept in psychiatry: etymology and strategic intentions. *American Journal of Psychiatry*, **160**, 636–645.
- GRAF ESTES, K., EVANS, J. L. and ELSE-QUEST, N. M., 2007, Differences in the nonword repetition performance of children with and without specific language impairment: a meta-analysis. *Journal of Speech, Language and Hearing Research*, **50**, 177–195.
- GRAHAM, S. A. and FISHER, S. E., 2013, Decoding the genetics of speech and language. *Current Opinion in Neurobiology*, **23**, 43–51.
- HAWKER, K., RAMIREZ-INSCOE, J., BISHOP, D. V. M., TWOMEY, T., O'DONOGHUE, G. M. and MOORE, D. R., 2008, Disproportionate language impairment in some children using cochlear implants. *Ear and Hearing*, **29**, 467–471.
- HILL, E. L., 2001, Non-specific nature of specific language impairment: a review of the literature with regard to concomitant motor impairments. *International Journal of Language and Communication Disorders*, **36**, 149–171.
- HYMAN, S. E., 2010, The diagnosis of mental disorders: the problem of reification. *Annual Review of Clinical Psychology*, **6**, 155–179.
- INGESSON, S. G., 2007, Growing up with dyslexia: interviews with teenagers and young adults. *School Psychology International*, **28**, 574–591.
- JOHNSON, C. J., BEITCHMAN, J. H. and BROWNLIE, E. B., 2010, Twenty-year follow-up of children with and without speech-language impairments: family, educational, occupational, and quality of life outcomes. *American Journal of Speech-Language Pathology*, **19**, 51–65.
- KAMHI, A. G., 2004, A meme's eye view of speech-language pathology. *Language, Speech and Hearing Services in Schools*, **35**, 105–111.
- KOHNERT, K., 2010, Bilingual children with primary language impairment: issues, evidence and implications for clinical actions. *Journal of Communication Disorders*, **43**, 456–473.
- LAUHLAN, F. and BOYLE, C., 2007, Is the use of labels in special education helpful? *Support for Learning*, **22**, 36–42.
- LAW, J., GARRETT, Z. and NYE, C., 2004, The efficacy of treatment for children with developmental speech and language delay/disorder: a meta-analysis. *Journal of Speech, Language, and Hearing Research*, **47**, 924–943.
- LAW, J., MCBEAN, K. and RUSH, R., 2011, Communication skills in a population of primary school-aged children raised in an area of pronounced social disadvantage. *International Journal of Language and Communication Disorders*, **46**, 657–664.
- LAW, J., REILLY, S. and SNOW, P. C., 2013, Child speech, language and communication need re-examined in a public health context: a new direction for the speech and language therapy profession. *International Journal of Language and Communication Disorders*, **48**, 486–496.
- LAW, J., RUSH, R., SCHOON, I. and PARSONS, S., 2009, Modeling developmental language difficulties from school entry into adulthood: literacy, mental health, and employment outcomes. *Journal of Speech, Language and Hearing Research*, **52**, 1401–1416.
- LAW, G. and BISHOP, D. V. M., 2004, Verbal deficits in Down's syndrome and specific language impairment: a comparison. *International Journal of Language and Communication Disorders*, **39**, 423–451.
- LEFFEL, K. and SUSKIND, D., 2013, Parent-directed approaches to enrich the early language environments of children living in poverty. *Seminars in Speech and Language*, **34**, 267–277.
- LEONARD, C. M., MARON, L., BENGTON, M., KULDAU, J. M., RICCIUTI, N., MAHONEY, B. and DEBOSE, C., 2008, Identical neural risk factors predict cognitive deficit in dyslexia and schizophrenia. *Neuropsychology*, **22**, 147–158.
- LEPPÄNEN, P. H. T., LYTTINEN, H., CHOUDHURY, N. and BENASICH, A., 2004, Neuroimaging measures in the study of specific language impairment. In L. Verhoeven and H. van Balkom (eds), *Classification of Developmental Language Disorders* (Mahwah, NJ: Erlbaum), pp. 99–136.
- LETTIS, C., EDWARDS, S., SINKA, I., SCHAEFER, B. and GIBBONS, W., 2013, Socio-economic status and language acquisition: children's performance on the new Reynell Developmental Language Scales. *International Journal of Language and Communication Disorders*, **48**, 131–143.
- LEWIS, B. A., SHRIBERG, L. D., FREEBAIRN, L. A., HANSEN, A. J., STEIN, C. M., TAYLOR, H. G. and IYENGAR, S. K., 2006, The genetic bases of speech sound disorders: Evidence from

- spoken and written language. *Journal of Speech, Language and Hearing Research*, **49**, 1294–1312.
- LINDGREN, K. A., FOLSTEIN, S. E., TOMBLIN, J. B. and TAGER-FLUSBERG, H., 2009, Language and reading abilities of children with autism spectrum disorders and specific language impairment and their first-degree relatives. *Autism Research*, **2**, 22–38.
- LUM, J. A. G., CONTI-RAMSDEN, G. M., MORGAN, A. T. and ULLMAN, M. T., 2013, Procedural learning deficits in specific language impairment (SLI): a meta-analysis of serial reaction time task performance. *Cortex*, **51**, 1–10.
- LYTTINEN, P., EKLUND, K. and LYTTINEN, H., 2005, Language development and literacy skills in late-talking toddlers with and without familial risk for dyslexia. *Annals of Dyslexia*, **55**, 166–192.
- MASON, K., ROWLEY, K., MARSHALL, C. R., ATKINSON, J. R., HERMAN, R., WOLL, B. and MORGAN, G., 2010, Identifying specific language impairment in deaf children acquiring British Sign Language: implications for theory and practice. *British Journal of Developmental Psychology*, **28**, 33–49.
- NEWBURY, D. F., PARACCHINI, S., SCERRI, T. S., WINCHESTER, L., ADDIS, L., RICHARDSON, A. J., WALTER, J., STEIN, J. F., TALLCOTT, J. B. and MONACO, A. P., 2011, Investigation of dyslexia and SLI risk variants in reading- and language-impaired subjects. *Behavior Genetics*, **41**, 90–104.
- NORBURY, C. F., 2014, Practitioner review: Social (pragmatic) communication disorder conceptualization, evidence and clinical implications. *Journal of Child Psychology and Psychiatry*, **55**, 204–216.
- OFFICE FOR STANDARDS IN EDUCATION, CHILDREN'S SERVICES AND SKILLS, 2010, *The Special Educational Needs and Disability Review: A Statement is Not Enough* (Manchester: Office for Standards in Education, Children's Services and Skills).
- PARSONS, S., SCHOON, I., RUSH, R. and LAW, J., 2011, Long-term outcomes for children with early language problems: beating the odds. *Children and Society*, **25**, 202–214.
- PICKSTONE, C., GOLDBART, J., MARSHALL, J., REES, A. and ROULSTONE, S., 2009, A systematic review of environmental interventions to improve child language outcomes for children with or at risk of primary language impairment. *Journal of Research in Special Educational Needs*, **9**, 66–79.
- RAMIREZ-INSCOE, J. and MOORE, D. R., 2011, Processes that influence communicative impairments in deaf children using cochlear implants. *Ear and Hearing*, **32**, 690–698.
- REDMOND, S. M., THOMPSON, H. L. and GOLDSTEIN, S., 2011, Psycholinguistic profiling differentiates specific language impairment from typical development and from attention-deficit/hyperactivity disorder. *Journal of Speech, Language and Hearing Research*, **54**, 99–117.
- REILLY, S., WAKE, M., UKOUMUNNE, O. C., BAVIN, E., PRIOR, M., CINI, E., CONWAY, L., EADIE, P. and BRETHERTON, L., 2010, Predicting language outcomes at 4 years of age: findings from Early Language in Victoria Study. *Pediatrics*, **126**, E1530–E1537.
- RICE, M. L., 2000, Grammatical symptoms of specific language impairment. In D. V. M. Bishop and L. B. Leonard (eds), *Speech and Language Impairments in Children: Causes, Characteristics, Intervention and Outcome* (Hove: Psychology Press), pp. 17–34.
- ROY, P. and CHIAT, S., 2013, Teasing apart disadvantage from disorder: the case of poor language. In C. R. Marshall (ed.), *Current Issues in Developmental Disorders* (Hove: Psychology Press), pp. 125–150.
- RUTTER, M. and YULE, W., 1975, The concept of specific reading retardation. *Journal of Child Psychology and Psychiatry*, **16**, 181–197.
- SCHOON, I., PARSONS, S., RUSH, R. and LAW, J., 2010, Childhood language skills and adult literacy: a 29-year follow-up study. *Pediatrics*, **125**, E459–E466.
- SEIDENBERG, M., 2013, *The Gladwell Pivot* (available at: <http://language.ledc.upenn.edu/nll/?p=8123>) (accessed on 24 November 2013).
- SNOWLING, M. J., 2008, Specific disorders and broader phenotypes; the case of dyslexia. In D. V. M. Bishop, M. J. Snowling and S.-J. Blakemore (eds), *Neurocognitive Approaches to Developmental Disorders: A Festschrift for Uta Frith* (Hove: Psychology Press), pp. 142–156.
- SNOWLING, M. J., BISHOP, D. V. M., STOTHARD, S. E., CHIPCHASE, B. and KAPLAN, C., 2006, Psychosocial outcomes at 15 years of children with a preschool history of speech–language impairment. *Journal of Child Psychology and Psychiatry*, **47**, 759–765.
- SNOWLING, M. J. and HULME, C., 2012, Annual Research Review: The nature and classification of reading disorders—a commentary on proposals for DSM-5. *Journal of Child Psychology and Psychiatry*, **53**, 593–607.
- STANOVICH, K. E., 1994, Annotation: does dyslexia exist? *Journal of Child Psychology and Psychiatry*, **35**, 579–595.
- STOTHARD, S. E., SNOWLING, M. J., BISHOP, D. V. M., CHIPCHASE, B. B. and KAPLAN, C. A., 1998, Language impaired preschoolers: a follow-up into adolescence. *Journal of Speech, Language and Hearing Research*, **41**, 407–418.
- TAGER-FLUSBERG, H. and CARONNA, E., 2007, Language disorders: autism and other pervasive developmental disorders. *Pediatric Clinics of North America*, **54**, 469–481.
- TAYLOR, E. and RUTTER, M. L., 2008, Classification. In M. Rutter, D. Bishop, D. Pine, S. Scott, J. Stevenson, E. Taylor and A. Thapar (eds), *Rutter's Child and Adolescent Psychiatry* (Oxford: Blackwell), pp. 18–41.
- TOMBLIN, J. B., 2008, Validating diagnostic standards for SLI using adolescent outcomes. In C. F. Norbury, J. B. Tomblin and D. V. M. Bishop (eds), *Understanding Developmental Language Disorders* (Hove: Psychology Press), 93–114.
- TOMBLIN, J. B., RECORDS, N. and ZHANG, X., 1996, A system for the diagnosis of specific language impairment in kindergarten children. *Journal of Speech and Hearing Research*, **39**, 1284–1294.
- TOMBLIN, J. B., RECORDS, N. L., BUCKWALTER, P., ZHANG, X., SMITH, E. and O'BRIEN, M., 1997, Prevalence of specific language impairment in kindergarten children. *Journal of Speech and Hearing Research*, **40**, 1245–1260.
- TOMBLIN, J. B., ZHANG, X., BUCKWALTER, P. and O'BRIEN, M., 2003, The stability of primary language disorder: four years after kindergarten diagnosis. *Journal of Speech, Language and Hearing Research*, **46**, 1283–1296.
- WABER, D. P., 2010, *Rethinking Learning Disabilities: Understanding Children who Struggle in School* (New York, NY: Guilford).
- WARNOCK, H. M., 1978, *Special Educational Needs: Report of the Committee of Enquiry into the Education of Handicapped Children and Young People* (London: HMSO).
- WASHINGTON, K. N., WARR-LEEPER, G. and THOMAS-STONELL, N., 2011, Exploring the outcomes of a novel computer-assisted treatment program targeting expressive-grammar deficits in preschoolers with SLI. *Journal of Communication Disorders*, **44**, 315–330.
- WHITEHOUSE, A. J. O., LINE, E. A., WATT, H. J. and BISHOP, D. V. M., 2009a, Qualitative aspects of developmental language impairment relates to language and literacy outcome in adulthood. *International Journal of Language and Communication Disorders*, **44**, 489–510.
- WHITEHOUSE, A. J. O., WATT, H. J., LINE, E. A. and BISHOP, D. V. M., 2009b, Adult psychosocial outcomes of children with specific language impairment, pragmatic language



impairment and autism. *International Journal of Language and Communication Disorders*, **44**, 511–528.

WORLD HEALTH ORGANIZATION, 1980, *International Classification of Impairments, Disabilities, and Handicaps* (Geneva: World Health Organization).

WORLD HEALTH ORGANIZATION, 1992, *The ICD-10 Classification for Mental and Behavioural Disorders: Clinical De-*

*scriptions and Diagnostic Guidelines* (Geneva: World Health Organization).

ZAMBRANA, I. M., PONS, F., EADIE, P. and YSTROM, E., 2014, Trajectories of language delay from age 3 to 5: persistence, recovery and late onset. *International Journal of Language and Communication Disorders*, **49**, 304–316.

### How to cite Commentary articles

Please use the following style:

Baird G., 2014, Lumping, splitting, drawing lines, statistical cutoffs and impairment. Commentary on Bishop, D.V.M., 2014, Ten questions about terminology for children with unexplained language problems. *International Journal of Language and Communication Disorders*, **49**, 381–415. doi: 10.1111/1460-6984.12101

## Commentary

# Lumping, splitting, drawing lines, statistical cut-offs and impairment: a commentary on ‘Ten questions about terminology for children with unexplained language problems’

Gillian Baird

Professor of Paediatric Neurodisability and Consultant Paediatrician, Guy’s & St Thomas NHS Foundation Trust and King’s Health Partners, London, UK

### Abstract

There is an agreed need for some classification system of language problems, but the varying views about inclusion/exclusion criteria, the lack of biomarkers and the similar problems affecting all neurodevelopmental disorders are explored.

### Main text

There have long been debates about whether some children learn language differently or are simply at the lower end of a normal continuum of language development (Leonard 1991). Much research has suggested that there is a group of children who have a real problem in learning language and that this is lifelong, that the effects are initially on understanding and speaking language, and subsequently on reading and understanding written language. Persistent deficits have been shown in aspects of language processing, such as non-word repetition and reading non-words, leading to suggestions that such skills are markers for language learning and reading problems.

The hypothesis of a developmental learning disorder affecting language is recognized in the current classification systems (ICD and DSM) alongside similar learning difficulties in motor coordination, attentional development and academic skills. For each of these the same debate has occurred over whether these disorders repre-

sent the extreme end of a normal continuum or a specific learning impairment which is different and can be separated by specific tests. Therein lies the difficulty—an absence of specific tests that clearly differentiate a disorder from a normal continuum. In all these developmental areas it becomes a matter of clinical judgement about where ‘lines’ are drawn. However, this problem is not confined to neurodevelopmental disorders and is much the same in measures of physiology such as high blood pressure, a topic in which debate over what is normal and what is a case needing intervention is equally vigorous. As Bishop points out, many of the disorders are multifactorial in aetiology. The problem with classification systems is that they impose categories upon dimensions and in the absence of biomarkers are based on surface features of behaviour, which include measures that are standardized, norm-based, etc. Bishop draws attention to the limitations of a statistical approach to defining language problems (favoured by Reilly *et al.*

2014) and also the likely inconsistency of using impairment (or concern by teacher or parent) alone as a defining feature. What is lacking are agreed inclusion criteria.

Professor Bishop has been at the forefront of research into language disorders, the reasons for them and the links with literacy, and thereby has contributed to our understanding of both the immediate and long-term problems that are experienced by children and young people with language-learning difficulties. As always, she writes lucidly. The opening vignette summarizes the dilemma for the individual child and also the perspectives of those from various services inevitably involved, whether it be speech and language, other members of the health service, the education service, and parents struggling to understand what the problem is with their child.

The fourth section, in which Bishop outlines the criteria for identifying children with language problems, is particularly helpful, highlighting the difficulties of differentiating from typical development, the problems of using cognitive ability as separating those with language impairments from those with additional learning problems; whether or not genetic syndromes should be excluded and, very importantly, the influence of language environment and/or social deprivation on language development. Bishop makes a very good case for her own view that genetic risk factors play a far larger part than is generally understood by those writing about social deprivation.

I am glad that Bishop goes on to defend the use of diagnostic classification and hence 'labels'. The diagnostic approach has been criticized as over-medicalizing normal variation or for placing a problem within the person rather than society.

However, at its best it prompts a problem-based approach that leads the parent and then the professional to seek an answer to the question: 'Why has my child got this problem? Is there a treatable cause?'. A classification system should have clinical, public health and research utility. It provides a language for communication with the individual and parents/carers/families and with others (health, education etc.) who will be responding to that individual's problems. It provides a framework for research and access to specific evidence-based treatments. As Bishop emphasizes in her second section, identifying specific deficits, evaluating interventions and giving parents a prognosis are all helpful correlates of taking a diagnostic classification based approach.

One danger, of course, of classification systems is that labels are reified and both clinicians and researchers stop thinking about whether this is the best way of classifying a problem. Researchers need continually to challenge the existing categories and definitions. An ob-

vious example is the change from DSM-IV to DSM-5 in autism spectrum disorders where subgrouping into atypical autism, Asperger's syndrome etc. was found not to be consistently applied. There were no really clear distinctions between the subgroups that met critical evaluation, there were no genetic factors distinguishing subgroups. They have now been abandoned in DSM-5 and included under the more general title of autism spectrum disorders, a lumping rather than a splitting approach. This does not mean that a splitting approach may not become appropriate again, but on a different basis rather than the current DSM-IV and ICD-10 one. Reilly *et al.* (2014), I think, seek to do the same with language impairment.

Bishop's views about the 'label' used for those with language-learning problems are particularly pertinent to current discussions, especially her strictures about the DSM-5 label of language disorder and the need for a 'searchable' term. There are many problems with the term 'specific' which she (and Reilly *et al.*) outline, particularly given the increasing recognition of coexistence with other developmental disorders and the fact that using a non-verbal reference point is increasingly regarded as not helpful. 'Disorder' is the term used throughout DSM and ICD for conditions without obvious aetiology and is intended to separate any condition from its functional effect as described separately in the International Classification of Function, Disability and Health.

In conclusion, the elusive goal in language-learning problems, as in other developmental conditions, remains finding underlying neurobiological factors with the aim of selecting those who need particular interventions and compensatory strategies, rather than measuring surface features and arguing about statistical cut-offs. The biomarkers proposed have not been clearly tested in population samples. Language learning is heterogeneous, so one marker such as non-word repetition may be too simplistic and has, in any case, been more strongly linked to reading decoding with language impairment rather than being universally impaired in those with language-learning impairments. Agreed inclusion criteria for developmental language disorder recognizing heterogeneity and potential subgroups, rather than exclusion criteria, would help the clinical and research community. In the absence of biomarkers and underlying process impairment markers, the child that a parent or a teacher is concerned about is, as Bishop points out, as important to pay attention to as the child who fails test scores.

Gillian Baird was a member of the DSM-5 Neurodevelopmental Work Group and is a member of the ICD-11 Neurodevelopmental Work Group; e-mail: gillian.baird@gstt.nhs.uk.

## To label or not to label: is this the question?

Fraser Lauchlan\* and Christopher Boyle†

\*University of Strathclyde, Glasgow, UK

†University of New England, Armidale, NSW, Australia

### Abstract

We consider whether the use of labels is an inevitable consequence of the world of limited and finite resources in which we live and work, or whether there could be other positive reasons for using labels. We argue that it may be more worthwhile expending time and energy on intervention for children with language difficulties rather than on the diagnosis itself.

### Main text

Seven years ago, while working as educational psychologists (EPs) for a local education authority in Scotland, we wrote a paper on the advantages and disadvantages of labelling (Lauchlan and Boyle 2007). We did not expect the level of interest that would result, not only amongst the academic and professional community, but also in the media (*Times Educational Supplement* (TES) 2007). Seven years on, the labelling debate is still rife and we have been invited to comment on Dorothy Bishop's paper which outlines the arguments for the use of different terminology (or labels) for children who have unexplained language problems.

We tend to agree with Bishop's comments that the removal of labels could unfortunately lead to the removal of support for many children, and this is a consequence that no caring professional could tolerate. We certainly do not condone the stance that some may make, as a professional, not to label a child solely to make a sociological point if the consequence was that there could be no access to services for the person and family that required it. A question then: Do we accept (perhaps reluctantly) that we use labels only because the educational/health system in which we work demands it, or do we use them for other reasons? This is at the heart of Bishop's paper in our view, i.e. that there *are* other positive reasons for using labels. However, there are counter-arguments that could be made to some of the points made. Let us consider some of these.

Bishop raises the need to have clear and objective criteria that should be used to determine which children might benefit from support. Again, we agree with Bishop's statement. However, the difficulty is that there do not currently exist any clear and objective criteria for the myriad of labels that exist in education, whether it be SLI, emotional and behavioural difficulties (EBD), autism, attention deficit hyperactivity disorder (ADHD) and dyslexia, to name but a few. And that, in itself, causes major problems for parents, teachers and other profes-

sionals working in schools, such as EPs and SLTs, and it raises the question as to whether we should be using labels at all if there is not clear agreement about how they should be applied. For example, the discussion in Bishop's paper about 'cognitive referencing' (a mismatch between language and non-verbal skills) would appear to be an area that has the potential for various misunderstandings and misdiagnoses.

According to Bishop, the 'discrepancy model' appears to have been discredited now, and instead it seems that, for a diagnosis to be made, a child only has to achieve some minimum level of non-verbal ability, although the exact level that is required and which tests should be used are, as yet, unspecified. It reminds us of a similar debate that took place in the 1990s in educational psychology (and still now, amongst some) regarding the diagnosis of dyslexia. It is generally considered to have been an unhelpful and damaging debate and it could be argued (Elliott and Gibbs 2008) that if the same amount of time and resources were put into how to intervene with children with reading difficulties rather than on how to make a diagnosis of dyslexia (including whether there should be a 'discrepancy' between literacy and other areas of the curriculum), then we might have considerably fewer children with reading and writing difficulties across the UK. Could the same case be made about the diagnosis of children with unexplained language problems?

Taking this point further, Bishop outlines some arguments for separating those children for whom there is a known cause for the language problems from those that are unexplained (see the discussion on exclusionary criteria). We ask the question: Does it matter? Maybe it does, maybe it does not. We are unsure. However, we are more sure that by expending our limited resources on exploring the different possible reasons for children's language problems, we are inevitably taking away resources from what can be spent on the intervention, i.e.

what to do about it. Bishop writes that the distinction of problems by type or by aetiology is 'very often [. . .] of practical importance in education'. We disagree. We would welcome some practical examples as to when this has been the case, as it is our view that, while it may be important in some cases, it is not true 'very often'.

The problems are there and must be tackled, regardless of the cause. In some respects we argue for the theoretical approach put forward by advocates of the solution-focused method (Rees 2008), namely that more time should be placed looking to resolve the problem rather than spending too much time exploring the problem itself.

Bishop discusses research on the feelings of relief that some children have experienced upon receiving a diagnostic label, especially dyslexia, which is undeniable, but did this relief lead to improved opportunities for the child? Did his/her literacy skills improve? Did the child work harder with additional vigour upon receiving the diagnosis, or did it lead to feelings of helplessness and inevitability about their difficulties that made the child try less and less? In other words, research needs to be carried out looking at these questions, in our view, not whether the diagnostic label brought some relief to the child concerned and/or their parents.

Bishop writes that when applying labels it is not assumed that all children so labelled are the same. We would hope not, however the reality is that this is indeed what happens. While there may be numerous professionals (and academics) who do not believe that children who have the same label are the same, or should be treated the same, there are countless others who do, and this is a problem with the continued blanket use of labels, and one that needs to be tackled (see Lauchlan and Boyle 2007, for further discussion).

The overarching question that we feel should be asked when considering the use of labels is the following: 'Will the label change the child's life for the better?'. If the answer to this question is an emphatic 'yes', then there is little argument that can be made against the use of the label. However, if the answer, as can quite often be the case, is 'well, perhaps, but I'm not sure, actually maybe for this particular child, no', then we must be extremely careful to continue to attach labels in our daily working lives in our respective professions. Let us hope that labels, if deemed necessary, are applied appropriately and always to the benefit of any recipient.

e-mails: [fraser.lauchlan@strath.ac.uk](mailto:fraser.lauchlan@strath.ac.uk); [cboyle7@une.edu.au](mailto:cboyle7@une.edu.au)

## Can any label work for both intervention and research purposes?

Jude Bellair, Sara Clark and Stephanie Lynham

Central London Community Healthcare NHS Trust, London, UK

### Abstract

Discussion of the issues surrounding the current specific language impairment (SLI) label identified another pertinent question: Can any label be useful for both research and intervention purposes? In exploring the relationship between a label's purpose, parameters and terminology, we conclude that no single label is suited to both purposes, but having a clear, workable label for research purposes is vital.

### Main text

The ideas in Dorothy Bishop's article prompted much debate amongst colleagues, the questions raised being both pertinent and central to everyday practice. However, discussions continually reverted to one question not raised: Can any label be useful for both research and intervention purposes? While reflecting our response to this article, our commentary also explores this additional question.

We are speech and language therapists working in Central London who have a component of time allocated to working in specialist speech and language pro-

visions, and who both diagnose and provide intervention to children identified as having SLI. The opinions and ideas stated are our individual views and conclusions, arrived at following discussions with colleagues.

Some questions the article raised were less controversial than others, resulting in unanimous agreement. Yes, we should be concerned about children's language problems; a group of children have unresolved language difficulties that impact on their educational attainment and social relationships. No, we should not abandon diagnostic labels; the positive outcomes of using labels

for intervention and research outweigh the negatives which can be mitigated by our practice. Yes, the medical model is appropriate for unexplained language problems in children; accepting that environmental factors impact on language development, children identified as having SLI are those where purely environmental causes are excluded, meaning language difficulties have a significant 'within child' (biological) component.

The issues around criteria for inclusion in the currently called SLI group were more contentious. It became clear that the purpose of a label influences not only the criteria applied, but also the choice of the label itself. This led to our central question: Is there a label that works for both research and intervention purposes?

Regarding criteria, for both purposes we agreed the requirement for evidence of significant language impairment, including elements of disordered language development or such extreme delay as to be disordered. Ideally, evidence of difficulty with language *learning* would be observed or dynamically assessed. Working predominantly with children exposed to more than one language, we cannot rely on standardized scores, so when making a diagnosis performance on formal testing is interpreted carefully and considered alongside the impact on interactions and access to the curriculum. Having rigid cut-off scores as inclusion or exclusion criteria is not functional for our client population.

However, some criteria important for placement on an intervention pathway were not thought important for research purposes, and vice versa. While for research purposes, excluding or including based on the *cause* of language-learning disorders is important to eliminate variables, this is not necessarily important for allocation to a care pathway. Conversely, whether a child's language-learning difficulties were the *primary* area of difficulty for the child would be important for allocation to care pathways, but not useful for research purposes.

In our view, the presence of additional difficulties such as hearing impairment, learning difficulties or ASD should not bar children from an SLI label, assuming these additional difficulties are excluded as causing the language-learning impairment (while acknowledging research may initially need to be conducted using a restricted group of SLI children). However, for a child with learning difficulty and SLI, identifying the learning impairment as the primary need would affect the choice of intervention offered, and conversely, children who had known causes for their language-learning difficulties, such as Landau-Kleffner or extreme environmental deprivation while not having SLI, may benefit from access to the same care pathway.

When thinking about interventions and care pathways, the descriptive term 'primary language impair-

ment' is useful, as it incorporates children who have language-learning impairments regardless of cause, as long as language learning is their primary need, which reflects current practice. However, as a label, it has limited use for research purposes as it encompasses too broad a group for results to be valid or useful, and is reliant on somewhat subjective decisions based on function. While intervention pathways may be similar for children with language-learning difficulties whether they are idiopathic or not, research cannot be carried out on such a disparate group, and ongoing research in this area is essential.

In conclusion, we believe that keeping the term 'specific language impairment' is the best option, where 'specific' refers to 'idiopathic', 'language' encompasses the idea of 'language learning', and 'impairment' allows for variability in functional impact. By using 'specific' in this way, children with co-occurring difficulties or disorders can still be identified as having SLI. As a label it would be more useful for research purposes than intervention purposes, however having a label that can work for research purposes is of paramount importance. Maintaining the link with previous research into SLI is also essential, and although current research is conducted on clinical populations that are narrower than those we see in practice (i.e. only IQ above 85, or not EAL, etc.), this would be best rectified with more research and repeating successful trials on a broader group of SLI children or those with non-idiopathic language-learning difficulties. Additionally, changing the label carries a risk of children not being referred for assessment and access to specialist services, and the consequent risk to losing current funding particularly at a time of cost savings being required.

The potential negative outcomes of retaining the SLI label are within our control to manage. Instead of using diagnostic labels for care pathways, thereby excluding children without the label from a particular level or type of support, descriptions of a phenotype such as 'primary language impairment' could be used instead. A label, such as SLI, can be applied to an individual's impairment but does not necessarily dictate the support and interventions required: children with SLI need differing types and levels of support. Phenotype descriptions may be more useful when writing care pathways as they group children by presenting needs rather than cause or purely a label.

In recommending retention of the label SLI, we acknowledge the work needed to build consensus within our profession as to exactly what this term means, and also in increasing awareness within other professional groups and the wider community. As a profession we need to become more precise and deliberate in our use

of labels versus descriptions of difficulties. The range of terms in use on electronic media is problematic, and as professionals we need to improve our awareness and ability to guide others in their search for information.

However, we feel that as a profession we are up to these challenges.

e-mails: jbellair@nhs.net, saraclark1@nhs.net and stephanie.lynham@clch.nhs.uk

## Advocating for SLI

Mabel L. Rice

University of Kansas, Lawrence, KS, USA

### Abstract

The label of specific language impairment (SLI) has inspired substantive advances in our knowledge of previously overlooked but clinically (and theoretically) significant language impairments. Advocacy is needed to sustain the scientific gains, do a better job of identifying and providing services for persons with SLI, and build better screening and assessment tools suited for diverse clinical and research purposes.

### Main text

My charge is to provide commentary on the paper by Bishop. I am in general accord with her perspectives and wish to use this opportunity to expand an advocacy for the label of specific language impairment (SLI). I have three main points:

- SLI, a term coined only about 30 years ago (Leonard 1981), has inspired substantive advances in our knowledge of previously overlooked but clinically (and theoretically) significant language impairments.
- As a clinical label SLI has yet to receive widespread adoption in clinical practice, in spite of the great need for it. From toddlers to young adults, the condition is likely to go undetected, untreated and be poorly understood by the general public, teachers and physicians (cf. Bishop's overview).
- Removal of barriers to services for children and adults with SLI requires informed advocacy and the development of accurate and time-efficient methods of identification, as well as population-based studies and continued high-level experimental and longitudinal studies.

The SLI diagnostic category helped change views of typical and atypical language acquisition. Consider that in 1984 Steven Pinker wrote: 'In general, language acquisition is a stubbornly robust process; from what we can tell there is virtually no way to prevent it from happening short of raising a child in a barrel' (Pinker 1984: 29). In contrast, now the National Institute of Deafness and Communicative Disorders (NIDCD) includes research about SLI as a priority area for scientific studies and includes a definition on its website (see

<https://www.nidcd.nih.gov/health/voice/pages/specific-language-impairment.aspx>). This shift in perspective was accomplished by dedicated scientists meeting high empirical standards of validity and replication across studies, evaluating well-motivated and competing theoretical interpretations, carrying out population-based epidemiological studies as well as decades-long longitudinal studies, and introducing genetic and family-based programmes of investigation. In effect, a significant knowledge base has accumulated and provides a foundation for further advances (Leonard 1998).

Let me highlight a few noteworthy advances, with selective, not exhaustive, references:

- Valid estimates of population prevalence in young children reveal a relatively high rate, about 7%, of children with SLI (Tomblin *et al.* 1997).
- For children identified with SLI in a population-based study, speech disorders appear in approximately 5–8% of the children, a much lower overlap than expected (Shriberg *et al.* 1999).
- The relationship between language impairments and nonverbal cognitive abilities is not straightforward—nonverbal cognitive deficits are neither necessary nor sufficient for language impairments (Rice *et al.* 2004, Tomblin *et al.* 1997).
- Empirical advances include new methods of language assessment that meet high standards of sensitivity and specificity (Rice and Wexler 2001, Spaulding *et al.* 2006).
- Language impairments of children with SLI are likely to persist throughout childhood and adolescence (Conti-Ramsden *et al.* 2012, Johnson *et al.* 1999, Rice 2013).

- The grammatical property of finiteness marking in English and other languages is a linguistic requirement likely to pose problems for children with SLI, a finding that informs theories of children's language acquisition and has led to ways to identify children with SLI (Rice 2000, Rice and Wexler 1996), develop theoretically coherent empirical measures of progress toward the adult grammar from toddlers to adolescents (Hadley and Holt 2006, Hadley *et al.* 2014, Rice 2012, 2013, Rispoli *et al.* 2012), differentiate dialectal differences from language disorders (Oetting and McDonald 2001), differentiate children with SLI from children with ADHD (Redmond *et al.* 2011), differentiate bilingualism from SLI (Paradis *et al.* 2008), and identify remarkable strengths as well as limitations in growth trajectories across a very wide age range (causing us to rethink our notions of 'impairment') (Rice 2012, 2013).
- Significant advances in our understanding of causal pathways, with illumination of previously unknown genetic influences as well as clarification of prenatal, perinatal, and environmental contributions (Rice *et al.* 2008, 2009, 2014).

With these remarkable accomplishments in a relatively short time, why are we now debating the value of SLI as a diagnostic category? The dialogue is inspired in part by the editorial decisions of the recent revision of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (2013), compiled by the American Psychiatric Association. DSM-5 serves as an official nosology for mental disorders, meant to be implemented by physicians/clinicians in medical settings. Prominent in the development of the DSM-5 were physicians, psychologists, social workers, nurses, counsellors, epidemiologists, statisticians, neuroscientists and neuropsychologists. The point here is that the vetting process involves diverse professional perspectives.

Communication disorders were considered in the context of neurodevelopmental disorders, including intellectual disabilities, autism spectrum disorder, attention deficit hyperactivity disorder, specific learning disorder and motor disorders. Because the category of SLI met rigorous scientific standards after more than a year of internal editorial reviews, it was included in the nosology that proceeded to the phase of public comments, where it received mixed reviews but not as heatedly mixed as for other proposed categories. As it turned out, the diagnostic language categories of DSM-5 were relevant to controversial changes in the diagnostic category of autism spectrum disorders. Ultimately, a new category of social communication disorder (SCD) was coined, for which, as Bishop observes, reliable and valid assessments are lacking. In short, the empirically well-

researched category of SLI was not included and the newly coined category of SCD, with a minimal research base, was included.

My conclusion is that the DSM-5 outcome does not constitute reason to step away from the enormous scientific gains accrued from studies of SLI as currently defined, especially in a world where, as Bishop notes, the term has generated almost 20 000 citations in the scientific literature, an impact that will require a long time for an alternative label to achieve. In the meantime, children (and families) in need of identification remain at high risk of being undetected. One potentially helpful legacy of the DSM-5 is the notion of 'specifiers', used, for example, to clarify subgroups within the category, 'Autism Spectrum Disorder'. For example, one 'specifier' is whether ASD appears with or without accompanying language impairment; another is whether ASD appears with or without accompanying intellectual impairment. DSM-5 kept the broadly inclusive term 'Language Disorders' (LD) without specifiers. One potentially valuable approach would be to consider SLI as a 'specifier' or subgroup of children identified with language disorders, an approach in need of thoughtful consideration. Another lesson from the DSM-5 experience is the need to recognize that among the barriers to utilization of this diagnostic category is the need for cost-effective, time-efficient screening tools for SLI that can be used in doctors' and psychologists' offices, large population-based epidemiological or genetic studies, and in the daily activities of school-based practitioners where there are many cost-related pressures to reduce the number of children identified in need of services. Some progress has been made, in the form of 10-min grammar assessments in the relatively narrow age range of 3–9 years (Rice and Wexler), now available free online (see [www2.ku.edu/~cldp/MabelRice/](http://www2.ku.edu/~cldp/MabelRice/)) and found to show high heritability in twin studies (Bishop *et al.* 2005). Yet much more is needed. Ultimately, parental access to screening tools could be a key asset for breaking down the barriers to access to clinical services.

All things considered, the risk of advocacy for SLI seems very small compared with the risk of derailing a very productive line of scientific enquiry with high relevance for clinical services and the likelihood that, without the label, services for individuals with SLI will be reduced even further.

In the interest of full disclosure, I served as an advisor to the Neurodevelopmental Disorders Work Group for DSM-5, as reported in the manual. In that capacity I worked on a panel charged with the development of the categories for communication disorders. Advisors signed confidentiality agreements as part of the process.

e-mail: [mabel@ku.edu](mailto:mabel@ku.edu)

## The SLI construct is a crucial link to the past and a bridge to the future

Catherine L. Taylor

Telethon Kids Institute, University of Western Australia, Perth, WA, Australia

### Abstract

Language impairment constructs are not the province of one discipline, profession, political portfolio, service system or programme of research. What brings different perspectives together is the shared purpose of improving language outcomes and life choices and opportunities for children with language impairments. We will need to define and measure language impairments differently for different purposes and in ways that foster the exchange of knowledge.

### Main text

It is paramount that we have agreed taxonomies and nomenclature to describe children with language impairments. It is clear from the issues that Bishop discusses that this will not be a trivial exercise. She invites us to think about the evidence and counter-evidence for current language impairment terms and constructs, with a main focus on SLI. This is a valuable exercise for proponents and opponents of the SLI construct. Bishop is not opposed to the term 'specific language impairment' (SLI) or the SLI construct and points out that it is a widely used term even though it is not understood well enough. SLI describes a prevalent developmental disability that is under-identified in the general population. Changing the term 'SLI' is unlikely to resolve this issue, which is one of measurement rather than nomenclature.

Bishop lays out the measurement challenges for us very clearly. Not the least of these challenges is penetrating conventional disciplinary boundaries and integrating across them. She provides an excellent example of the divide between health and education, that unless bridged, leaves children with SLI under-identified and under-served. In Australia, the Australian Early Development Index (AEDI) is a new and potentially powerful lever for bridging this divide. Introduced nationwide in 2009, the AEDI is a population-wide measure of child development in the first year of formal school. It covers five developmental domains: physical health and well-being, social competence, emotional maturity, language and cognitive skills, and communication skills and general knowledge. It is completed by a teacher on individual children, but the data are not used to identify individuals. Rather, the data are aggregated at the community level to show the proportion of children who are developmentally on track, at risk and vulnerable. This is a radically different approach to monitoring children's development through screening for clinical assessment

and clinical services. The AEDI is not a substitute for speech pathology assessment and speech pathology services: it has a different purpose. The speech pathology profession has an increasing public health role and this will require us to embrace different ways of thinking about children with vulnerable language development. Our clinical services are overstretched and social gradients in access to these services mean that the families who need the services most are statistically least likely to access them. AEDI results for vulnerable language and cognitive skills revealed a clear social gradient, with the highest proportion (18.3%) of vulnerable children living in the most disadvantaged communities and the smallest proportion of vulnerable children (5.4%) living in the least disadvantaged communities. However, extrapolated to the entire Australian population of 250 000 five-year-olds, this equates to 9150 vulnerable children living in communities in the bottom (i.e., most disadvantaged) quintile of socio-economic area disadvantage and 17 350 vulnerable children spread across the other four quintiles of socio-economic area disadvantage. These and other data support a proportionate universalism approach to policies and programmes for children with vulnerable language and cognitive skills (Christensen *et al.* 2014, Taylor *et al.* 2013a). Proportionate universalism is provision of services for all, delivered on a scale and with an intensity proportionate to the level of disadvantage (Marmot 2010). The logic, as illustrated in the AEDI example, is that policies and programmes targeting only the most disadvantaged groups will miss large numbers of vulnerable children.

Advances in knowledge about human development have widened the lens through which we view individual differences in children's language development. Invariably, consideration of the full range of individual differences in children's language abilities makes it difficult to draw boundaries between typical and atypical



development. This challenge is not confined to childhood and Bishop draws lessons from chronic diseases such as hypertension and obesity to illustrate this. Perhaps the greatest challenge lies in the temporal dimension of health. As contemporary definitions of health evolve to include health trajectories and transitions, the boundaries between health and disease are becoming even less clear-cut.

Contemporary definitions of language impairment will also need to describe patterns of stability, change, improvement and decline in children's language development. Increasingly childhood is front and centre of public health policy (Taylor *et al.* 2013b). Bishop encourages us to think beyond the language domain to the overarching goal of childhood which is to develop human capability, defined as our capacity to participate economically, socially and civically and to live lives we value (Zubrick *et al.* 2009). The new DisabilityCare Australia national insurance scheme emphasizes the importance of a person's abilities, interests, goals and aspirations in the provision of support services for people with disabilities (Disabilitycare Australia 2013).

Bishop poses the question of whether to keep the term SLI or to change it. From her article we know that the definition of SLI is not fixed and that it has evolved with the science. She illustrates this using the example of how the criterion for nonverbal ability has changed from an outmoded discrepancy criterion (i.e., language ability substantially less than nonverbal ability) to the criterion that nonverbal ability that is broadly within the normal range. She points out that the use of the term 'specific' to mean 'exclusive' is at odds with the evidence that SLI can co-occur with developmental vulnerabilities in other domains (e.g., social-emotional development). Rather than changing the term SLI, the definition can be updated to include children whose

most conspicuous, but not their only, developmental difference is in the language domain. This does mean that the term 'specific language impairment' cannot be interpreted literally; however, this is also true for other developmental impairments, such as cerebral palsy. Perhaps, somewhat surprisingly, cerebral palsy is a qualitative trait beset with similar definitional issues to SLI. Like SLI, it is an umbrella term for a heterogeneous group of impairments, in this case motor impairments, with largely uncharted aetiologies. The risk factors for SLI, and most cases of cerebral palsy, are essentially unremarkable, in that most children with these risk factors (i.e., preterm birth, intrauterine growth restriction) have normal development. As we confront definitional challenges in relation to language impairments, we can learn from how these challenges are being met in relation to other developmental disorders. For example, the term 'cerebral palsy', while not perfect, has been kept because it provides an important link to the past. Like SLI, the definition of cerebral palsy has been updated as new evidence has emerged (Stanley *et al.* 2000).

On balance, there is a strong argument for keeping the term SLI (Rice 2009), and as Bishop suggests, updating the definition as our knowledge advances. Keeping the term SLI maintains our link to the past and is a bridge to the future. It is paramount that children, whose most conspicuous individual difference is in the domain of language, are conspicuous in our policies and practice. Research reported in this publication was supported by the National Institute On Deafness and Other Communication Disorders of the National Institutes of Health under Award Number R01DC005226. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

e-mail: Cate.Taylor@telethonkids.org.au

## What should we call children who struggle to talk? Taking a developmental, global perspective on diagnostic labels—reflections on Bishop

Gina Conti-Ramsden

School of Psychological Sciences, University of Manchester, Manchester, UK

### Abstract

This commentary takes four alternative diagnostic labels discussed by Bishop and highlights issues that arise from each of the choices. It reflects on the need to have a global, developmental perspective in tackling complex issues of diagnosis and terminology and in moving the field forward.

### Main text

Language learning can be challenging for some children at different times in their lives. Despite the recognized importance of language to children's healthy develop-

ment, professionals and academics working in speech and language therapy, psychology and education have struggled to find a common language to refer to these children. Currently, we do not have a label that fosters information exchange and collaboration across disciplines

and across different stages of children's development. But there is more to this situation. As professionals and academics, we find ourselves dissatisfied and in turmoil: there is terminological confusion, a long list of different labels and different definitions. In terms of diagnosis and terminology we are in the eye of the storm.

Thus, Bishop's article is a particularly welcomed, timely contribution. It provides a very useful, insightful and systematic review of the issues. Bishop not only maps out where we are at but also how we may move forward. In terms of diagnostic labels, in essence, she puts four options for consideration:

- Retain specific language impairment (SLI) and adopt laxer criteria.
- Adopt the diagnostic label PLI.
- Adopt the diagnostic label developmental language disorders (DLD).
- Adopt the diagnostic label language learning impairments (LLI).

Bishop presents a considered discussion of her proposed diagnostic label alternatives. What other considerations may we take into account? In terms of the diagnostic label SLI there are further issues that counter the benefits of retention. First, it is difficult to foster change of criteria for an existing diagnostic label (SLI) particularly when another label is in use and has already taken that semantic space, so to speak. I am referring to the diagnostic label of language impairment (LI) as there are studies that specifically differentiate SLI from LI on the basis of performance IQ criteria being more lax for LI (Weismer *et al.* 2000). Second, Bishop is right in pointing out that SLI is by far the most common label used in academic settings. However, I would like to add the proviso 'in English'. An examination of number of returns for terms on Google Scholar search for Spanish labels suggests a different picture. In Spanish LI (*Trastornos del Lenguaje*) is by far the most common label with 68 000 hits, LLI (*Trastornos del Aprendizaje del Lenguaje*) is next with 36 000 hits; and SLI (*Trastornos Específicos del Lenguaje*) produces 16 000 hits. Taking into consideration professionals and academics working with languages other than English affords a more global perspective on the terminological and diagnostic issues we are facing.

There is also the issue of labels that highlight a particular feature, e.g. 'primary' or 'developmental'. The difficulties with the qualifier 'specific' have been well rehearsed so I will not repeat them here. But how about the qualifier 'primary'? I don't think the change from specific to primary gets rid of enough unwarranted implications. The term 'primary language impairment' does not foster a global, developmental way forward. By global this time I mean taking into consideration the perspectives of other disciplines and services.

Take Bishop's case of 8-year-old George. This time George had his first point of contact with clinical psychological services given his temper tantrums as a young pre-schooler, his lack of regular sleeping patterns and his aggression towards his baby sister. The psychologist in consultation with the psychiatrist has diagnosed him as having emotional behavioural difficulties (EBD). At school entry his teacher notices he has a weak vocabulary and he seems to have a hard time following verbal instructions. So she asks her speech and language therapy colleague to undertake an assessment. The diagnosis comes back: George has a primary language impairment. This vignette illustrates some further tensions that may be worth considering. Should we infer that George's primary problem is his language and his EBD is secondary to this previously unidentified difficulty? If the evidence suggests George has co-morbid PLI and EBD, what is the use of the 'primary' in the PLI label? One could say that we are identifying a language impairment that is not accounted for by bilingualism so the term PLI is still informative. Would we change our minds if I told you George's mother speaks only Spanish in the home although her English is virtually native-like?

The term 'primary language impairment' may also invite a static view of language difficulties across development. Do adolescents who have received speech therapy throughout their childhood and elementary schooling who struggle to understand long, complex sentences in everyday rapid conversations with peers have a primary language problem at this stage in their development? Evidence from the Manchester Language Study would suggest this is not the case, hence our terminology 'with a history of SLI' which, in all frankness, is a mouthful (Conti-Ramsden *et al.* 2012).

Leaving aside the issues of the term 'disorder' that, as Bishop suggests, could be replaced with 'impairment', how about the label developmental language disorder? In this label we have 'developmental' clearly highlighted. But does 'developmental' here mean what we have been talking about above? Bishop underlines the difficulty of the same term having different meanings in our field and this I would argue is one of the drawbacks for the diagnostic label developmental language disorder. In this context, the term 'developmental' is usually interpreted as 'not acquired' and 'in childhood'. This has consequences for young people with language impairment in adolescence and young adulthood. Indeed, one of the challenges in our field is the provision of language support for secondary school pupils and for post-school-age young people. They are at risk of falling off the radar from childhood and receiving child services to their official classification as 'adults' and being eligible to access adult services.

Where does this leave us? On the one hand we have the proposal from Bishop for LLI and the proposal from

Reilly *et al.* (2014) for LI. Each has its merits that have been described by the authors. I will not add to these but instead underline the need for due process in undertaking further discussions to reach agreement. I would join Reilly and colleagues in calling for an International Consensus Panel; an international and global panel that includes voices from different languages, and the voices of those affected and their families. I would add to the remit of the panel and all those working with language impairment Bishop's call for enhancing positive aspects of development. We need to discuss the inclusion of different areas of functioning in our assessments. We require this information in order to identify the strengths of children and young people with language (learning) impairments. In this respect, we could take a page from the field of autism. If asked, academics and professionals working with autism can tell us what are the

most common strengths (Baron-Cohen and Belmonte 2005). Could we answer this question now, today for SLI?

We cannot go on with the current situation. Our mission is much more than reaching agreement on an appropriate label. We are ready to have an open discussion and harness existing goodwill and energy and not only tackle complex issues of diagnosis and terminology but also move the field forward. We can all live with what Bishop and others have highlighted: labels have a necessary place in diagnostic evaluation, but they never tell the whole story.

By a name I know not how to tell thee who I am.

(William Shakespeare, *Romeo and Juliet*, Act 2, Scene 2)

e-mail: gina.conti-ramsdén@manchester.ac.uk

## Changing labels for a concept in change

Kristina Hansson, Olof Sandgren and Birgitta Sahlén

Department of Logopedics, Phoniatrics, and Audiology, Lund University, Lund, Sweden

### Abstract

In this commentary we reflect on current labels and criteria for child language impairment from a Swedish perspective. We call for a new label highlighting the developmental, changeable and dynamic characteristics of the impairment and discuss implications for diagnosis, assessment and research. Conceptual coherence will promote the professional identity and status necessary for much needed communicability.

### Main text

First of all, this initiative is laudable and we hope that this issue of the journal will mark an important point within research and clinical management of child language impairments. The arguments for diagnosing are strong and we need a research label to match the diagnosis.

Descriptions of a child's strengths and weaknesses and/or an identification of their 'needs' are not sufficient but provide the necessary foundation for the diagnosis. We agree with Bishop that the lack of explanation of the problems of children with language impairment is not a reason for not having a label. Labels and diagnoses facilitate communication with other professionals, families and policy-makers but require acknowledgment of the large amount of heterogeneity that is characteristic of all neurodevelopmental conditions. Within the field of SLI this raises the question of the specificity of the impairment, an issue that has for a long time caused debate among child language researchers in our country. The strong influence of Stark and Tallal (1981) has been challenged by almost 35 years' of intense exploration of

the neurobiological, genetic and social underpinnings of child language impairments. This has altered the picture and today we prefer the label 'language impairment', which, in our view, shows potential to better unite research and clinical interests.

Language impairment is elusive in the sense that the constellation of strengths and weaknesses within a child is not static but changes with both time and context. We cannot predict what problems or skills will persist or even emerge. We need to remind ourselves that language processing involves interaction in two senses: an interaction between cognition, language and sensorimotor systems within the individual as well as between individuals involved in interpersonal communication. A deficient or reduced functioning in any of these systems may result in limitations in communicative choices and use of compensatory strategies. This complex interaction of systems within and between individuals generates unique effects for each individual and for each communicative event. This also opens up the possibility for the emergence of new skills and abilities through

compensatory adaptation and choices (Perkins 2007). The highly contextual nature of language processing calls into question our standardized assessment procedures. The influence of non-verbal aspects of the communicative setting, e.g. the partner's gaze, gestures and voice characteristics, are often overlooked. We have recently shown that both the examiner's speech rate and voice quality interact in interesting ways with item complexity and cognitive factors to affect children's performance in a language comprehension test (Haake *et al.* 2014, Lyberg-Åhlander *et al.* 2014). Applying the framework of the International Classification of Functioning, Disability and Health (ICF) when deciding on a new label to be used for both research and clinical purposes would be useful. This will give clinicians a better understanding of the functional consequences for the affected child and will help determine appropriate goals for intervention and research (McLeod and Bleile 2004).

Similarly to colleagues in English-speaking countries, diagnoses available for Swedish clinicians, described within the ICD-10, do not map neatly onto the research label. Whereas SLI gives the impression of enabling clear-cut distinctions between affected and unaffected children, clinicians struggle to find similar delineations. This results in frustration from researchers hoping to recruit participants, and frustration from clinicians turning to research in search of answers to manage their everyday caseloads. Due to lack of alternatives, clinicians agree on less than optimal diagnostic codes, with F80.2B (mixed receptive-expressive language disorder) providing the closest match for the research label SLI.

As for the question of cognitive referencing, most research in our country (articles published during the last 10 years) apply a cut-off for non-verbal IQ at 70. This cut-off point has never been officially discussed in the research community, only gradually adopted by researchers.

Support for the convention is provided by results showing similar benefits of intervention for children with language impairment with IQ between 70 and 80 and those above 80 (e.g., Tomblin 2008).

In Sweden, phonological difficulties have been considered part of language impairment since the early 1980s (Nettelbladt 1983). At least at pre-school age, children with grammatical/lexical problems almost invariably also present with some degree and type of phonological difficulties. There seems to be less agree-

ment on including social communicative problems in language impairment. According to our experience, individuals with such deficits emerging from structural language problems (i.e., problems at different levels of language production and comprehension) qualify for inclusion even with apparently restored language abilities. Thus, it is our opinion that children who have not had any structural problems should not be included.

A growing body of research points to co-occurrence of language impairment and other conditions. In our own research comparing children with mild to moderate sensorineural hearing impairment and children with language impairment (e.g., Sahlén and Hansson 2006, Sandgren *et al.* 2013) the findings are consistent with those of other authors (e.g., Briscoe *et al.* 2001, Gilbertson and Kamhi 1995). A considerable proportion of children with hearing impairment have similar problems as children with language impairment, but their problems are generally not as pervasive and persistent. The lack of proportionality between degree of hearing impairment and degree of language deficits suggests that hearing and language impairments co-occur.

We should recognize and take pride in the contributions of SLI theory to the research on language impairments in a range of disability groups. Although much remains to be explained, the development of SLI theory has informed us on both typical and atypical language development, and how language relates to and interacts with other cognitive and social skills. The urge to increase the theoretical and methodological depth should not prevent us from taking a stance on the label and diagnostic criteria and to advance the field.

The time has come for a new label and a golden standard for definition, criteria and assessment of children with language impairment. Conceptual coherence will enable and facilitate communication between researchers, clinicians, families, educational systems and policy-makers. This will strengthen the identity of researchers and clinicians working in the field of child language disorders. This, in turn, will better the chances of communicating the message. In our opinion, language learning impairment and developmental language disorder are both likely to accomplish these objectives since the labels highlight the dynamic, changeable nature of the condition.

e-mails: kristina.hansson@med.lu.se, olof.sandgren@med.lu.se and birgitta.sahlen@med.lu.se

# What should we call children with unexplained language difficulties? A practical perspective

Ann Clark†\* and Glenn Carter†

\*Queen Margaret University, Musselburgh, UK

†NHS Forth Valley, UK

## Abstract

This commentary reflects on Bishop's discussion of possible diagnostic terms for children with unexplained language problems. We discuss each of her four proposed terms in turn, commenting on their potential use in clinical and educational contexts by speech and language therapists and other professionals.

## Main text

Bishop's article is a timely and welcome discussion, gathering together the main issues around the terminology used to describe children who have unexplained language problems.

There are many UK-wide examples of excellent SLT practice working with children with unexplained language problems in increasingly challenging professional environments, often with reduced resources. Although SLTs appear to have a consistent approach to interventions with children with unexplained language problems, there is no consistent practice either in what we call these children or in the pathways to their diagnosis. In our survey of SLTs working in Scotland (Clark *et al.* 2013), we found 85% used 'specific language impairment' in line with Bishop's finding with Google Scholar. However, although SLI is the term used most often by SLTs, 45% also used 'language disorder', 27% 'language delay' and 21% 'specific language disorder'. This adds further weight to Bishop's view that the current system is in mayhem. Some SLTs report they have moved away from the term SLI when discussing these difficulties with parents and education colleagues and use it only with SLT colleagues.

In terms of pathways to diagnosis, we have increasingly moved away from traditional exclusionary criteria and towards measuring and defining inclusionary criteria that best represent difficulties these children present with. In the survey, 6% said diagnosis was a joint process between SLTs and educational psychologists, 12% said this took place between SLTs and specialist language teachers. However, 82% said there was either no official pathway of diagnosis (59%) or they did not know/were not sure what it was (23%). Despite the fact, as Bishop discusses, that cognitive referencing is now largely discredited, this information can be slow to disseminate onto the ground. SLTs may be reluctant to change their practice because there has been no clear message about

alternative and evidence-based pathways in which to make a diagnosis. However, one thing is clear. SLTs have a key role in diagnosis and we need sharper tools to achieve this, while working with education colleagues to identify the impact for each child.

Bishop presents a vignette to illustrate her arguments. At present it is difficult to give George a diagnosis that is consistently understood or valued by the team around him including his parents. The lack of a consistent, known label is likely to lead to confusion and indeed anger for George's parents who are trying to come to terms with his difficulties, but are unable to qualify information with a consistent message from professionals and the internet. The internet is the most powerful tool parents, clinicians and young people have for accessing information that can inform and help them understand the nature of these difficulties. Without agreement on a label, accessing this information is frustrating or worse misleading. One of the positive consequences of diagnostic labels, to which Bishop alludes, warrants further comment. That is, the fact that a 'reason' or label for a child's difficulties can help to 'remove the blame from the child'. This will be particularly salient for George as he gets older. Anecdotal evidence and experience working with teenagers and adults shows that they feel disempowered by not understanding the nature of their difficulty and believe the feedback from their peers or others that they are 'stupid' or 'useless'. A clear diagnosis and label would help to reduce George's anxiety.

Bishop presents four terms as potential candidates to describe unexplained language problems, economically and persuasively outlining their pros and cons, as well as possible ways forward. Here, we hope to add to the debate by discussing some other issues around these four suggestions in the context of SLT practice.

With respect to SLI, the fact that there are so many different labels used in the literature and in practice suggests that this term has not met the mark. One

suggestion is to change the understood meaning of 'specific' to 'idiopathic'. While keeping the term SLI is appealing, as it is so widely used it would be challenging, and arguably it is too late, to redefine a term which, for so long, has meant something different.

Another challenge is differentiating between children who may have transient language difficulties and those who have an atypical/disordered language profile. Transient language difficulties is a term that well describes children with delayed language presentation that responds to generalized language interventions such as vocabulary development or narrative techniques. One possibility would be to hold onto SLI for the small group of children who actually have very specific difficulties and further build on the term 'transient language difficulties' for children who have delayed language difficulties related to environmental deprivation, for example. We would only know which group a child falls into after we have seen how they respond to intervention. Reilly *et al.* (2014) recommend waiting a minimum of a year before making a diagnosis, which seems a sensible guideline.

Moving on to the term 'primary language impairment', 'primary' has the advantage of narrowing down 'language impairment' while neatly avoiding the problems of 'specific'. However, 'primary' could lead to confusion with parents and education staff as it potentially implies these difficulties are relevant to children who are of 'primary' school age. It excludes the reality that this is a developmental difficulty, which for the majority of affected children first manifests in the early years and in many cases continues into adolescence.

'Language learning impairment' is the most education friendly term suggested by Bishop. A benefit of this term is that it ties 'language' with 'learning' to emphasize the impact of these difficulties on educational success. One potential problem is that 'learning' may suggest that difficulties are associated with formal learning at school only, rather than language learning in other contexts as well.

Considering the term 'developmental language disorder', the addition 'developmental' to the DSM-V term 'Language Disorder' is helpful, as it focuses on the congenital aspect of these difficulties. Within the context of education colleagues it is still useful within the early and primary school years. It may be more problematic as adolescence approaches. However, adults with 'developmental dyslexia' diagnosis commonly drop the 'developmental' and we perhaps need to take a pragmatic approach in adopting a term that reflects at what stage we most commonly provide support.

When we weigh up Bishop's arguments about the positive and negative consequences of a consistent label, we are in absolute agreement with Bishop's statement that 'labels can have negative consequences, but the consequence of avoiding labels can we worse'.

Where do we go from here? We need an urgent, strategic and international debate to come to an informed and ideally a consensus decision on what term we adopt. It needs to be precise enough to describe the difficulties these children face and understandable to those outside of our profession. However, that said, no matter what we call it, we need to use the term to increase awareness of the difficulties faced by these children. If we can do that and the profile is high enough, we can help the general population attach meaning to a particular term, as we have seen with autism spectrum disorder. Then we will be in a much stronger position to campaign for resources to support these children and for research funding to increase our knowledge of both underlying causes and effective interventions. The adopted term needs to be integrated into SLT pre- and post-registration training, as well into training of education staff including educational psychologists.

This debate is timely, needed and welcome. Let us continue with the momentum we now have and aim to ensure we will not be having the same discussion 10 years from now.

e-mails: [aclark@qmu.ac.uk](mailto:aclark@qmu.ac.uk) and [glenn.carter@nhs.net](mailto:glenn.carter@nhs.net)

## Terminology mayhem: why it matters—the ramifications for parents and families

Alison Hüneke and Linda Lascelles

Afasic, UK

### Abstract

Parents take the view that the term 'SLI' has not been a successful diagnostic label. Its lack of credibility and market recognition has made it vulnerable to political and economic pressures. Parents would welcome a term that helps ensure their children's difficulties are recognized, taken seriously and adequately supported. Alternatives are briefly considered and improvements suggested.

### Main text

Afasic is the UK charity representing parents of children who might be described as having SLI as well as other forms of speech and language difficulty. As such, we are well placed to reflect parents' views about diagnostic terms.

Any debate about SLI must take account of the prevailing political and social context. Until comparatively recently, SLI was generally regarded as a relatively rare condition requiring a high level of specialist intervention; however in recent years there has been more emphasis on the need for a 'mass intervention' approach to address the substantial minority of children now recognized to have what has more frequently come to be called 'speech language and communication needs' (SLCN).

Why this shift in how language difficulties are perceived? Firstly, the focus on underachievement among young people from low socioeconomic backgrounds has identified speech and language difficulties in the early years as one of the main causative factors. Secondly, financial constraints imposed on the NHS have meant considerable cuts to speech and language therapy services, including the loss of many specialist therapists, and a shift away from personalized therapy towards generalized, low-dosage packages of support, often delivered by early years or support staff.

However, the use of ordinary English words in terms such as SLI or language delay/disorder has probably not helped either. It is hard to imagine such a dramatic change happening to a more 'medical' sounding label, such as autism or ADHD. Even some medical professionals are struggling. Paediatricians, for instance, increasingly seem to consider SLI to be an 'educational' issue rather than a medical condition.

Another issue is that the underlying concept does not really resonate. We seem to be hardwired to assume that young children will learn to talk in due course, and there do not seem to be enough children with visibly serious but unexplained problems to change this perception.

Clearly, then, SLI has not been a very successful term. Both Bishop and Reilly *et al.* (2014) argue that it is not helpful to retain it as it is currently understood. Their view is that SLI cannot be distinguished clearly from non-specific language impairment, which they suggest has in the past been regarded as less serious. They argue that, in fact, children with low non-verbal IQ respond equally well to speech and language therapy and have similarly poor, or in some cases even worse, adult outcomes. Bishop also adds that the term 'language disorder' can be misleading as it may be interpreted as a more severe condition than a broader delay whereas the evidence points to a much better prognosis.

Parents would argue that this is precisely the point. They are happy to concede that, compared with many

other disabilities, their child's difficulty is relatively mild. The difference is that, given the right support, these children have the potential to do as well as their non-impaired peers, achieving good GCSEs, securing meaningful employment and even going on to university.

The authors of the lead articles in this special issue may take the view that removing the distinction between specific and non-specific language impairment will mean that both groups of children receive the higher level of help that parents of children with SLI currently (sometimes) secure. This is optimistic. In the current climate, where both education and health services are reluctant to fund speech and language therapy, there is a high risk that they will instead offer only a very basic level of support to everyone, with the result that the concept of language impairment as a specific need will effectively disappear, and instead be subsumed into general low ability/mild learning difficulty.

Nevertheless, it is possible that all these concerns could be addressed by the adoption of a more viable alternative label. Bishop does suggest a number of possibilities, none of which is likely to be any more successful than SLI has been. Of the various options, parents would probably favour the term 'disorder', which, they feel, indicates a specific problem. We recently consulted a small group of parents about the term 'language learning impairment', but they felt it implied a learning difficulty and would be equated with low ability.

The best option would be something like '(developmental) dysphasia': it is clearly a medical term; it equates SLI with other specific learning difficulties such as dyslexia and dyspraxia; and it meets the 'Google test' outlined by Bishop. It is also the standard term in other European countries, including France.

An alternative option, as Bishop suggests, is to revise the definition of language impairment. Criteria that depend on language scores require children to have a full speech and language therapy assessment, and only a very small number do so. Classifying it instead in terms of specific abnormalities in children's language would have a number of advantages:

- It would be easier for teachers and other non-specialists to recognize.
- It could also be applied to brighter children who may be struggling with some aspect of comprehension or expressive language, but whose scores are too high to meet current criteria. Their inclusion would also, as with dyslexia, help to shift the perception of the condition more positively.
- It would make it easier to identify children with social communication disorders who often score quite well on formal language assessments and so struggle to have their needs recognized and met.

- The identifying characteristics could be adapted for a range of ages. This would help to remove the perception that language deficits relate solely to a difficulty with the basic language skills young children normally acquire during their pre-school years and raise awareness that they can affect people of any age.

Initially, parents often worry that having a label might adversely affect their children as they grow up, but they do welcome something that helps them understand their children's difficulties and validates their concerns. What they would like, above all, is a diagnostic label that other people recognize and understand, and which delivers the help their children need.

e-mails: [hlmgr@afasic.org.uk](mailto:hlmgr@afasic.org.uk) and [lindal@afasic.org.uk](mailto:lindal@afasic.org.uk)

## Getting behind the label: practitioners' points of view

Marion Strudwick†\* and Ann Bauer†

\*Parent advocate SOS!SEN, the special needs helpline

†Head of Language Resource, mainstream secondary school

### Abstract

Dorothy Bishop's article concerning the labelling of language impairments is discussed in the context of educational provision. We discuss labelling from our perspectives as parent advocate and specialist teacher. We support the need for labels and for a more universal definition of terms. We suggest the label becomes a starting point to describe the child's language needs within a holistic profile.

### Main text

We welcome the debate on precise labelling of speech and language needs. Labels have a use as they provide a reference to need, in this case in relation to speech and language, and also a foundation for provision, 'we could then gather evidence to determine which children actually benefit from support and services' (Bishop). They are also a basis upon which specialist teaching, therapy and mainstream teaching can develop (McCartney *et al.* 2009: 80–90). The name attached to this need is significant with Bishop explaining the possible impacts on pupils' education arising from attitudes towards the condition. Reilly *et al.* go further in suggesting cut-off data to form criteria for inclusion into whatever label is chosen. We hesitate about the use of cut-off data and argue that the child's language needs should be considered in the context of the whole child's profile.

'Language impairment' (LI) (Reilly *et al.* 2014) or 'language learning impairment' (LLI) (Bishop) are both acceptable titles and we welcome Bishop's warning that the label is not the construct. We contend that labels are open to misunderstanding and misinterpretation by some professionals. In our experience, misinterpretation leads to inappropriate provision for an individual child, whether determined within school, local authority or special educational needs tribunal. Therefore, any universal label should have enough depth to be understood by all.

We have experienced the difficulties facing those determining a child's provision to understand the implications and differences in terminology relating to impairments described variously as 'delayed', 'disordered', 'difficulties', 'needs' (Bishop). For instance, a teacher describing all pupils as having 'individual needs' gives this as a reason why a pupil's language 'needs', described in a statement of SEN, do not need to be addressed differently, or a tribunal member claiming all speech and language therapists have their own interpretation of what is disordered and what is delayed. This can have serious consequences for the outcomes for the child (Bishop) if it leads to failure to address the impairment.

We suggest that either LI or LLI are valid labels, but if a child's needs are to be fully understood and met, the label is just the starting point. The label is not necessarily helpful unless two things are addressed: (1) the nature of the impairment(s); and (2) the whole profile of the child covering the range of needs, how they impact upon each other and the holistic outcome. Bishop shows there are very few pupils who have language impairment as their only special educational need.

We contend that the broad label 'language impairment' is only useful if the nature of the impairment is clearly set out to indicate whether the language is delayed, disordered or both, whether it relates to fundamentals such as pragmatics, semantics, auditory processing, short-term memory or combinations of difficulties. The language impairment should also be set out in



the context of the child's developmental history as well as other defined needs, for instance cognition, attainment, emotional and sensory. Billington (2000: 111) cites Donna Williams' description of her own emotional shutdown when sensory overload became too stressful.

The difficulty of a label without qualification is that a pupil with co-morbid needs may have one need addressed at the expense of another, without considering the impact of one upon another, e.g. a pupil with language impairment may also have an autism spectrum condition (ASC) and dyslexia. In this case the pupil *may* require an integrated approach using a separate table, privacy screen, scaffolded support for work to be undertaken, including vocabulary cues, and access to a laptop and dyslexia-friendly programmes such as 'Texthelp' in order to succeed at a given task. If this pupil was labelled primarily as having language impairment, or dyslexia (another contentious term), or ASC then the pupil may not be given a suitably integrated approach to learning, as Reilly *et al.* (2014: 36) state 'the degree to which the child's LI would be the focus for intervention and the intervention approaches chosen, would vary depending on the individuals' profile and the holistic needs of the child'. We have to be careful to avoid fragmented provision by prioritization.

We suggest that by constructing a holistic picture of the child, of which the language impairment is part, we are more likely to lead to adequate provision being made for the pupil. This avoids the idea of a main presenting need that can avoid meeting the full profile of needs of a child, e.g. the temptation to send a pupil, who on usual standardized testing appears to have moderate learning difficulties (MLD), to what is primarily an MLD school could be inappropriate if that pupil also presents with significant language impairment which may have affected his/her attainment on some cognitive tests.

In conclusion, we support the view that a universally understood term for speech and language impairments/needs/difficulties/delays/disorders is overdue. The variety of language impairments and their presentation either as part of a medical condition, or as a co-morbid condition, or as acquired or inherited suggests that we either choose to develop an inclusionary—with an exclusionary corollary—list of criteria or that we use it as a signifier of details to follow. We argue that any label of language impairment should carry with it a clear language profile of the child in his/her educational and developmental context. The new draft code of practice (2013), which is due to take effect in September 2014, makes the 'key requirement' that educational establishments:

**must:**

- use their best endeavours to ensure that the necessary provision is made for any individual who has SEN;

[ . . . ] This means provision that goes beyond the differentiated approaches and learning arrangements normally provided. [ . . . ] It may take the form of additional support from within the setting or require the involvement of specialist staff or support services. (Department for Education (DfE) 2013: 58–59)

'Necessary provision' requires clear understanding of need. A label will only be as good as its meaning, otherwise it becomes packaging rather than the contents.  
e-mails: marions@sossen.org.uk and abstage@yahoo.co.uk

## References

- AMERICAN PSYCHIATRIC ASSOCIATION, 2013, *Diagnostic and Statistical Manual of Mental Disorders—Fifth Edition (DSM 5)* (American Psychiatric Association).
- BARON-COHEN, S. and BELMONTE, M. K., 2005, Autism: a window onto the development of the social and the analytic brain. *Annual Review of Neuroscience*, **28**, 109–126.
- BILLINGTON, T., 2000, *Separating, Losing and Excluding Children* (London: Routledge /Falmer).
- BISHOP, D. V. M., ADAMS, C. V. and NORBURY, C. F., 2005, Distinct genetic influences on grammar and phonological short-term memory deficits: evidence from 6-year-old twins. *Genes, Brain, and Behavior*, **5**, 158–169.
- BRISCOE, J., BISHOP, D. V. M. and NORBURY, C. F., 2001, Phonological processing, language, and literacy: a comparison of children with mild-to-moderate sensorineural hearing loss and those with specific language impairment. *Journal of Child Psychology and Psychiatry*, **42**, 329–340.
- CHRISTENSEN, D., ZUBRICK, S., LAWRENCE, D. and TAYLOR, C., 2014, Risk factors for low receptive vocabulary abilities in the preschool and early school years in the Longitudinal Study of Australian Children. *PLoS One*, **7**(9), e101476. doi: 10.1371/journal.pone.0101476
- CLARK, A. *et al.*, 2013, Tangled terminology: what's in a name? *Royal College of Speech and Language Therapists' Bulletin*, **September**, 20–21.
- CONTI-RAMSDEN, G., ST CLAIR, M. C., PICKLES, A. and DURKIN, K., 2012, Developmental trajectories of verbal and non-verbal skills in individuals with a history of specific language impairment: from childhood to adolescence. *Journal of Speech, Language, and Hearing Research*, **55**, 1716–1735. doi: 10.1044/1092-4388(2012/10-0182).
- DEPARTMENT FOR EDUCATION (DfE), 2013, *Draft Special Educational Needs (SEN) Code of Practice: for 0 to 25 Years* (available at: <https://www.education.gov.uk/consultations/downloadableDocs/DraftSENCODEofPractice.pdf>) (accessed on 18 February 2014).
- DISABILITYCARE AUSTRALIA, 2013, *DisabilityCare Australia: One Big Difference to Lots of Lives* (available at: <http://www.ndis.gov.au>) (accessed on 20 February 2013).
- ELLIOTT, J. G. and GIBBS, S., 2008, Does dyslexia exist? *Journal of Philosophy of Education*, **42**, 475–491.
- GILBERTSON, M. and KAMHI, A. G., 1995, Novel word learning in children with hearing impairment. *Journal of Speech and Hearing Research*, **38**, 630–642.
- HAAKE, M., HANSSON, K., SCHÖTZ, S., GULZ, A. and SAHLÉN, B., 2014, The slower the better? Does the speaker's speech rate influence children's performance on a language comprehension test? *International Journal of Speech–Language Pathology*, **16**, 181–190.

- HADLEY, P. A. and HOLT, J., 2006, Individual differences in the onset of tense marking: a growth curve analysis. *Journal of Speech, Language, and Hearing Research*, **49**, 984–1000.
- HADLEY, P. A., RISPOLI, M., HOLT, J. K., FITZGERALD, C. and BAHNSEN, A., 2014, The growth of finiteness in the third year of life: replication and predictive validity. *Journal of Speech, Language, and Hearing Research*, **57**, 887–900. doi: 10.1044/2013\_JSLHR-L-13-0008.
- JOHNSON, C., BEITCHMAN, J. H., YOUNG, A., ESCOBAR, M., ATHKINSON, K., WILSON, B., BROWNLIE, E. B., DOUGLAS, L., TABACK, N., LAM, I., WANG, M., 1999, Fourteen-year follow-up of children with and without speech/language impairments: speech/language stability and outcomes. *Journal of Speech, Language, and Hearing Research*, **42**, 744–760.
- LAUHLAN, F. and BOYLE, C., 2007, Is the use of labels helpful in special education? *Support for Learning*, **22**, 36–42.
- LEONARD, L. B., 1981, Facilitating linguistic skills in children with specific language impairment. *Applied Psycholinguistics*, **2**, 89–118.
- LEONARD, L. B., 1991, Specific language impairment as a clinical category. *Language Speech and Hearing Services in Schools*, **22**, 66–88.
- LEONARD, L. B., 1998, *Children with Specific Language Impairments* (Cambridge, MA: MIT Press).
- LYBERG-ÅHLANDER, V., HAAKE, M., BRÄNNSTRÖM, J., SCHÖTZ, S. and SAHLÉN, B., 2014, Does the speaker's voice quality influence children's performance on a language comprehension test? *International Journal of Speech–Language Pathology*, doi: 10.3109/17549507.2014.898098.
- MARMOT, M., 2010, *Fair Society, Healthy Lives: The Marmot Review; Strategic Review of Health Inequalities in England Post-2010* (available at: <http://books.google.co.uk/books?id=AcfESAACAAJ>).
- MCCARTNEY, E., ELLIS, S. and BOYLE, J., 2009, The mainstream primary classroom as a language-learning environment for children with severe and persistent language impairment—implications of recent language intervention research. *Journal of Research in Special Educational Needs*, **9**, 80–90.
- MCLEOD, S. and BLEILE, K., 2004, The ICF: a framework for setting goals for children with speech impairment. *Child Language Teaching and Therapy*, **20**, 199–219.
- NETTELBLADT, U., 1983, *Developmental Studies of Dysphonology in Children* (Lund: Liber Läromedel).
- OETTING, J. B. and McDONALD, J. L., 2001, Nonmainstream dialect use and specific language impairment. *Journal of Speech, Language, and Hearing Research*, **44**, 207–223.
- PARADIS, J., RICE, M. L., CRAGO, M. and MARQUIS, J., 2008, The acquisition of tense in English; distinguishing child second language from first language and specific language impairment. *Applied Psycholinguistics*, **29**, 689–722.
- PERKINS, M., 2007, *Pragmatic Impairment* (Cambridge: Cambridge University Press).
- PINKER, S., 1984, *Language Learnability and Language Development* (Cambridge, MA: Harvard University Press).
- REDMOND, S. M., THOMPSON, H. L. and GOLDSTEIN, S., 2011, Psycholinguistic profiling differentiates specific language impairment from typical development and from attention-deficit/hyperactivity disorder. *Journal of Speech, Language, and Hearing Research*, **54**, 99–117.
- REES, I., 2008, A systemic solution-oriented model. In B. Kelly, L. Woolfson and J. Boyle (eds), *Frameworks for Practice in Educational Psychology* (London: Jessica Kingsley), pp. 162–181.
- REILLY, S., TOMBLIN, B., LAW, J., MCKEAN, C., MENSAH, F., MORGAN, A., GOLDFELD, S., NICHOLSON, J. and WAKE, M., 2014, Specific language impairment: a convenient label for whom? *International Journal of Language and Communication Disorders* **49**, 416–451.
- RICE, M. L., 2000, Grammatical symptoms of specific language impairment. In D. V. M. Bishop and L. B. Leonard (eds), *Speech and Language Impairments in Children: Causes, Characteristics, Intervention and Outcome* (Hove: Psychology Press), pp. 17–34.
- RICE, M. L., 2009, Language acquisition lessons from children with specific language impairment: revisiting the discovery of latent structures. In V. C. M. Gathercole (ed.) *Routes to Language: Studies in Honor of Melissa Bowerman* (New York, NY: Taylor & Francis Group), pp. 287–313.
- RICE, M. L., 2012, Toward epigenetic and gene regulation models of specific language impairment: looking for links among growth, genes, and impairments. *Journal of Neurodevelopmental Disorders*, **4**, doi: 10.1186/1866-1955-4-27.
- RICE, M. L., 2013, Language growth and genetics of specific language impairment. *International Journal of Speech–Language Pathology*, **15**, 223–233.
- RICE, M. L., SMITH, S. D. and GAYÁN, J., 2009, Convergent genetic linkage and associations to language, speech and reading measures in families of probands with specific language impairment. *Journal of Neurodevelopmental Disorders*, **1**, 264–282.
- RICE, M. L., TAYLOR, C. L. and ZUBRICK, S. R., 2008, Language outcomes of 7-year-old children with or without a history of late language emergence at 24-months. *Journal of Speech, Language, and Hearing Research*, **51**, 394–407.
- RICE, M. L., TOMBLIN, J. B., HOFFMAN, L., RICHMAN, W. A. and MARQUIS, J., 2004, Grammatical tense deficits in children with SLI and nonspecific language impairment: relationships with nonverbal IQ over time. *Journal of Speech, Language, and Hearing Research*, **47**, 816–834.
- RICE, M. L., AND WEXLER, K., 1996, Toward tense as a clinical marker of specific language impairment in English-speaking children. *Journal of Speech and Hearing Research*, **39**, 1239–1257.
- RICE, M. L. and WEXLER, K., 2001, *Rice/Wexler Test of Early Grammatical Impairment* (San Antonio, TX: Psychological Corporation).
- RICE, M. L., ZUBRICK, S. R., TAYLOR, C. L., GAYÁN, J. and BONTEMPO, D. E., 2014, Late language emergence in 24 month twins: heritable and increased risk for twins. *Journal of Speech, Language, and Hearing Research*, May 27, 2014. doi: 10.1044/1092-4388(2013/12-0350).
- RISPOLI, M., HADLEY, P. A. and HOLT, J. K., 2012, Sequence and system in the acquisition of tense and agreement. *Journal of Speech, Language, and Hearing Research*, **55**, 1007–1021. doi: 10.1044/1092-4388(2011/10-0272).
- SAHLÉN, B. and HANSSON, K., 2006, Novel word learning and its relation to working memory and language in children with mild-to-moderate hearing impairment and children with specific language impairment. *Journal of Multilingual Communication Disorders*, **4**, 95–107.
- SANDGREN, O., ANDERSSON, R., VAN DE WEIJER, J., HANSSON, K. and SAHLÉN, B., 2013, Impact of cognitive and linguistic ability on gaze behavior in children with hearing impairment. *Frontiers in Psychology*, **4**, doi: 10.3389/fpsyg.2013.00856.
- SHRIBERG, L. D., TOMBLIN, J. B. and MCSWEENEY, J. L., 1999, Prevalence of speech delay in 6-year-old children and comorbidity with language impairment. *Journal of Speech, Language, and Hearing Research*, **42**, 1461–1481.
- SPAULDING, T. J., PLANTE, E. and FARINELLA, K. A., 2006, Eligibility criteria for language impairment: is the low end of normal

- always appropriate? *Language, Speech, and Hearing Services in Schools*, **37**, 61–72.
- STANLEY, F., BLAIR, E. and ALBERMAN, E., 2000, *Cerebral Palsies: Epidemiology and Causal Pathways* (London: MacKeith).
- STARK, R. E. and TALLAL, P., 1981, Selection of children with specific language deficits. *Journal of Speech and Hearing Disorders*, **46**, 114–122.
- TAYLOR, C., CHRISTENSEN, D., LAWRENCE, D., MITROU, F. and ZUBRICK, S., 2013a, Risk factors for children's receptive vocabulary development from four to eight years in the Longitudinal Study of Australian Children. *PLoS ONE*, **8**, e73046. doi: 10.1371/journal.pone.0073046.
- TAYLOR, C., ZUBRICK, S. and RICE, M., 2013b, Population and public health perspectives on late language emergence at 24 months as a risk indicator for language impairment at 7 years. In L. Rescorla and P. Dale (eds), *Late Talkers: Language Development, Interventions, and Outcomes* (Baltimore, MD: Brookes), pp. 23–39.
- TIMES EDUCATIONAL SUPPLEMENT (TES), 2007, Don't read the label, it's damaging. *Times Educational Supplement*, **5 October** (available at: <http://www.tes.co.uk/article.aspx?storycode=2444191>).
- TOMBLIN, J. B., 2008, Validating diagnostic standards for SLI using adolescent outcomes. In C. F. Norbury, J. B. Tomblin and D. V. M. Bishop (eds), *Understanding Developmental Language Disorders* (Hove: Psychology Press), pp. 93–114.
- TOMBLIN, J. B., RECORDS, N. L., BUCKWALTER, P., ZHANG, X., SMITH, E. and O'BRIEN, M., 1997, The prevalence of specific language impairment in kindergarten children. *Journal of Speech and Hearing Research*, **40**, 1245–1260.
- WEISMER, S. E., TOMBLIN, J. B., ZHANG, X., BUCKWALTER, P., CHYNOWETH, J. G. and JONES, M., 2000, Nonword repetition performance in school-age children with and without language impairment. *Journal of Speech, Language and Hearing Research*, **43**, 865.
- ZUBRICK, S., TAYLOR, C., LAWRENCE, D., MITROU, F., CHRISTENSEN, D. and DALBY, R., 2009, The development of human capability across the lifecourse: perspectives from childhood. *Australian Journal of Epidemiology*, **16**, 6–10.