Primary or “specific” language impairment and children learning a second language

Kathryn Kohnert *, Jennifer Windsor, Kerry Danahy Ebert

Department of Speech-Language-Hearing Sciences, 115 Shevlin Hall, 164 Pillsbury Dr. S.E., University of Minnesota, Minneapolis, MN 55455, USA

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Abstract

We review empirical findings from children with primary or “specific” language impairment (PLI) and children who learn a single language from birth (L1) and a second language (L2) beginning in childhood. The PLI profile is presented in terms of both language and nonlinguistic features. The discussion of L2 learners emphasizes variable patterns of growth and skill distribution in L1 and L2 which complicate the identification of PLI in linguistically diverse learners. We then introduce our research program, designed to map out common ground and potential fault lines between typically developing children learning one or two languages, as compared to children with PLI.

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Introduction

This article considers language and nonlinguistic processing performance in two populations: children with primary or “specific” language impairment (PLI) and early sequential bilinguals—those children who learn a single language (L1) from birth and a second language (L2) beginning at some point in childhood. PLI is a high incidence developmental disorder affecting an estimated 5–7 percent of children, boys somewhat more than girls (Paul, 2001; Tomblin et al., 1997). At present, PLI is identified on the basis of low language performance in the face of otherwise typical development. Children with PLI fail to make expected progress in language with no evident cause for the delay (American Psychiatric Association, 1994; Bishop, 1992; Leonard, 1998). That is, observed language lags in PLI are not caused by frank sensory or cognitive impairment as is the case in communication deficits associated with hearing loss or Down syndrome. Although there is no clear lesion site, recent anatomical findings indicate a clear neurological component to PLI (see Ullman & Pierpont, 2005 for review). The social environments for children with PLI also do not differ from those of children who are developing language typically. PLI is the most common type of developmental language disorder and the most studied, for both practical and theoretical reasons.

As with children with PLI, early sequential bilinguals are also prevalent. Immigrant children who acquire a minority L1 at home and the majority community language as L2 are well-represented in almost every nation of the world, including western countries such as Australia, England, Canada, Germany, Sweden and the Netherlands. In the United States it is estimated that one of every five school children will be a recent immigrant and speak a language other than English at home by 2010 (U.S. Bureau of the Census., 2000). Home languages include Cantonese, Hmong, Russian, Spanish, Somali and Vietnamese as well as more than a hundred other languages. In addition, children in many countries learn an indigenous L1 from birth and begin learning a different national language (L2) when they attend formal educational programs.
and Spanish in some parts of Mexico. Children learning a single minority L1 from birth and a majority L2 beginning at some point during early childhood may not be directly comparable to monolinguals in either language in terms of experience or performance. That is, L2 learners may perform below expected levels for monolingual peers on traditional language measures. This relatively low performance is not due to some weakness in the neurological or cognitive-linguistic processing system as is the case in PLI. Rather, low performance for L2 learners at certain points in time as compared to monolingual peers can be attributed to natural variation in language-learning experiences. The highly dynamic L1 to L2 proficiency profile in developing sequential bilinguals combined with few appropriate standards of comparison for young L2 learners present educators and speech-language pathologists with significant practical challenges. At the same time, children learning an L2 present an attractive alternative comparison group for considering monolingual children with PLI.

Investigations of language and nonlinguistic processing in young L2 learners and children with PLI have the potential to provide a unique vantage point from which to consider fundamental relationships between language, experience and general cognitive mechanisms. Given the high incidence of both populations, a number of practical considerations also motivate the joint study of these two groups. Because L2 learners and children with PLI may perform comparably on traditional language measures, albeit for very different reasons, there is as yet no clear way to distinguish language differences from primary language disorders in school age L2 learners. This practical limitation has led to over-identification, under-identification or misidentification of PLI in L2 learners (see Kohnert, 2008 for discussion).

In the following section we summarize language and nonlinguistic findings in monolingual PLI. In the second major section we turn our attention to general language characteristics of minority L1, majority L2 learners. In the third section we introduce our research program, designed to investigate areas of overlap and divergence in language and nonlinguistic processing performance for these combined populations. We conclude with a discussion of our research findings in terms of their potential contributions to unified theories of language acquisition and use under diverse circumstances as well as to improvements in clinical service to linguistically diverse children with suspected PLI.

1. Monolingual children with primary or “specific” language impairment

Children with PLI, referred to by various names, have long been the subject of active investigation in a variety of disciplines. These various names include childhood aphasia, language acquisition disorder, language learning disability and, most consistently over the past two decades, specific language impairment or SLI. Recently the terms procedural language impairment (Ullman & Pierpoint, 2005) and primary language impairment (Kohnert, 2008; Kohnert, Windsor, & Yim, 2006; Windsor & Kohnert, in press) have been proposed to encompass the subtle nonlinguistic processing weaknesses that exist alongside the obvious lags in language (see following sections). The term primary language impairment, or PLI, is preferred here as it is most consistent with available evidence without presupposing a particular etiological cause onto the diagnostic category (cf. Tomblin, Zhang, Buckwalter & O’Brien, 2003).

At present PLI is identified only on the basis of behavioral data. Conventional criteria for a diagnosis of PLI include the presence of delays in language alongside motor functioning, hearing and performance IQ scores within the normal range. Language performance one to two standard deviations below peers is considered the critical cut-off level for PLI. Although co-morbidity of PLI with other disorders is frequently found on clinical caseloads, for better or worse children who fall into multiple diagnostic categories are typically excluded from empirical studies. Results from twin studies indicate that PLI as well as typical language skill is heritable. A positive family history of language or learning impairment is considered a risk factor for PLI (Plomin & Dale, 2000).

As with other disorders, symptom severity may range from mild to severe and vary in the specific presentation across children or within the same child at different periods in his or her life. Presenting symptoms will also interact with the child’s internal and external resources to determine the impact the language disorder will have on his or her academic and social-emotional development (see reviews in Kohnert, 2008; Thal & Katch, 1996). We now turn our attention to the considerable evidence that must be accounted for by theories of PLI in language as well as in nonlinguistic domains.

1.1. Salient deficits: Language characteristics in monolingual children with PLI

Historically, preschool children with PLI have been characterized primarily by their impoverished verbal morphology systems. Indeed, young English-speaking children with PLI tend to omit short, unstressed verb forms indicating tense or agreement such as third person singular—s, regular past tense—ed, and the verb “be” (e.g., Cleave & Rice, 1997; see Leonard, 1998 for review). In recent years this characterization has been both expanded and challenged along several dimensions.

First, viewing PLI as a primary deficit in verbal morphology ignores cross-linguistic evidence; both the types of grammatical deficits apparent in PLI and their prominence differ by language. Evidence from French-speaking preschoolers with PLI indicates that morphosyntax is no more impaired than other areas of language (Thordardottir & Namazi, 2007). Spanish-speaking children with PLI appear to have particular difficulty with noun morphology, such as adjec-
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