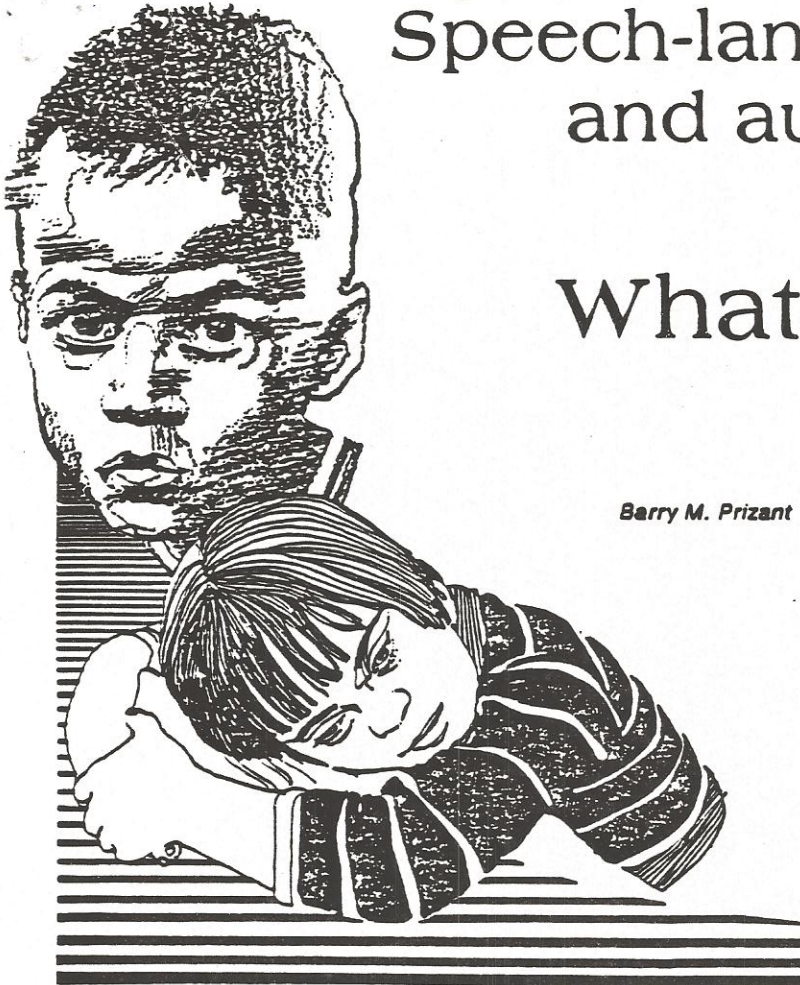


Speech-language pathologists and autistic children:

What is our role?



Barry M. Prizant

Psychiatrists and psychologists have come to reject psychogenic explanations of autistic behavior. As a result professionals are now emphasizing the centrality of cognitive-linguistic and social deficits in autism. These trends place speech-language pathologists as central figures in the total programming process for autistic individuals. Barry Prizant, associate professor, Southern Illinois University at Carbondale, examines the emerging role of speech-language pathologists in assessing the special problems of autistic children, and in helping to plan programs which focus on communication and social interaction. In the following pages, Prizant shares his thoughts in the first of a two-part series.

The syndrome of autism is a complex and puzzling disorder first described by Leo Kanner in 1943. In identifying "infantile autism," Kanner was attempting to indicate "a major differentiation within the overall group of children with so-called childhood schizophrenia" (Rutter, 1968, p. 1). Kanner vividly described the behavioral patterns of 11 children who were characterized by "extreme autistic aloneness." He noted that early onset (within the first two years of life) was a major determining factor that differentiated autism from childhood schizophrenia.

This view of autism as distinct from childhood schizophrenia was reiterated more recently by Rutter (1972), although other researchers espouse an intimate relationship between the two clinical categories (Ornitz, 1969). The behavioral symptomatology initially cited by Kanner included a lack of responsiveness to other human beings, an insistence on preservation of sameness in the environment accounting for ritualistic behavior, and delayed language and language abnormalities, including immediate echolalia, delayed echolalia and pronominal problems.

The research of the past three decades has provided much information regarding the specific nature of the cognitive, linguistic, and perceptual deficits of autistic children. Although a variety of theories have been posited to explain the etiology of autistic symptomatology, (see DeMyer, 1975; DeMyer, Hingtgen, & Jackson, 1981; Rutter, 1978; Ornitz and Ritvo, 1976 for reviews), there is no substantial evidence supporting any

one theory. In fact, recent research has suggested that multiple etiologies probably underlie autistic symptomatology (DeMasio, Maurer, DeMasio, & Chui, 1980).

Research has provided evidence (Cohen, Caparulo, & Shaywitz, 1977; Piggot, 1979) that some type of organic involvement is the most probable etiological factor. Thus, the purely psychogenic theory popularized by Bettelheim (1967) has lost virtually all credibility. Bettelheim drew analogies between the behavior of autistic children and victims of Nazi concentration camps and concluded that infantile autism is "a state of mind that develops in reaction to feeling oneself in an extreme situation, entirely without hope" (p. 68). This "state of mind" was considered to be a reaction to pathological parental, specifically maternal, behavior.

Research has demonstrated that Bettelheim's theory did not maintain its integrity when he tried to explain the very real cognitive, perceptual, and communicative deficits of autistic children within a purely psychoanalytic orientation. Despite Bettelheim's influence in the 1960's, it is now generally accepted that autistic individuals demonstrate disturbances of developmental rates and sequences, disturbances of responses to sensory stimuli, disturbances of the capacity to relate to people, and disturbances of speech, cognitive-linguistic processes and nonverbal communication which cannot be explained within a psychogenic framework (NSAC, 1977). The recognition of the failure of Bettelheim's theory by other professionals came to the great relief of many

parents whose interactive behavior was unjustly implicated as the factor responsible for their children's behavioral abnormalities.

Amidst a body of literature characterized by conflicting opinions regarding etiology and diagnosis, the severe communication problems of autistic individuals emerge as the most striking and consistently discussed behavioral deficits. Prominent researchers, primarily from the discipline of psychiatry, are emphasizing the centrality of language and communication deficits to the diagnosis of autism (Caparulo & Cohen, 1977; Churchill, 1978; DeMyer, 1979; DeMyer et al., 1981; Rutter, 1978). In fact, Churchill and Rutter have gone as far as to postulate that the cognitive-linguistic impairment characteristic of autistic children may be the primary disturbance and could explain many other symptoms as secondary to the severe communication deficiency. More recently, Fay and Schuler (1980), researchers in communication disorders, have reemphasized the primacy of communication and cognitive problems to autism. Fay indicated that the extensive pattern of communication deficits in autism can provide child language researchers and speech-language pathologists with much information regarding other language disorders, as well as enhance our understanding of the normal development of language and communication.

In light of the growing emphasis on language and communication problems, speech-language pathologists are currently being challenged to accept a major role in assessing and planning strategies for the habilitation of autistic children and adults. The recognition of this emerging role is being emphasized by federal and state agencies, as well as by parent organizations and professionals in other disciplines. In a recent request for proposals for "Model Education Programs for Autistic Children and Youth," the U.S. Department of Education stipulated that such programs must focus on "curriculum development in communication and social interaction" (p. 7). In a recent report, the Illinois Study on Autism (1979), the importance of the speech-language pathologist was also emphasized:

Lack of any meaningful communicative skills is one of the most critical and universal deficits of autistic children. Their progress in all areas depends heavily on their developing some method of communication. Therefore, a communication specialist is a vital member of the staff component. (p. 102).

In an editorial comment in a recent issue of the *NSAC Advocate* (1980), an official newsletter of the National Society for Autistic Children, it was stated that "Circumventing the communications handicap is the single most important task facing parents and educators who work with children with autism" (p. 4). Finally, Paluszny (1979) has stated that "The role of the speech pathologist in the diagnosis and treatment of the autistic child is a primary one" (p. 32). This emerging role for the speech-language pathologist can be partially attributed to the concerns of parents. Based on her studies and clinical experiences with 155 families with autistic children, DeMyer (1979) indicated that:

Speech and communication problems were uppermost in the minds of parents of autistic



children . . . In nearly every case parents named communication difficulty as being one of the main reasons they came . . . to get help for their autistic child. In 36% of cases the parents reported it as being the problem that worried them the most . . . we have come to the conclusion that the central problem of the autistic child is his language difficulty. (p. 39).

Problems in planning for intervention

Due to the nature and severity of communication problems in autism, speech-language pathologists who are only peripherally involved with this population are often frustrated by the inordinate programming emphasis on preacademic or academic skills or the focus on the elimination of specific deviant behaviors such as hand-flapping and rocking. Attempts to extinguish such behaviors are often undertaken whether or not they interfere with learning, or can ever be successfully eradicated through behavioral techniques.

In many cases, such behavior can not be successfully modified or eliminated because it is not under the control of environmental determinants. On the other hand, many researchers, teachers, and parents consistently note that an improvement in behavior usually follows and may be contingent upon gains in communicative skills. It appears that much undesirable and deviant behavior occur as a result of the frustration and confusion autistic individuals experience due to their lack of ability to affect their environment through communication with others. Therefore, language and communication goals should be priorities in planning programs and curricula for autistic individuals, for specific progress in communication often enhances progress in many other areas (DeMyer, 1979).

Another major problem in the planning of educational and communication programs for autistic children is that individuals who are not very familiar with language and communication processes and development may be primarily responsible for planning such programs. For example, in his book on language training, Lovaas (1977) justified his operant approach to language training by stating that "there is a great deal which we do not know as yet about language learning" (p. 4). Lovaas, in citing the failures of his program, indicated that "the training regime . . . may have been responsible for producing the very situation—specific restricted verbal output—which we observed in many of our children" (p. 170).

Unfortunately, Lovaas failed to integrate into his program what we have learned about language intervention over the past two decades. This failure may have been due to his apparent unfamiliarity with the recent literature in language development and its disorders, which emphasizes the interaction of social,



cognitive, and linguistic factors in language learning. Unfortunately, Lovaas' approach and other approaches (Gray & Ryan, 1973) to language training which are based primarily on sound/word/sentence imitation have had a major influence on programming for autistic children, often resulting in superficial verbal behavior that has to be untrained in order to encourage spontaneity and flexibility in language usage (Prizant, 1975). Most programs in speech-language pathology are beginning to provide in-depth training in the areas of language, communication, and cognition.

Speech-language pathologists are thus becoming the most qualified individuals for constructing communication curricula which would result in maximizing functional language skills, as well as optimizing spontaneity, generalization, and carry-over of such skills.

Role of the speech-language pathologist

Ricks and Wing (1975) stated that impairments affecting language and communication in autistic children "have the greatest importance in practice, since they determine the type of education and management needed by the child" (p. 219). This statement clearly indicates that the role of speech-language pathologists must go beyond the provision of episodic ancillary services, primarily due to the nature and severity of the communication deficits in autism. Ideally, speech-language pathologists should be involved centrally in all of the following dimensions in planning and executing a program for autistic individuals which places an emphasis on the acquisition of communication and interaction skills.

Assessment of cognitive, linguistic, and social-interactive skills

Speech-language pathologists are faced with the formidable task of determining the level of functioning of an autistic child in order to plan appropriately for communication intervention. Obviously, a thorough knowledge and application of current assessment strategies and procedures (Chapman & Miller, 1980; Lund & Duchan, in press; McLean & Snyder-McLean, 1978; Miller, 1978, 1981) is essential. However, they are confronted with additional problems in evaluating autistic children.

This author wholeheartedly agrees with Fay and Schuler (1980) that other than identifying the existence of a problem, standardized language assessment instruments may be of little value with autistic individuals for a number of reasons. First of all, procedures for administration usually have to be modified to such an extent that it would be difficult to justify comparing the results of an autistic child's performance to that of the population on which the test was standardized.

Secondly, there is increasing evidence that verbal autistic individuals may display different strategies and stages in language acquisition (Baltaxe & Simmons, 1977; Prizant, Note 1; Prizant & Duchan, 1981): Thus, one can not assume that it is valid to compare language skills of autistic individuals to a normal population.

Thirdly, autistic children, more than any other group of language-impaired individuals, have clearly demonstrated that linguistic skills are not isomorphic with communicative skills. Standardized instruments may help to identify the presence or absence of linguistic skills, however, autistic children's performance on standardized instruments may tell us very little about their ability to use such skills in communication. A discrepancy between linguistic skills and communicative skills in autistic individuals is the rule rather than the exception. Finally, standardized instruments do not take into account deviant language patterns demonstrated by most autistic children, and the way that such deviant language characteristics may function in communication and interaction. Procedures for assessment and areas to be assessed should be modified accordingly as we acquire more information about cognitive-communicative processes in autistic children.

Determining a child's readiness to use a symbolic communication system

Approximately 35-50% of autistic children are mute (Prizant, 1975). A crucial decision that must be made is whether a child is cognitively ready to use a representational system for communication. What may often appear to be intentional, goal-directed, means-ends behavior in the young nonverbal autistic child can be a result of the establishment of situationally specific routines. Therefore, the flexibility and adaptability of such behaviors must be of overriding concern when evaluating cognitive prerequisite skills. To make such judgments, observation of the child across interactive situations, tasks, and environments is crucial. The child's exploration and play with common toys and objects, understanding of causality, means-ends behavior, as well as interactive patterns with familiar and unfamiliar individuals must be considered when evaluating autistic children.

Chappell (1979), Fay & Schuler (1980), Lund & Duchan (in press), Prizant & Duchan (1980), and Chapman & Miller (1980) discuss specific social-cognitive areas to be assessed in reference to determining a child's readiness to use a symbolic communication system, the complexity of the system to be introduced, and the modality of such a system (e.g., visual, auditory, visual-auditory). Alpert (1980) has developed an assessment procedure to help determine the optimal nonspeech mode for autistic children who have failed to acquire verbal communication, but who show the cognitive potential for using a representational system for communication. Schuler and Baldwin (1981) also discuss issues in choosing nonspeech communication systems for autistic individuals.

This author has heard too many anecdotes of attempts to teach communication skills to autistic children

through a stimulus-prompt vocal-imitation paradigm, sometimes extending over years, with little consideration for a child's cognitive readiness to use a symbolic system. This is not only a waste of the child's time, but it can cause sufficient frustration for the clinician and the child such that the training in itself induces failure in interaction. A child must be approached at his cognitive and interactive level of functioning, and intentional goal-directed behavior must be elicited and developed into more conventional vocal or nonvocal modes of communication. For example, the use of sign language has achieved some limited success in previously nonlanguage autistic children when signs were built upon nonverbal intentional behavior (Schaeffer, 1980; Schaeffer, Musil, & Kollinzas, 1980).

It must be noted that research concerning the so-called cognitive and social prerequisites to symbolic communicative behavior is still very much in its infancy. Moreover, there is evidence to suggest that the specific perceptual and cognitive skills and strategies acquired by autistic individuals may differ significantly from those of normal children and other cognitively and/or linguistically impaired children such as retarded or aphasic children (Caparulo & Cohen, 1977; Hermelin & O'Connor, 1970). The available literature should thus serve as a tentative guide to assessment and the results of a communication evaluation should be considered in reference to the idiosyncratic learning patterns and strategies of autistic individuals.

Assessing comprehension of language

As Chapman (1977) and Chapman, Klee, and Miller (1980) indicated, normal children in prelinguistic and early linguistic stages develop strategies which enable them to respond appropriately to language in specific contexts with little, if any, comprehension of the utterances directed to them. By relying on situational cues, prior knowledge of object functions, and recognition of object labels, it may appear that autistic individuals' appropriate reactions are in specific response to the language directed to them. Autistic individuals, especially those with relatively higher cognitive skills, often become quite adept at using extralinguistic and prosodic cues in responding. They may spuriously appear to comprehend the semantic-syntactic relations expressed in utterances when their comprehension deficit is actually masked by their knowledge of familiar routines and reliance on situational cues. It is not uncommon to find professionals who work with autistic individuals making "rich" interpretations of their receptive language abilities due to the specific response strategies they have developed. Such strategies may include the use of contextual cues in responding to utterances.

It is the responsibility of speech-language pathologist to determine an individual's level of comprehension of specific lexical items and the semantic domain (underlying conceptual knowledge) coded by lexical items, as well as comprehension of the semantic-syntactic relations underlying and expressed in utterances. Situational and gestural cues must be systematically

controlled and varied in relation to utterances directed to autistic individuals in order to determine the relative reliance on extra-linguistic cues in responding to language. Ideally, probing for language comprehension should occur in many communicative contexts and with many individuals to get a reliable assessment of language comprehension. It is then the responsibility of speech-language pathologist to inform and work with parents and other professionals to enhance the receptive language skills of autistic individuals by emphasizing the relationships among language, environmental referents, and ongoing activity.

Assessing expressive language

One of the most complex tasks facing speech-language pathologists in specific reference to an autistic individual's communicative abilities is constructing a clear picture of the person's productive language skills, and the degree of intentionality underlying language production. Deviant speech and language characteristics of autistic individuals have been discussed in detail by Fay and Schuler (1980), Baltaxe and Simmons (1975), Ricks and Wing (1975), Doherty and Swisher (1978), and Prizant (1975). Fay and Schuler (1980) and Prizant (1978, Note 1) discuss in detail the very complex issue of intentionality. These authors emphasized that in order to determine how intentional and goal-directed an autistic child's language use is, the speech-language pathologist must assess language usage in relation to extra-linguistic factors. These include nonverbal behaviors, and the history of usage of utterances which may appear to naive observers to be no more than meaningless immediate and/or delayed repetitions. In addition, a child's history of language development may provide important information (Swisher, Reichler, & Short, 1976).

Schuler (1979), Prizant and Duchan (1981), and Prizant and Rydell (1981) emphasized the fact that so-called deviant language characteristics such as immediate and delayed echolalia must be examined as probable transitional and functional phenomena for many autistic individuals, rather than dismissing and judging such verbal behaviors as nonfunctional and undesirable. Prizant and Duchan have specifically questioned the clinical strategies of Schreibman and Carr (1978) and Lovaas (1977) who attempted to extinguish or replace echolalic utterances with rotely trained verbal routines. According to Prizant and Duchan, and Fay and Schuler (1980), an autistic individual's deviant language behavior must be evaluated in reference to that individual's cognitive, linguistic, and social skills. Prizant and Duchan, and Prizant and Rydell found that the echolalic patterns of young autistic children served specific cognitive and communicative functions. Creedon (Note 2) has suggested that echoic signing may serve some similar functions as vocal echoing. Prizant (1978, Note 1) also suggested as did Baltaxe and Simmons (1977), and Voeltz (Note 3) that autistic individuals may show evidence of a unique language acquisition strategy; that is, they may acquire linguistic knowledge through analyzing and breaking down echoic segments. This unique strategy has infrequently been reported in some

literature on language acquisition of normal children (Clark, 1974, 1977, 1978; Peters, 1977, 1980). Language intervention strategies must be based on analyses of each individual's linguistic patterns in relation to his cognitive skills, and patterns of language usage, rather than using blanket or programmed approaches.

The responsibility of speech-language pathologists should also include educating parents and other professionals in reference to patterns of language production and usage of autistic individuals. Deviant expressive language patterns can be extremely confusing and misleading for those with little background in language and cognition and often lead to an over-estimation of an individual's expressive abilities.

This author has been impressed by the comments and reactions from parents and professionals at conferences and workshops. The basic theme is "now I finally understand something about my child's strange language behavior." The invariable result is that those interacting with autistic individuals learn to develop a more accurate picture of their linguistic skills, and such knowledge can be applied when interacting with them at home or at school. For a parent or professional, it is understandably difficult to comprehend why a child may be able to repeat eight word utterances or sing long songs, yet can not communicate in single word utterances. It is the speech-language pathologists' responsibility to put some of these mysteries to rest.

Assessing language usage

As mentioned, the acquisition of receptive and expressive linguistic skills does not necessarily translate into progress in communication for autistic individuals. Many verbal autistic individuals can easily learn lexical items in the context of serving a referential function such as labeling or naming. However, spontaneous and intentful use of language to consistently provide new information (McCaleb, 1981) and to serve other functions such as directing others' behavior, requesting objects, expressing intentions, etc., is the most difficult and important goal of an autistic individual's communication program. This component is also the most frequently overlooked aspect of a communication program. Speech-language pathologists must functionally analyze language patterns of autistic individuals using systems that indicate what an individual accomplishes through language, rather than simply what he can respond to or can produce when prompted (Prizant, in press).

Deviant language characteristics which are so prevalent in this population must also be examined in reference to functional usage, and not just simply dismissed as socially undesirable. No matter how different such patterns appear, professionals must begin to consider them as an inherent part of autistic children's developing linguistic system. The systems of functional language analysis now being used with normal children and with other language deficient children can be appropriately modified and used as guidelines for the analysis of the language of autistic children (Chapman and Miller, 1980; Dore, 1975; Halliday, 1975; Miller, 1981). Systems of classification for deviant language characteristics have been

developed by Prizant and Duchan (1981) for immediate echolalia and for delayed echolalia (Prizant and Rydell, 1981). Fay and Schuler (1980) and Lund and Duchan (in press) also provide valuable suggestions for functional analyses. Most importantly, speech-language pathologists must be flexible enough to analyze the specific functional usage pattern of each autistic individual, rather than solely depend upon taxonomies from the literature. Speech-language pathologists must also emphasize the difference between verbal production and its communicative value to other professionals who often confuse the very real differences among speech, language, and communication (Muma, 1978).

Assessing interactive skills

As with deviant language behavior, deviant patterns of interaction of autistic individuals must be assessed and described very carefully by the speech-language pathologist. Gross categories such as interactive vs. non-interactive, and even simple frequency counts of interactive behaviors provide little information concerning specific qualitative patterns of interactive attempts, both verbal and nonverbal. For example, amount of eye contact tells us very little about how eye contact is used to establish mutual reference and joint activity (Prizant & Duchan, 1980).

Parents of autistic individuals, and professionals who are primarily involved with autism, are well aware that the stereotype of the severely self-abusive, noninteractive, withdrawn autistic child is largely a myth. Such symptomatology is only apparent in some very young children who become increasingly interactive in development, in children who are punished for noncompliant behavior when their behavior may be in reaction to difficult task demands, or in children faced with the unfortunate circumstances inherent in institutionalization, especially when appropriate intervention in such settings is unavailable. Autistic individuals often do interact; however, their patterns of interaction tend to be highly variable from one situation to the next. Also, such patterns are often very different from what would be considered normal interaction.

As mentioned, psychoanalytically oriented theorists used the symptomatology of nonrelatedness as the cornerstone of their theories of autism (Bettleheim, 1967). In fact, the word autism is derived from the Greek word "autos," meaning preoccupied with self. Too often, the interaction problem is seen as an active, voluntary withdrawal on the part of the autistic individual. Although this may be true for some individuals in specific cases, many autistic persons demonstrate problems in interaction due to severe social-cognitive or social-perceptual problems. In other words, it may not be that some autistic individuals do not wish to interact; rather, they are deficient in their knowledge of the social conventions of interaction, whether it be through verbal or nonverbal means. Thus, interactive behavior needs to be thoroughly evaluated in order to determine the extent of deficiency and appropriate intervention strategies.

Prizant and Duchan (1980) have devised a system of interactional analysis designed specifically for severely interactively impaired populations. By drawing from the ethnomethodological and sociolinguistic literature, they have cited a number of areas that must be evaluated regardless of the cognitive-linguistic level of an individual. These areas include the specific patterns in initiation attempts of an individual, responses to initiations of others, turn-taking behavior, gaze behavior, body posture and orientation, proxemic behavior, and interactional synchrony or smoothness. Within each area, the modality of interaction, the flexibility or rigidity of such behavior, and the quality and/or purpose of such behavior must be considered. The assessment of interactive patterns obviously overlaps with other assessment areas previously discussed. However, interactive behavior must be considered as a major area of analysis in its own right.

It is a commonly cited observation that in the highest functioning autistic individuals, problems in social interaction remain the major obstacles to a productive and independent life (Akerly, 1974). This is often the case even after specific behavioral, perceptual, and linguistic deficits have been overcome or have been minimized due to compensatory strategies. In fact, many autistic individuals with superior intelligence and/or productive technical skills fail to maintain employment because of social interaction problems. Clearly, social interactive skills must be a priority in the habilitation of autistic individuals. If autistic children are trained to use language in interactively sterile environments (e.g., labeling pictures), the most frequent result is a behavioral repertoire of situationally specific responses with little generalization to other environments. Social interaction must provide the framework for enhancing language and communication skills in autistic children, just as it does for normal children (Mahoney, 1975).

In summary, speech-language pathologists should be central figures in assessing communicative skills of autistic individuals. This position is supported by 1) the recent research and literature on autism which emphasizes the centrality of cognitive-linguistic and social deficits to the autistic syndrome, and 2) the professional training of speech-language pathologists that emphasizes the interdependency of social, linguistic, and cognitive behavior. A thorough communication evaluation is the best source of information for appropriate and relevant communication programming. However, speech-language pathologists must work closely with parents and professionals, due to the nature and severity of the communication problem in autism. Part II of this article will discuss specific concerns faced by speech-language pathologists, parents, and other professionals in planning intervention strategies.

Part II in August Asha.

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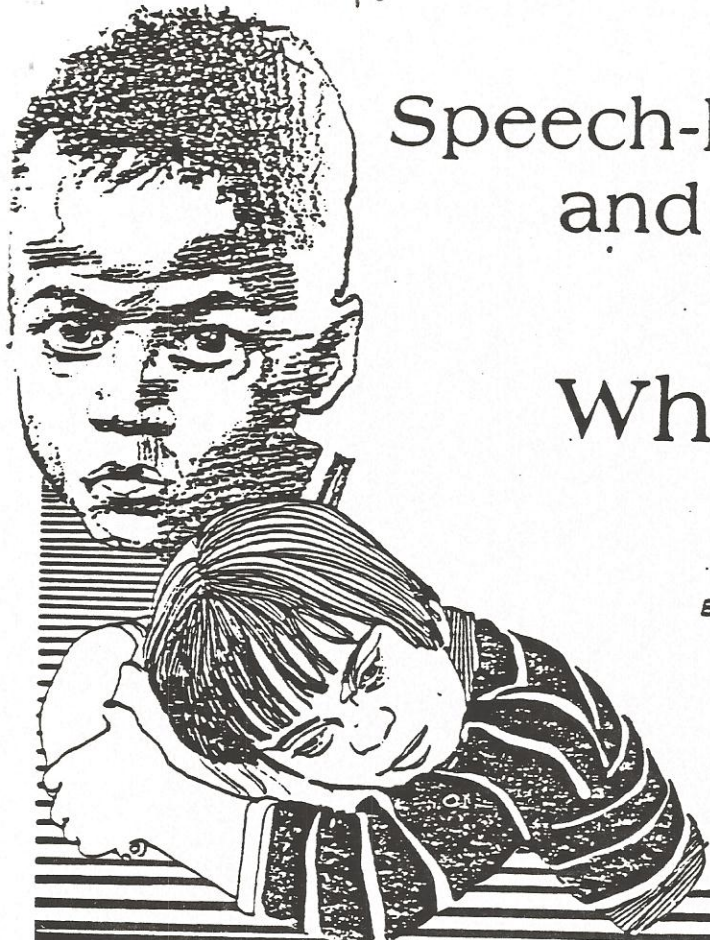
Tina E. Bangs
1343 Moursund Avenue
Houston, TX 77030

Speech-language pathologists and autistic children:

What is our role?

Barry M. Prizant

Part I of this article discussed the role of speech-language pathologists in assessing the communicative skills of individuals with autism. Part II will describe how speech-language pathologists must combine their unique expertise with that of parents and other professionals in order to provide appropriate communication intervention strategies for autistic individuals.



Developing a communicative-interactive curriculum

With the results of a thorough cognitive, linguistic, and communicative evaluation, the speech-language pathologist must enter into a partnership with parents, educators, home-bound workers and other professionals who are significant people in the life of an autistic person. A multidisciplinary approach is not enough; a program of habilitation must be an integrated and carefully synthesized plan with a consistent underlying philosophy or orientation. The orientation should be firmly rooted in the belief that improvement in communication skills needs to be *the primary focus* of the plan.

One's ability to communicate transcends academic boundaries or disciplinary segmentation. It is the foundation of social, cognitive, and emotional growth. It is also the key to independence and personal productivity, for without a means to communicate, one cannot learn from others and ultimately develop a sense of self-integrity and self-differentiation.

To fully realize the goal of a communication-based program, common problems that face speech-language pathologists and other people involved with autistic individuals must be identified and a plan for intervention must be devised. The intervention strategies and target skills will depend, for the most part, on an individual's cognitive-linguistic level and social-interaction behavior as described by the communication evaluation. Equally vital considerations include the identification of the most pressing problems faced by an autistic individual's

caregivers such as elimination of disruptive behavior or development of self-help skills. A program for an autistic individual needs to be shaped to resolve short-term problems, make progress towards long term goals, and exploit each individual's areas of interest and strength.

Nietupski, Scheutz, and Ockwood (1980), professionals in special education, have presented their concept of the role of the speech-language pathologist in dealing with severely handicapped students, including autistic individuals. They argued against an isolated communication therapy model, i.e., the provision of services in a segregated environment, and stressed the need for communication and interaction among special educators and speech-language pathologists in order to provide "severely handicapped students (with) communication skills instruction all day, every day; not 1/2 hour weekly" (p. 15). The authors outlined an alternative therapy model which demands a redefinition of the traditional roles of speech-language pathologists and classroom teacher. According to Nietupski et al., speech-language pathologists should provide direct services in natural environments such as the classroom, as well as consultation to the classroom teacher regarding communication development. Classroom teachers should implement suggestions and provide information to speech-language pathologists regarding an individual's other needs including self-help skills, gross and fine motor skills, prevocational skills and academic skills.

Obviously, the large caseload faced by most

Speech-language pathologists would largely preclude the establishment of such a model. For those who work with autistic individuals, small caseloads must be the rule rather than the exception. In extending Nietupski, et al.'s integrated model, it would be even more effective if speech-language pathologists could provide consulting services to caregivers and other professionals. This may seem idealistic and unmanageable. However, since most professionals and parents agree that communication development is the most crucial area for most, if not all autistic individuals, the primacy of the role of speech-language pathologists should be an obvious priority for future planning. With a reduced caseload, clinicians should interact and work with each autistic individual in settings such as meal-time, motor activities, and vocational activities so that communication intervention can be as appropriate as possible for the needs of the individual across a wide variety of environments.

There are a number of crucial topics and concerns which must be addressed when planning intervention programs for autistic individuals. It is inevitable that fragmented efforts by professionals result in limited progress at best. In some cases it causes power struggles among professionals, and confusion for caregivers and for the person who is to receive the benefits of such help. DeMyer (1979) found that in 57% of the cases she studied, the parents interviewed found professionals to be "not helpful," with 28% of the parents expressing mixed feelings towards professionals. This is a sad indictment of so-called experts who earn their living by supposedly helping others. It is reasonable to assume that much of the confusion felt by primary caregivers results from differing opinions on how to best meet the needs of the autistic individual. An integrated model, once it is accepted as the most viable model for successful habilitation of autistic individuals, could help to circumvent such problems.

If it is accepted that autistic individuals have special needs which differ significantly from other individuals with special needs, it is crucial that speech-language pathologists and other professionals be aware of these special areas of concern. Because of the very wide range of cognitive and communicative abilities in autism, a general discussion of special areas of concern will now be presented. These considerations are of crucial importance in planning appropriate communicative-interaction programs for autistic individuals.

The need for structure

It has been clearly demonstrated that consistency and predictability in the environment helps autistic individuals to function in a world that is largely unpredictable (Ney, Plavesky, & Markey, 1971). Proponents of behavior modification programs emphasize the importance of highly structured discrete trial training and consistent use of predetermined consequent events in teaching new skills to autistic individuals (Donnellan-Walsh, et al., 1976). Those of a more cognitive orientation see the importance of structure and consistency as aiding the autistic individual in observing regularities and extracting

rules that both the individual and other persons must follow in order to function successfully.

In 1801, years before the term behavior modification was coined, Itard (1962) indicated that Victor, his "wild child" who displayed many autistic-like behaviors, needed structure and predictability as all human beings do, only to an extreme degree. Those who work with autistic individuals are well aware of the fact that if an environment or a daily schedule is not predictable, autistic individuals will generate and follow their own routines and rituals. If sudden or unpredictable changes are introduced, or if attempts are made to interfere in the execution of a ritual, results can be catastrophic. Thus, there is the need for "preservation of sameness" (Kanner, 1943). Such ritualistic behavior can be observed in autistic individuals with limited cognitive abilities, usually in the form of repetitive sensorimotor exploration and motility patterns (e.g., rocking, finger posturing). In autistic individuals with higher cognitive abilities, ritualistic behavior is usually observed in the form of maintaining a rigid daily schedule and performing activities in a invariable sequence and precise manner (Bemporad, 1979).

The need for structure can be supported by two distinct observations. First, a predictable and consistent environment, especially concerning interactive styles that professionals and parents use, will help autistic individuals realize the potential power of their communicative attempts, as well as learn the conventions followed in social interaction. Prizant and Duchan (1976) suggested that the reason most autistic children interact with adults long before they interact with other children may be attributed to the relative predictability of the adults' behavior. Normal human infants learn about the structure of communication through the establishment of early interactive routines (Bruner, 1975), thus it is apparent that the development of interactive routines should form the basis of communication intervention. Secondly, by definition, it is the nature of the autistic syndrome that the need for predictability and structure is greatly pronounced. Those who interact with autistic individuals can exploit this need in order to provide motivation for the autistic individual to interact and communicate, even if the purpose to interact is to maintain a routine or ritual. It must be recognized, however, that there are particular dangers in becoming too structured in planning intervention.

The need for flexibility

Professionals and parents are all too familiar with the "Catch-22" of living and working with autistic individuals. That is, they need consistency, predictability, and perceivable structure in their daily routine and environment to learn and function optimally. However, the need to maintain routines and preserve the structure eventually becomes a hindrance and in some cases a major obstacle to learning new skills, as well as coping with and adapting to departures from established

routines which are rigidly maintained during intervention (Shepherd and Shepherd, 1980). In fact, many catastrophic reactions and disruptive behaviors are often triggered by changes in routine.

Parents often note that changes in furniture arrangements, school holidays, alterations in meal-time schedules and other departures from routine can cause great confusion and anxiety for their child. Some children direct their confusion outwardly and are thus characterized as acting out, aggressive, destructive, and prone to unpredictable outbursts. Other children, especially more passive children, direct their anxiety towards themselves and are thus labeled self-abusive and self-injurious. Of course, many of the behaviors just noted may be precipitated by other factors and the same individual may be both outwardly-directed and self-directed in his reactions to change.

In addition, parents and professionals, anticipating such reactions when they know a change in routine must occur, are often extremely surprised when a child adapts well. On the other hand, some children may react negatively to what would seem to be extremely minor changes such as a change in seating arrangements. Each child's patterns of behavior are extremely idiosyncratic and at the same time highly variable, especially in young autistic children. Flexibility must be an inherent part of an autistic individual's routine to help circumvent some of the problems. For example, slight changes may be introduced involving materials, location of activities, and the temporal order of activities within an overall predictable schedule.

In specific regard to planning for language and communication needs, building in flexibility is crucial. The hallmark of successful communication is adaptability and flexibility even for normal individuals. The recent literature in developmental pragmatics takes note of communicative abilities and behaviors such as style shifting (Gleason & Weintraub, 1978), topic shifting, highlighting new vs. old information (Greenfield, 1979), use of softening devices for politeness (Parsons, 1980), revision behaviors and repair strategies (Gallagher, 1977), alternative reference (Muma, 1978), and knowing when to take and yield turns in social interaction (DeMaio, 1980). All of these abilities which are essential for appropriate and fluid communicative interactions involve an individual's skill in adapting to situational demands and listener needs. Prerequisite to these communicative adjustments is one's ability to perceive changing demands of different situations and communicative interactions. These demands are precisely the obstacles with which most verbal autistic individuals have difficulties dealing with due to the severity of their social-cognitive deficits.

Thus, in planning for a communicative-interactive curriculum, speech-language pathologists must help professionals and parents realize that the most desirable and functional communicative system is one that is flexible and adaptable. Too often, language training results in a specific repertoire of verbal behaviors used by autistic individuals that is highly constrained. Flexibility and adaptability are features of communication and interaction which must be

implemented. Most autistic individuals will always be somewhat ritualized and rigid in their behavior if normal communicative behavior is used as a standard for comparison. Once social-interactive routines are established in a functional milieu, changes in such routines must be systematically introduced and approximate changes that the autistic individual is likely to encounter frequently across situations. For example, autistic children must learn that more than one adult can provide for their needs in most situations, or that there are alternative ways to express needs and desires if initial attempts are not successful. The difficulty of helping autistic individuals acquire such higher communicative abilities is recognized. However, if we view such abilities as goals for which to strive, we can relieve the inordinate pressures placed upon parents and professionals who conceptualize success only in reference to normal behavior. These caregivers must become sensitive to small changes that an autistic individual accomplishes.

Motivation: A key to success

Parents and professionals often comment that if an autistic individual's interest in an activity can be stimulated, half the battle is won in teaching new skills related to the desired activity. It is thus not surprising that many activities involving musical, visual-spatial, and mathematical skills are often mastered in a relatively short period due to the degree of perceivable structure in such activities. Unfortunately, one of the areas that least motivates most autistic individuals is social interaction. Behaviorally oriented researchers claim that social contingencies do not acquire reinforcing value for autistic children (Ferster, 1961). In other words, it often appears as if autistic individuals derive little pleasure from the content of social interaction, other than the desire to engage in repetitive interactive routines such as incessant questioning.

It is somewhat surprising that renowned researchers have only recently cited a lack of motivation as the primary reason for failure to teach flexible communicative behavior (Lovaas, 1978). This probably has occurred because researchers of a behaviorist persuasion have long considered unobservable factors such as motivation and intentionality as outside the realm of scientific and clinical inquiry. Thus, motivation was removed from the domain of an individual's learning strategies and was thrust upon external factors as indicated by the concept of reinforcing properties of an object or event. More recently, however, behavioral researchers have explained such unobservables as boredom and lack of motivation by introducing the concept of intrinsic reinforcers; that is, natural consequences of an individual's behavior which are perceived as reinforcing by the individual. For example, Goetz, Schuler, and Sailor (1979) emphasized the need to teach functional language skills such as requests which affect change in an individual's environment because such skills have "the potential of

being intrinsically reinforcing" (p. 335).

Regardless of philosophical orientation, the major problem that must be confronted by speech-language pathologists is discovering and successfully utilizing materials and situations which will motivate an autistic individual to initiate and maintain interaction (Prizant and Duchan, 1976). As mentioned, the establishment and use of predictable social-interactive routines such as turn-taking activities often is powerfully motivating because autistic individuals will attempt to maintain such routines. Systematic violation of routines that have been established often will motivate an autistic individual to initiate communicative attempts to prevent the violation. Some programs for autistic individuals build in such violations in planning activities (Illinois Center for Autistic Children, 1980).

Another major source of motivation is using materials and activities that may appear to be socially undesirable, but are of great interest to an individual (e.g., using bits of string and cotton in activities, creating interactive games around spinning objects and motor activities). There is some controversy as to whether such activities encourage the maintenance of abnormal behavior. In this author's experience, however, the success in communicative intervention that is largely attributable to motivational factors far outweighs the possible negative consequences of utilizing unconventional motivating activities. As mentioned, probably the most important factor in motivating an autistic individual to engage in communicative-social interaction is establishing a precedent of successful and enjoyable interactive routines in which the autistic individual is an active, rather than passive member. Such routines provide a framework and context for language intervention.



Initiator and respondent roles

A striking failure of language training programs in which a child is expected to respond verbally or nonverbally, is an individual's nonacquisition of spontaneous, intentional communicative behavior (Prizant, 1975). The literature on autism clearly indicates that autistic individuals learn in situationally specific ways (sometimes referred to as stimulus-bound learning), thus a recent emphasis has been on generalizing the use of newly acquired skills (Fay and Schuler, 1980). Since autistic individuals do not spontaneously generalize to the same extent as normally developing subjects, or even retarded individuals of equivalent cognitive level, generalization often is built into programs in the form of training skills in different contexts, and shifting or rotating materials in similar activities. It appears that autistic individuals also may learn communicative roles in equally specific ways. Therefore, if in language training, the primary communicative role is that of responding (e.g., pointing to objects, labeling objects upon presentation), it may be expected that the

individual will perceive his communicative role as a primarily respondent role, rather than as a role of initiator. This issue has been given very little if any attention in the autism literature, yet is of crucial importance in planning intervention.

Most language training programs appear to take for granted that spontaneous, initiated communication will naturally emerge out of receptive and expressive respondent training. If autistic individuals do perceive respondent versus initiated communication as "horses of a different color," the natural implication would be that in planning contexts and activities for communication intervention, speech-language pathologists must provide opportunities for autistic individuals to experience both roles. This would apply to autistic individuals of all cognitive levels because initiated communicative attempts can occur gesturally and vocally, as well as linguistically.

If it is understood that many communicative functions are primarily served through initiated acts such as requesting actions and objects, or requesting information, providing autistic individuals with the opportunity to develop skills in initiating interaction is crucial. As the individual learns that the environment can be affected by his intentional communicative attempts, it is then the speech-language pathologist's responsibility to teach more conventional forms of communication and help other caregivers to do so. In order to accomplish this goal, an individual's communicative intent must be considered, regardless of the form of communication utilized (e.g., gestures, echolalia), because most autistic individuals learn to produce linguistic forms before they learn about the communicative function that the forms may serve (Fay & Schuler, 1980).

Considering that the long term goal of all professionals working in autism is providing skills that will make autistic individuals as self-sufficient as possible, initiation of communication should be the primary focus of intervention programs. An individual who can spontaneously and purposefully meet his own needs through expressing his intentions is an individual who needs to rely less on others, and is thus more self-sufficient.

What autistic individuals have to offer speech-language clinicians

Thus far this discussion has dealt with what we, as speech-language pathologists, have to offer to autistic individuals, parents, and other professionals. Speech-language pathologists and researchers in communication disorders are also discovering the potential wealth of information autistic individuals have to offer regarding our knowledge of communication assessment and intervention, as well as our insight into communication as a complex and sophisticated interactive process.

The communication deficits in autism do not respect the traditional boundaries of analysis. More clearly than in any other developmental disorder, the communication problems of autistic individuals supersede semantic, syntactic, phonological, cognitive, and pragmatic



domains. An accounting of the communication problems of even high-functioning verbal autistic individuals practically defines the domain of pragmatic deficits (Fay, Prizant, Duchan, Schuler, Baltaxe, and Rees, 1979).

By its very nature, the severe cognitive-linguistic deficit of autistic individuals challenges speech-language pathologists to an extent that is rarely experienced with other communicatively impaired populations. Speech-language pathologists must rely on their creativity, spontaneity, and interactive sensitivity to develop a relationship with an autistic individual that is conducive to successful intervention. In addition, a clinician's ability to be acutely self-observant and self-critical is crucial, for success in intervention often depends upon modifying or adjusting interactive style to prevent or repair communication breakdowns.

Speech-language pathologists working with autistic individuals also need to become sensitive to minute changes or progress in the autistic client's communicative skills, for progress is often slow, and day-to-day variability and regression are frequently encountered phenomena. Due to the severity of the communication problem, speech-language pathologists must learn to adjust expectations of progress. In addition, the deviant language behavior and distinctly different learning strategies of autistic individuals demand that speech-language pathologists approach assessment and intervention with an open mind, not unlike anthropologists attempting to discover unique patterns of social behavior in other cultures (Richer, 1978).

For researchers in communication disorders and normal communication processes, the speech, language, and communicative behavior of autistic individuals offers insight into topics ranging from neurolinguistics to relationships among social, linguistic, and cognitive development. Furthermore, because the communicative abilities of autistic individuals are notoriously variable depending upon such factors as motivation and familiarity of situation and interactants, researchers are challenged to become more flexible in research methodology. Naturally occurring communicative behavior must be studied and appreciated in dynamic interactive contexts. The constraints inherent in highly controlled experimental research may result in an inaccurate picture of the communicative abilities of autistic individuals.

In expressing their reservations about the use of contrived environments for studying autistic children, Caparulo and Cohen (1977) stated that "we have become increasingly suspicious of results of the standard laboratory set-up, which may provide the control of variables but fail to reveal how closely performance is connected to fluctuations of motivation or state, at any particular moment" (p. 622). Finally, researchers are challenged to make their investigative

endeavors as relevant to clinical intervention as possible so that the potential communication skills of autistic individuals can be enhanced.

Conclusion

Autism is probably the most complex and pervasive developmental communication disorder. Because the study of autism is still in its infancy, and due to the recent emphasis on the pattern of the communicative-cognitive deficits, researchers and clinicians in speech-language pathology have a rare opportunity to make significant contributions towards an increased understanding of the syndrome. More importantly, speech-language pathologists working with parents and other professionals could help many autistic individuals to reach their potential as productive and interactive members of society.

Notes

- Note 1—Prizant, B. M. *Autism: Language, Cognition, and Social Interaction*. New York: Academic Press, Inc. (in preparation).
Note 2—Creedon, M. Personal communication, November 12, 1979.
Note 3—Voeltz, L. M. Syntactic rule mediation and echolalia in autistic children. Unpublished manuscript, University of Hawaii, 1977.

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