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Advocating for SLI

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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/) 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.

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