A Review of Sundberg and Partington's *Teaching Language to Children with Autism or Other Developmental Disabilities*

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Many communication teaching programs have been developed for autistic and developmentally disabled children, yet few have made use of B. F. Skinner's (1957) analysis of verbal behavior. In their book, *Teaching Language to Children with Autism or Other Developmental Disabilities* (1998), Sundberg and Partington have not only created an assessment and program based on Skinner's analysis, but have also addressed wider issues that are crucial to the success of language intervention programs. *Teaching Language to Children with Autism or Other Developmental Disabilities* makes an important contribution on several levels. In the acknowledgments, the authors state that they have attempted to make this edition "user friendly" and, in this reviewer's opinion, they have succeeded. Readers who have closely followed the development of this work will know that it has evolved over 25 years, originating at Western Michigan University in the late 1970s and guided by the teachings of Jack Michael. The program reflects theoretical developments since the publication of Skinner's book *Verbal Behavior* (1957) and incorporates the body of research that has grown from Skinner's work, yet it is presented in a way that is accessible to educators and parents alike. In a broader sense, the book can be considered an overview of state-of-the-art language interventions based on Skinner's

analysis. Chapters such as "Augmentative Communication" and "The Need for Both Discrete Trial and Natural Environment Training" could stand alone, because they are cogent summaries of issues for which Skinner's analysis has much relevance. Whether one wishes to implement a language training program based on Skinner's analysis or simply wants to learn how this analysis can be applied to teaching language, this book will be an informative and valuable resource.

With the popularity of early intervention programs for young autistic children (Maurice, Green, & Luce, 1996), the authors have wisely conveyed in chapter 1 that the success of a language program depends on those who provide the intervention having a broad range of knowledge and skills. First, it is necessary to have a set of teaching skills derived from applied behavior analysis, which Sundberg and Partington assume the reader already possesses. A second requirement is knowledge of the various types of augmentative communication systems, a topic that has engendered many conflicting recommendations, and at times, outright controversy. Chapter 4, "Augmentative Communication," presents clear guidelines for deciding whether an augmentative communication system, such as sign language or a picture communication system, should be used, and if so, provides a balanced account of the advantages and disadvantages of each. Although this topic has been discussed by many other authors, this chapter makes an important contribution because it discusses each system in terms of the ease of acquisition

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of the basic verbal operants as outlined by Skinner (1957).

A third requirement for the establishment of a language intervention program is the use of an effective assessment and curriculum, as well as a language acquisition tracking system. Sundberg and Partington have clearly achieved this goal. The behavioral language assessment presented in chapters 2 and 3 is simple to administer and interpret, and provides a profile of a child's strengths and areas for development. The assessment contains 12 categories that address the basic verbal operants as well as a broader range of areas including imitation and play. At a later time, the behavioral language assessment would be followed by a more detailed assessment, the assessment of basic language and learning skills, or ABLLS (Partington & Sundberg, 1998). The ABLLS guide also contains a task analysis of the many skills needed to communicate successfully, and is easily translatable into an individual educational plan format, using the ABLLS IEP development guide.

By developing an initial assessment that is brief and easy to administer, Sundberg and Partington have provided a useful tool that will help in planning the early stages of a teaching program. The authors note that a large number of children tend to fall into one of five levels, and sample profiles of each of these levels are provided in chapter 3. In general, a child whose performance corresponds to one of the five levels will benefit from starting instruction with a certain combination of teaching objectives. By noting areas of relative strength or weakness, the assessment can also be helpful in determining whether a child appears to have the necessary prerequisites for developing speech, or whether teaching another response form, such as signing, might be more successful. The authors state that a perfect score on the assessment would reflect the average performance of typical 2- to 3-year-old children, although the basis for this state-

ment is not provided. However, the five sample profiles suggest that the assessment items would easily differentiate children with varying degrees of language delay.

Because the procedures Sundberg and Partington have developed are based on Skinner's (1957) analysis of verbal behavior, these have several important features not found in other language programs. As Sundberg and Partington have pointed out, the essential feature of Skinner's analysis is that language is learned behavior under the control of a variety of different environmental variables. Several important considerations follow from this basic assumption. For example, a careful consideration of the motivational variables (also referred to as establishing operations or EOs; see Michael, 1988, 1993) that control the mand has significant implications for the early stages of language intervention. Chapter 5, "Beginning Language Intervention," describes positive procedures to establish cooperation and simple responding to instructions through the skillful use of establishing operations.

If a child is uncooperative, nonverbal, or displays behaviors that interfere with instruction, Sundberg and Partington recommend that the teacher should first take advantage of EOs in effect to pair him- or herself with reinforcing items or events, such as food, toys, tickles, or whatever currently functions to reinforce the child's behavior. Once an ongoing reinforcing relationship with the child has been established, simple responses can be required, as long as the responses are easy for the child and when the EO for a particular reinforcer is strong. Sundberg and Partington then recommend that the mand should be the first verbal operant taught. The mand is unique among the verbal operants because the response specifies what would function as reinforcement for the speaker's behavior, and the consequence is specific to the EO in effect. Mands are easier to teach because social reinforcement is often not effective for many nonverbal chil-

dren and the EOs that control mands are often powerful. Although many language programs include the teaching of mands or requests, few attempt to transfer control so that the response is primarily under the control of motivational variables. Sundberg and Partington also emphasize the teaching of mands in the child's everyday environment by capturing and contriving EOs. Capturing an EO involves capitalizing on the EO as it occurs naturally in the environment, whereas contriving an EO involves manipulating some object or event that alters the form of reinforcement (Sundberg, 1993). Many new mands can be taught using these procedures, and generalization is easier to achieve.

The ultimate goal of a language program should be to teach a spontaneous and flexible verbal repertoire, yet achieving this with many autistic and developmentally disabled individuals can often be challenging. By paying close attention to Skinner's classification system, which clearly delineates the characteristic antecedents and consequences in effect for each verbal operant, spontaneous verbal behavior is easier to teach. During the initial stages of teaching, it is often necessary to use prompts to establish responding, but these will need to be eliminated before a response can become spontaneous. For example, a mand can be considered spontaneous if it occurs without a verbal prompt and when the desired item is not in view; in other words, when the mand is primarily under control of the relevant motivational variables. Similarly, a tact can be considered spontaneous if the response occurs primarily under control of the relevant discriminative stimulus; in other words, if a child can comment about what he or she sees, hears, or smells without being asked "What is this?"

Skinner (1957) noted that the verbal operants are independent of one another, and this is evident in the verbal repertoires of many autistic and developmentally disabled persons. For example, Sundberg and Partington observe

that the training history of many individuals has emphasized the echoic and tact, but not the mand or intraverbal. Transfer across the verbal operants is not likely to occur automatically; as a result, the echoic and tact repertoires will be strong, but the mand and intraverbal repertoires will be relatively weak. To remedy this problem, Sundberg and Partington describe the quick transfer procedure, which is used to fade prompts so that responses come under control of the relevant stimuli, or to transfer control from one verbal operant to another. Many helpful diagrams that illustrate this procedure are provided throughout the book. The diagrams include a series of steps by which a response comes under control of the relevant antecedents and is followed by the characteristic reinforcement for that verbal operant. For example, a tact may initially be under control of the sight of an object, such as a cup, a verbal stimulus, "What is this?," and an echoic stimulus, "cup?" The diagram for the quick transfer procedure illustrates how all antecedents are faded except the nonverbal stimulus, and how the response can come to be reinforced by only social reinforcement or praise. Of particular benefit are the separate diagrams for spoken and signed responses and for responses using pictures. The authors also note that it is appropriate for many responses to be under the control of more than one antecedent stimulus. For example, in educational settings, a child should be able to tact when shown a picture and asked "What is this?" Through the use of clear explanations and diagrams, the authors help readers to make these kinds of analyses.

One of the strengths of the procedures presented in Sundberg and Partington's book is the extent to which complex verbal behavior is taught. The chapters on advanced receptive, tact, mand, and intraverbal training contain a wealth of ideas for extending a child's language following the teaching of a basic repertoire, including imitative skills, match-to-sample relation-

ships, echoics, mands, tacts, and receptive skills. The purpose of advanced language training is to teach the child to respond to the varied and constantly changing verbal stimuli that are present in everyday conversation. Sundberg and Partington have achieved this by developing a broad and extensive teaching sequence for each verbal operant, and these are illustrated in more detail in the ABLLS curriculum. Even with an effective curriculum, teaching procedures are needed that enable the child to engage in verbal behavior that combines verbal operants and allows the child to respond to complex verbal stimuli. To accomplish this, a crucial strategy used throughout the program is "mixed verbal behavior" or "mixed vb." As soon as responses from several different operants are mastered, teaching trials of these responses are alternated. An example from the early stages of training could be to intersperse receptive trials ("touch car") with tact trials (the child is shown a toy car and is asked "What is this?"). At an advanced level, trials for a number of verbal operants are alternated so that the instructor and child are engaged in a structured conversation. These verbal modules may involve simple receptive, receptive by function, feature, and class, tact, echoic, mand, and intraverbal trials. A skillful progression of discrete-trial training leading to teaching in the natural environment is used throughout these procedures.

Upon encountering this book, anyone not familiar with Skinner's analysis of verbal behavior might well have asked several questions: Why is it im-

portant to base a language program on Skinner's analysis? What advantages would such a program have over existing language programs? After reading *Teaching Language to Children with Autism or Other Developmental Disabilities*, the answers should be clear. Drawing on a combination of theory, research, and extensive practical experience, this book not only answers questions of what to teach and how to teach it, but most important, why. Both parents and professionals will find this book an extremely valuable resource, as would anyone who teaches a course on verbal behavior and its applications. There are also many potential topics for research contained within its pages. I eagerly look forward to further developments that are sure to arise from the publication of this book.

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