

Severe Developmental Disorders and Bilingualism
[Clinical Perspectives]

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Accepted April 6, 1999.

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Supported in part by NIMH grants MH19126 and MH16259, The Cambridge Hospital Department of Psychiatry, a Harvard Department of Psychiatry Livingston Award, and a Children's Studies at Harvard Research Award to Dr. Toppelberg.

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Associate Editor: Michael S. Jellinek, M.D.

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Language ability is a strong predictor of functional outcome in autism (Nordin and Gillberg, 1998) [7] and other moderate to severe developmental disorders (DD) such as mental retardation, childhood schizophrenia, and moderate to severe language disorders. For example, there is a strong relationship between language and aspects of both general and more specific (e.g., theory of mind ability) social functioning and adaptation in disorders ranging from autism to Down syndrome and specific language impairment (Tager-Flusberg and Sullivan, 1997) [15]. Therefore, it is essential to ensure an optimal language acquisition environment in order to maximize social and adaptive behavior outcomes in children with DD.

Because second language and bilingual environments are becoming increasingly common in the United States and around the world, it seems timely to offer some clinical reflections on the impact of these environments on children with developmental delays. In the normal child, full bilingualism is associated with a wide range of cognitive advantages (Diaz, 1985) [5]. The

research evidence is strong enough to contend that, when possible, every normal child should have the opportunity of being exposed to 2 or more languages and that an effort should be made to preserve the home language in language-minority children. The question is whether the same conclusions should apply to the child with severe DD, in whom control of either language, let alone bilingualism, is rarely attainable.

To begin answering this question, we address (1) the importance of quality of language input in determining functional linguistic outcome in the child with DD and (2) the need to secure high-quality language input for the acquisition of a second language (L2). Then, we review the DD child's specific difficulties in acquiring L2. We conclude by offering a few clinical recommendations.

Language Acquisition: Quality of Language Input for Normally Developing and DD children[^]

It has been argued that most children acquire a first language effortlessly and without special teaching. Very young children appear to have inborn or early-developed cognitive mechanisms that allow them to acquire language very rapidly (Pinker, 1994) [8]. For instance, toddlers learn 10 new words a day and syntactic complexity increases exponentially between ages 18 and 36 months (Gleason, 1997) [6]. These mechanisms for language acquisition are pluripotential, i.e., able to learn the language of any language environment, including all the world's spoken and signed languages. Young children's extraordinary plasticity allows them to quickly pick up the abstract structure of the available input language, mentally translating it into rules about the use, the content, and the form of the language (Bloom and Lahey, 1978) [2]. These mental rules establish when to use a plural form, how to conjugate regular verbs, what sound variations are considered distinctive in a given language, and how to organize their mental dictionaries. Language input also allows young children to formulate pragmatic rules, such as rules about narrative, conversation, and social contexts appropriate for the use of particular linguistic forms. Relatively minimal language input, provided by both parents and peers, allows young children to extract actively these mental rules, though often adults from most cultures will adjust their language, making it easier to process and capturing the young child's attention to linguistic form and use (Snow, 1977) [11].

In contrast, for children with moderate to severe DD, acquiring a first language can be a significantly more demanding task. For instance, the underlying deficits of mental retardation, autism, childhood schizophrenia, and severe language disorders have particular negative consequences on the language acquisition mechanisms in these children. For them, learning rules about use (pragmatics), content (semantics), and/or form (syntax, morphology, phonology) is particularly laborious, resulting in significant language delays and deviance (Bernstein Ratner, 1997) [1]. While children with mental retardation and many children with language disorders present with language delays (i.e., their language resembles patterns seen in younger, typically developing children), children with pervasive developmental disorders and some types of language disorders present with deviant language (i.e., uneven language abilities with relatively greater pragmatic compromise) (Bernstein Ratner, 1997) [1]. As their capacity to organize and process language input according to linguistic and/or communicative rules is impaired, the relative importance of such input, in particular its quality and quantity, is much greater than in the normal child (Snow, 1994) [10]. Teachers, speech-language therapists, and other clinicians working with these children must modify their language to maximize communicative and linguistic effectiveness and provide expanded opportunities for language

and communicative interactions. High-quality input maximizes the contrast between different language features, including phonetic features, morphological markers, and semantic and pragmatic distinctions. Clinical and educational professionals have exceptional skills in relaying messages to these children and eliciting communication from them.

Normal L2 Acquisition: Actively Maintaining Native Input[^]

Normally developing preschool and school-age children learn L2 by using complex cognitive, social, and linguistic strategies. Contrary to some popular beliefs, child L2 acquisition is not effortless or automatic, but the result of active strategies, according to extensive child language research (Saville-Troike, 1988; Tabors, 1997) [9,13]. Demographic data indicate that occasionally these strategies fail, even if the child is adequately exposed. For example, according to the 1990 U.S. Census, 40% of children raised in a home where a language other than English is spoken (language-minority children) are not fluent in English.

There are numerous linguistic, cognitive, and sociocultural constraints on learning L2, even for normal children. These constraints are even more severe in the child with DD, making learning a second language, in many cases, a particularly formidable task. This has serious consequences, both from a clinical and a public health point of view, because 14% of U.S. school-age children belong to a language minority, a fraction that can be transposed to (or even, given the effects of maternal health and of poverty on child development, raised for) the DD population. In addition, ethnic and language minorities are overrepresented in the special education classroom.

Quality of language input is crucial for normal L2 acquisition. The most successful second-language learners are the individuals who can engage in frequent and ongoing linguistic and social interactions with native speakers (Wong Fillmore, 1979) [17]. Thus, studies show that children and adults who are shy or socially anxious or who show less motivation tend to have poorer L2 skills at the end of a similar period of exposure compared with outgoing, highly motivated L2 learners (Tabors, 1997; Wong Fillmore, 1979) [13,17]. The anxious immigrant child may be more likely to respond with selective mutism than the anxious nonimmigrant child (Bradley and Sloman, 1975; Steinhausen and Juzi, 1996; [3,12] C.O. Toppleberg, A. Coggins, K. Lum, L. Medrano, P. Tabors, unpublished manuscript, 1999). The socially or communicatively incompetent child will fail to engage native speakers and, therefore, will tend to be a poor L2 learner (Tabors, 1997; Wong Fillmore, 1979) [13,17].

Specific Difficulties for L2 Acquisition in the DD Child[^]

In the case of children with DD, quality of L2 input is even more critical, (1) because they are generally more dependent on language input, (2) because their pragmatic deficits make them less likely to engage native speakers, and (3) because of their specific language and/or communicative deficits.

To illustrate these points, deficits in understanding other minds in autism (Tager-Flusberg, 1992) [14] and the conversational and discourse deficits prevalent in childhood schizophrenia (Caplan et al., 1996) [4] may undermine the linguistic, cognitive, and social strategies for L2 acquisition. Disorders such as mental retardation, autism, and language disorders will differ in their deficit profile. However, they share their reliance on high quality of language input.

Together with their unique social and communicative difficulties, acquiring L2 for these children is exceptionally arduous.

Clinical Relevance and Some Answers[^]

Parents of children with DD from a language-minority background often consult the child clinician about choice of language at home and at school. The growing school presence of child and adolescent psychiatrists makes consultation about special education placement frequent and influential. The following questions often need to be addressed in these consultations: Should school instruction take place in the home (non-English) language-an option that is rarely available-or in the school language (English) for a language-minority child with DD? Is a bilingual program beneficial for this child? Is L2 or foreign language teaching advisable? The answers will have to be tailored for the individual child. Although solid empirical research related to this discussion is scarce, and because answers to these questions are urgently needed (Toppelberg, 1997), [\[16\]](#) we propose the following provisional guidelines:

First, determine the critical communicative needs of the child and the language(s) with which the child absolutely must be familiar.

Second, determine also (a) the child's relative ability in first and second language, (b) the willingness and ability of family members and school personnel to function in the various possible languages, and (c) the child's attitude toward and aptitude for language in general and learning a second language in particular (for instance, the rare "savant" child with unusually strong language compared with other abilities).

Third, engage the family in an informed decision process, explicitly discussing particular risks, benefits, and availability of a particular language given the characteristics described above. The importance of maintaining the home language (for emotional and behavioral regulation and for family and cultural relatedness) should be weighed against competing needs (such as learning the language of instruction, society, and occupations) and limitations (such as the child's inability to handle several languages). If parents are not highly proficient in the L2, L2 speaking at home should be discouraged.

Fourth, avoid demands on the child to learn languages that will not be central to his/her future communicative needs, e.g., to study a foreign language in middle childhood or be enrolled in an enrichment immersion or bilingual program. In general, avoid foreign language teaching and do not prioritize long-term bilingual teaching.

Fifth, provide optimal, intense, well-structured, native input in the language(s) it is determined the child absolutely must be familiar with. The child with DD will probably need more support (tutoring, pedagogically designed natural language environments, selection of language-rich activities) in both languages than a normally developing monolingual or bilingual child would need in either.

To conclude, solid research to inform decisions in these populations is crucial. To guide the clinician, we have outlined a few provisional principles based on current child language research.

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Accession Number: 00004583-199909000-00026
