

Theoretical article

Specific language impairment as systemic developmental disorders

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Abstract

Specific Language Impairment (SLI) is a disorder characterised by slow, abnormal language development. Most children with this disorder do not present any other cognitive or neurological deficits. There are many different pathological developmental profiles and switches from one profile to another often occur. An alternative would be to consider SLI as a generic name covering three developmental language disorders: developmental verbal dyspraxia, linguistic dysphasia, and pragmatic language impairment.

The underlying cause of SLI is unknown and the numerous studies on the subject suggest that there is no single cause. We suggest that SLI is the result of an abnormal development of the language system, occurring when more than one part of the system fails, thus blocking the system's natural compensation mechanisms. Since compensation also hinders linguistic evaluation, one possibility for diagnosis and remediation control is to assess basic cognitive abilities by non-linguistic means whenever possible. Neurological plausible bases for language and language development should also be taken into account to offer new hypotheses and research issues for future work on SLI.

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1. Introduction

Not all children learn language effortlessly. Some of them, around 7% (Tomblin & Zhang, 1999, p. 220) in kindergarten, present some kind of Specific Language Impairment (SLI). These

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problems affect both expressive development (e.g. errors in sound production, limited vocabulary, errors in tense, difficulty in recalling words or producing sentences with developmentally appropriate length and complexity) and receptive development (e.g. difficulty in understanding words or sentences). The language disorder may be specific or it may be associated with a more general learning disability, autism or physical or neurological damage (such as cleft palate, cerebral palsy or head injury). If untreated, these disorders can have an impact on school performance and career choices in the long term.

SLI, a condition that has sometimes been called developmental dysphasia (DD), but is also known as language-learning impairment or developmental language disorder, belongs to the category of specific disorders: the language level observed is substantially below the nonverbal intellectual capacity. This limitation on language abilities cannot be explained by any obvious factors such as hearing impairment, low verbal intelligence, neurological damage or psychological problems (Bishop, 1992; Tallal, Stark, & Mellits, 1985). Thus, the criteria for SLI are primarily exclusionary. Children with SLI have been shown to present heterogeneous linguistic symptoms (for an overview, see Bortolini, Leonard, & Caselli, 1998). To account for this heterogeneity, several classification systems based on clinical observation or empirical studies have tried to assign children to homogeneous subgroups (Bishop & Rosenbloom, 1987; Korkman & Hakkinen-Rihu, 1994; Rapin & Allen, 1983). For instance, Rapin and Allen (1983) described three sub-types of developmental disorders and six profiles of language problems based on linguistic analyses of phonological, lexical, morphosyntactic or pragmatic abilities. They distinguished mixed receptive-expressive disorders (including ‘verbal auditory agnosia’ and ‘phonologic-syntactic deficit disorder’), expressive disorders (including ‘verbal dyspraxia’ and ‘speech programming deficit disorder’), and higher-order processing disorders (including ‘lexical deficit disorder’ and ‘semantic-pragmatic disorder’). Five of the six profiles described have found empirical confirmation in a study (Conti-Ramsden, Crutchley, & Botting, 1997) that combined clinical and test information. A cluster analysis was performed on the children’s performance and produced six groups of children. One of the groups had no match with Rapin and Allen’s categories because it was composed of children who appeared to be performing within the normal range. In contrast, however, the ‘verbal auditory agnosia’ group described by Rapin and Allen was not found.

2. Limits of the definition of SLI

The same generic name (SLI or DD) is used to characterise very different populations, e.g. very young children (3 years) who do not initiate language acquisition normally (see, for example, Fey & Loeb, 2002); teenagers (15–16 years) after several years of language remediation; children presenting a minor language disorder (–1 standard deviation for a language test battery, see Ellis Weismer, Evans, & Hesketh, 1999) or a more acute disorder (–1.5 standard deviation for a language test battery, see van der Lely & Ullman, 2001), or children presenting expressive (and receptive) disorders. Several linguistic tests have been proposed as potential psycholinguistic markers for such language disorders. Tests involving the repetition of ‘pseudo-words’ (Bishop, North, & Donlan, 1996) or the production of verbal morphology in obligatory contexts (Rice & Wexler, 1995) seem particularly interesting candidates, even though they are still subject to discussion (Conti-Ramsden, Botting, & Faragher, 2001). Indeed, those tests cannot really distinguish children presenting specific language disorders from those with other language problems. For example, children affected by Down’s syndrome find it particularly difficult to repeat pseudo-words (Jarrold, Baddeley, & Hewes, 2000) and children learning a second language fail verbal morphology tests badly (Paradis & Crago, 2000).

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