

6-2002

Children with Specific Language Impairment

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Hewitt, Lynne Elizabeth, "Children with Specific Language Impairment" (2002). *Communication Sciences and Disorders Faculty Publications*. 1.

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DOI: 10.1017/S0142716402232075

Children with specific language impairment. Laurence B. Leonard. Cambridge, MA: MIT Press, 1998. Pp. 339.

Laurence Leonard is one of the most prolific and well-respected researchers in the area of specific language impairment (SLI) in children, and he is well qualified to write a book surveying the topic. SLI is a disorder of unknown origin, which appears to have a genetic component, causing delays and disorders of language development in children of normal nonverbal intelligence with no significant medical, emotional, or sensory deficits. The primary purpose of this book is to provide a comprehensive review of research in the field of SLI, and Leonard has the minute knowledge necessary to succeed at the task. The coverage in the book reaches back to the earliest nineteenth-century descriptions of children who fit the profile and then moves forward quickly to the massive literature that has accumulated on the topic in the last 20 years. Following the introductory historical and definitional section, Leonard goes on to describe the nature of the linguistic impairment in SLI, including important cross-linguistic accounts and nonlinguistic cognitive issues. The book also covers hypotheses of causation, in a “nature versus nurture” section, and clinical issues of assessment and intervention. Part V, on theory, may be of most interest to psycholinguists who are not language disorders specialists. Overall, there is no doubt that this book is both an excellent introduction for those unfamiliar with SLI and a welcome overview and resource for experts. Leonard’s knowledge is encyclopedic, his presentation erudite, and his grasp of detail unfailingly impressive.

Leonard’s own description of his project is rather modest: to “provide the kind of information about specific language impairment that news accounts probably can’t provide” (p. vii). This quote is revealing of the tone of the book – self-effacing to a fault. Of course, news accounts cannot possibly provide detailed expositions of complex theoretical positions that even experts need time to digest! This quote may lead the reader to falsely imagine that Leonard’s intent is to write a crossover, popularized account. On the contrary, one possible criticism of this clearly praiseworthy work of scholarship is that he does not try to be popular enough. This book covers a staggering amount of ground with clarity and precision. Anyone researching this topic needs to read this book, and perhaps that is all a reader of this review needs to know. It provides a central resource unparalleled in the field. However, there are faults in the book that detract from its ability to succeed as more than an encyclopedia of SLI. These faults are perhaps best characterized as stylistic.

One way to get people excited over the arcana of one’s subfield is to take on controversy headlong, retailing a trenchant view of weaknesses in the work of scholars with whom one disagrees. Leonard does not take that route, instead preserving, at all times, a careful and cautious demeanor. His commitment to accessible prose and fairness leads to a strenuous avoidance of any hint of stridency in retailing views he does not share. The shortcomings in others’ theories are carefully examined; but readers must be alert to discover Leonard’s own theories, which are presented in curiously muffled tones. This rhetorical stance can be seen as a refreshing change from writing on language issues in which

straw figures are vigorously knocked about and key elements of opponents' arguments are misinterpreted or ignored. Leonard never commits these sins, and the reader should be grateful for this. In this light, perhaps it is carping to wish for just a bit more glee when listing fatal flaws in opposing lines of work. Yet rhetorical flourishes do serve a purpose, in that they can help neophytes orient themselves to an unfamiliar body of work. Although Leonard's cautious prose is evident throughout the book, it is in the theory section that a bit of stridency might have been rhetorically useful in presenting his argument. Despite the catholic and lucid coverage, readers who have not been following the debates dealing with the theoretical issues raised in Chapters 11 and 12 may not understand the situation.

In Chapter 5 Leonard presents an analysis of one of the most intractable problems in SLI: the relation between language and cognition. Most syndromes that are associated with language difficulties arise from conditions that result in language impairment as one of many effects. There are syndromes with clear physical correlates that virtually always result in language impairments, such as Down syndrome. Other syndromes, such as autism, may lack biomedical diagnostic protocols, and instead diagnosis turns on the presence of clusters of behavioral features. But even these syndromes have language issues as a mere piece of the puzzle. In the case of SLI, the language piece is the only piece – sort of. And it is the “sort of” qualifier that leads to possibly the most difficult issue in the field – how best to identify which children have impairments affecting only language. It turns out that children with SLI tend to have slightly lower nonverbal IQs than controls (although still within the normal range). Other differences have also been noted, including slight motor and perceptual differences compared to controls. The disorder itself is defined using a discrepancy model that compares IQ with language functioning, usually using mean length of utterance and formal language tests. The familiar objections to the validity of IQ testing are present in a particularly virulent form in the realm of formal language testing. There are many language tests, none of which was designed to be co-normed with IQ tests and all of which suffer from various psychometric flaws (McCauley & Swisher, 1984; Plante & Vance, 1994). Thus, there are foundational issues in the identification of the disorder that remain unresolved. Leonard is comprehensive in his discussion of these problems, but he fails to mount a defense to the foundational challenges posed by issues of identification.

In contrast to the somewhat disappointing handling of issues related to language testing, Leonard's discussion of issues raised by IQ is subtle and penetrating. He identifies two paradoxes and labels them “little” and “big.” The little paradox arises from the finding that children with SLI have known deficits in mental representation and hypothesis testing. How then can they score within normal limits on IQ tests? The answer is that most items on tests for young children do not heavily rely on these areas of cognition. But this then leads to the big paradox: that language itself is required for many so-called nonverbal tasks, and how then can they fail to show cognitive impairment? The answer to this conundrum is that, in fact, older children with SLI have been shown in several studies to exhibit a decline in IQ. Issues related to IQ are generally underaddressed within the field, and Leonard does us a service by taking another

look at the complexity of the relation between linguistic and cognitive functioning.

Leonard's presentation of theories of SLI follows the issues of language and cognition into territory familiar to language researchers. In work on SLI, as in other language acquisition research, nativist and domain-specific linguistic accounts compete with domain general processing views. Mainstream linguistics has occasionally taken an interest in clinical populations, for example, Jakobsonian language theories drawing on aphasia (Jakobson & Halle, 1975) and the famous case of Genie (Curtiss, 1977). An impetus to the rise of interest in SLI came from modular accounts of language and its acquisition (Fodor, 1983), which led to theories of disorders that might exhibit selective impairment of modular faculties (Bellugi, Marks, Bihle, & Sabo, 1993; Smith & Tsimpli, 1995). SLI was among the syndromes held to support generative linguistic theory, in that it appears to show the existence of a modular language faculty that can be selectively impaired (Rice, 1994).

In summarizing the strengths of generative linguistic accounts, Leonard praises their precision in generating and testing predictions. Thus, the Extended Optional Infinitive account (see, e.g., Rice, Wexler, Marquis, & Hershberger, 2000) is held to derive strength from the fact that it provides a unified grammatical framework to account for apparently disparate grammatical deficits. A genetic impairment in the ability to learn the rules associated with that category is then postulated and offered as an explanation for linguistic deficits in SLI. Leonard perhaps overstates the case for precision, in that a major weakness of such predictions is their reliance on one particular grammatical framework. Because of the influence of modular theories, the vast majority of linguistically influenced work in SLI has been conducted within the confines of generative linguistics. Grammatical models are subject to change (and generative grammars, while maintaining certain core features, have undergone radical change at regular intervals over the past 4 decades). This type of flux leaves these accounts open to attack by competing models of grammar. It also leaves them vulnerable to irrelevancy if the formalisms postulated become outdated.

It would enrich the literature of SLI if alternative grammatical accounts were considered explicitly. To some extent, Leonard's discussion of processing accounts of SLI postulated under versions of the competition model (Bates & MacWhinney, 1987) is a step in this direction. MacWhinney (1985) applied the competition model to known facts in the patterning of morphosyntactic development in Hungarian. Such a model, or an emergent descendant (MacWhinney, 1999), might be usefully applied to predicting linguistic patterning of children with impairments. There is a recent trend in the SLI literature to compare predictions made by domain general processing and nativist linguistic theories (e.g., Rice et al., 2000; Rice, Wexler, & Redmond, 1999). However, comparisons of alternative linguistic accounts are not made. For example, one processing account, the surface hypothesis (Leonard, 1989), holds that language impairment stems from subtle perceptual difficulties that impede the comprehension of English morphology. Leonard presents this and other processing views as the main competitors to nativist theories of SLI. Yet many other potential sources of difficulty for children with subtle language difficulties exist, including input

frequency, regularity of forms, and the pragmatic importance and functional load of morphemes. In functionalist approaches to language development, phonetic substance plays a role but is only one element in a complex mix. These alternative views of complexity over and above phonetic issues have been largely ignored in the debates over nativist versus processing accounts. Leonard himself has been one of the few in the field of developmental language disorders to discuss nongenerative approaches to language and their relevance for children with disorders (Leonard & Fey, 1991). In *Children with specific language impairment*, however, Leonard missed an opportunity to make direct theoretical comparisons. Such comparisons would help situate the disorders literature within the broader universe of language study. A further argument for the importance of alternative grammatical accounts lies in the main weakness that Leonard finds in the current generatively based linguistic theories of SLI; lack of congruence with findings in languages other than English.

Despite his discussion of critical gaps in generative theories of SLI, Leonard's review of the evidence leads him in the book's last chapter to conclude that the known facts of SLI remain consistent with this theory. However, he argues that the facts are also consistent with processing accounts; careful reading will reveal that Leonard finds the latter approach to be the more promising. Aside from his avoidance of issues relevant to processing-based linguistic theory, his account of the evidence in favor of processing theories is as thorough as the rest of the book, although a slightly off-note is struck by the penultimate chapter. In Chapter 13 Leonard examines Paula Tallal's theory that children with language impairments have difficulty perceiving brief acoustic events. This deficiency, in turn, causes deficits in their ability to form correct linguistic representations. In this account the innate linguistic ability of the children is seen as intact, and therefore intervention targeted at perceptual deficits is argued to have the potential to normalize functioning (Tallal, Miller, Bedi, Wang, & Nagarajan, 1996). The article by Tallal et al. (1996) outlines positive results from a program of intervention designed to improve the perception of brief acoustic events. A problem for this theory is that there is evidence that children with SLI and children who are developing normally do not differ in their ability to perceive brief acoustic events (Nitttrouer, 1999), casting doubt on the rationale for the therapy offered, if not necessarily on its effectiveness. Although it is unfair to expect that this book would have been able to anticipate these challenges, the decision to highlight this theory over others may date the work unduly in the near future.

In discussing the theoretical controversies of the field, Leonard carefully sets up the issues related to cognition and language. Perhaps because he is trying to be fair to all interested parties, he leaves the scene of his carefully built argument to look at other issues. We do not return to the link between cognition and language until after a presentation of nativist linguist theories. This has the unfortunate result of obscuring the main thrust of Leonard's argument and the aspect of the book that has the most interest for psycholinguistics as a whole. *Children with specific language impairment* is an important contribution to the literature that argues against modular, syntactically based accounts of language acquisition and its disorders. It makes a strong case for linking language and cognition, both at a bottom-up, perceptual level and from a neo-Whorfian per-

spective, in that Leonard holds that a lack of language results in cognitive restrictions. It may be that I have dwelt overmuch on the rhetorical issues that obscure this important argument. Otherwise, the work has few faults, and it deserves a readership far beyond a narrow audience of specialists in language disorders.

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