

Facilitating Functional Requesting in Pragmatically Impaired Children

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Requesting has been described as an early communicative function, one which is often infrequently produced by pragmatically impaired children. This case study presents a framework for assessing and managing a child who displayed a marked deficit in his verbal requests for objects, actions, and information. The assessment focused on evaluating the child's prerequisite skills and on examining the environment for request opportunities. The intervention consisted of working individually with the child and training his teacher to maximize opportunities for requesting in the classroom. The data indicate an increase in the child's classroom production of elicited requests for objects, actions, and information, and of spontaneous requests for objects and actions. These findings suggest the value of using intervention strategies which focus on the impaired child as well as his or her environment when teaching functional requests. Specific procedures are provided for implementing this two-pronged intervention approach.

McLean and Snyder-McLean (1978) suggested that for children to communicate with others, they must have the desire to influence or regulate the behavior of others and must recognize their ability to affect the environment and people in it. *Requesting*, an early developing form of pragmatic behavior, enables children to regulate behavior by asking others to provide objects, perform actions, or provide information. For children to produce successful verbal requests, they must have achieved particular linguistic, social, and cognitive prerequisites, and the environment must provide them with opportunities for regulating the behavior of others. This paper presents a system for assessing and managing the child's prerequisite skills and the environment which may be restricting the development of requesting.

Assessing Requesting: Child Prerequisite Skill Variables

A wide range of acceptable linguistic structures may be used in requesting objects, action, and/or information. Requests for objects and actions can be communicated through gestures and vocalizations (Bates, 1976) or through the child's production of lexical items which code particular referents in the environment. Requests for information are typically produced with "wh" questions (*who, what, where, why, etc.*), but a

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simpler linguistic level of this type of request is demonstrated when a child produces a single word plus rising intonation (Dore, 1975). Although the linguistic form of a child's request may not determine whether or not the adult responds, it may, nonetheless, influence the efficacy of the child's communicative attempt: The more specific the form of the child's request, the more effective he or she is likely to be in eliciting the desired adult response.

The social prerequisites for requesting include the child's recognition (a) of personal needs and desires, (b) that other people can help, and (c) that others will probably not act unless a specific request is made (Garvey, 1975). The minimal social prerequisite that the child must demonstrate is the desire to communicate.

In a general sense the cognitive prerequisites for requesting include knowledge of objects and events and the desire to obtain them (Dore, 1973); at a higher cognitive level the child must possess the ability to represent objects and events when they are not in view (Blank, 1974). The child's recognition that other people in the environment can act to accommodate the child's needs is a more significant cognitive component of requesting. This accomplishment has been associated with sensorimotor Stage V means/ends behaviors (Piaget, 1952, 1954). Several studies examining the link between cognitive development and language acquisition have revealed *agency* (i.e., recognition of others as initiators of actions) to be a necessary cognitive prerequisite to requesting (Olswang, 1978; Snyder, 1975; Sugarman, 1973).

Thus, in assessing the pragmatically impaired child who is not requesting, one would need to evaluate linguistic, social, and cognitive skills: What linguistic forms does the child use to code requests? Does the child regulate the behavior of others or have the desire to do so? Does the child recognize that other people can act as agents?

Assessing Requesting: Environmental Variables

In addition to the prerequisite skill variables, there are environmental variables which appear to be necessary for requesting. The environment would have to provide at least minimal opportunities for the child to request, either to affect others' behaviors or to obtain information about objects and events. McLean and Snyder-McLean (1978) described a facilitative reinforcing environment as including responsible people who provide frequent interactive opportunities for the child, who arrange frequent situations in which requesting can occur, and who consistently recognize and respond to the child's communicative initiations. Thus, the environment created by the adult determines, in part, the child's forthcoming requesting behaviors.

Whereas normally developing children may not need an adult to manipulate the environment to provide requesting opportunities, a more formal structuring of the environment often becomes necessary for pragmatically impaired children. Observations in a natural environment should focus on determining the following: Are there available opportunities for requesting? How do the adults encourage and respond to these opportunities? If the opportunities for requesting do not exist, or if the child is not aware of these opportunities, the request behaviors will probably be quite limited.

In summary, the goals of assessment are to identify deficiencies in the impaired child's linguistic, social, and cognitive skills and to evaluate the environmental factors

continuing to the limited requests. The goal of intervention is to provide a program which will enhance the child's development of deficient prerequisite skills and appropriately alter the child's environment.

Teaching Requesting

The program that follows was designed to increase a child's requesting behaviors primarily through the manipulation of the environment. Though the discussion thus far has addressed the child's prerequisite skill variables separately from the environmental variables, this has been done mainly for organization and clarification. The intricate interrelationship between the environment and the child's emerging cognitive, linguistic, and social skills must be acknowledged and, in fact, emphasized in intervention programs for pragmatically impaired children. Accordingly, this study focuses on altering a child's social skills and, to a lesser extent, linguistic skills through the manipulation of the environment. Specifically the program was designed to increase the child's *elicited*, novel, verbal requests for objects, actions, and information. The increase in elicited requests was meant to increase the child's recognition that other people want to and will help and to increase awareness that a specific verbal request is the most efficient means for obtaining help. The increase in the child's spontaneous requests and the improved communicative effectiveness should increase the environment would be manipulated by (a) increasing the number of opportunities for requesting to occur, and (b) increasing the adult's behaviors which direct the child's attention to the requesting opportunities.

Given the focus of the intervention program, the following research questions were addressed:

1. Can a pragmatically impaired child's elicited and spontaneous verbal requests for objects, actions, and information be increased?
2. Can adult request-elicitation behaviors be increased?
3. What is the relationship between the increased adult request-elicitation behaviors and the child's increased verbal requests?

METHODS

Subject

M, a 4-year 10-month-old boy, attended a preschool classroom for communicatively handicapped children at a university-sponsored special education facility. The class consisted of eight children, ranging in age from 3;5 (year:month) to 4;10, all of whom had been diagnosed as "language-impaired." The children had disorders in varying degrees in the form, content, and/or use of their language. M's language skills were delayed approximately 1½ years receptively and 2 years expressively. Language testing conducted just prior to this study (CA = 4;8) revealed the following results: M performed at the ninth percentile for his age on the *Peabody Picture Vocabulary Test* (Dunn, 1959). On both the *Assessment of Children's Language Comprehension* (Foster, Gidden, & Stark, 1973) and the receptive portion of the *Sequenced Inventory of*

Communicative Development (SICD) (Hedrick, Prather, & Tobin, 1975), M's most solid performance was at the 3;5 age level. On the expressive portion of the SICD, he performed most solidly at the 2;5 age level. He used primarily simple active declarative sentences. In a 50-utterance language sample, half of his productions consisted of nouns plus verbs and his mean length of utterance (MLU) was 2.6 morphemes. These results suggest adequate linguistic skills for requesting, but, as will be discussed, the lexical variety in requesting was limited. On cognitive testing, utilizing the Uzgritis and Hunt inventory (Uzgritis & Hunt, 1975) and other informal Piagetian procedures, M correctly completed all sensorimotor Stage 6 items and performed most like a child functioning in the preoperational period of development on sorting and seriation tasks. Although M was clearly delayed in language development, these testing procedures revealed that he seemed to have the necessary cognitive skills reported to be prerequisite for requesting.

The most striking aspect about M's speech and language was his interpersonal communication skills. M demonstrated characteristics of the population described by Bartak, Rutter, and Cox (1977) as "autistic type." For example, M often engaged in mild self-stimulating behaviors, such as hand waving, fingering, and spinning objects; he had limited eye contact and rarely responded verbally to another's comments; verbal initiations occurred primarily when he was very actively involved in a self-directed activity. For example, while playing with cars he might say "car crash" or "hit man." He rarely directed these initiations to others. Neither did the initiations seem related to another speaker's previous utterance nor did M in any way indicate that he

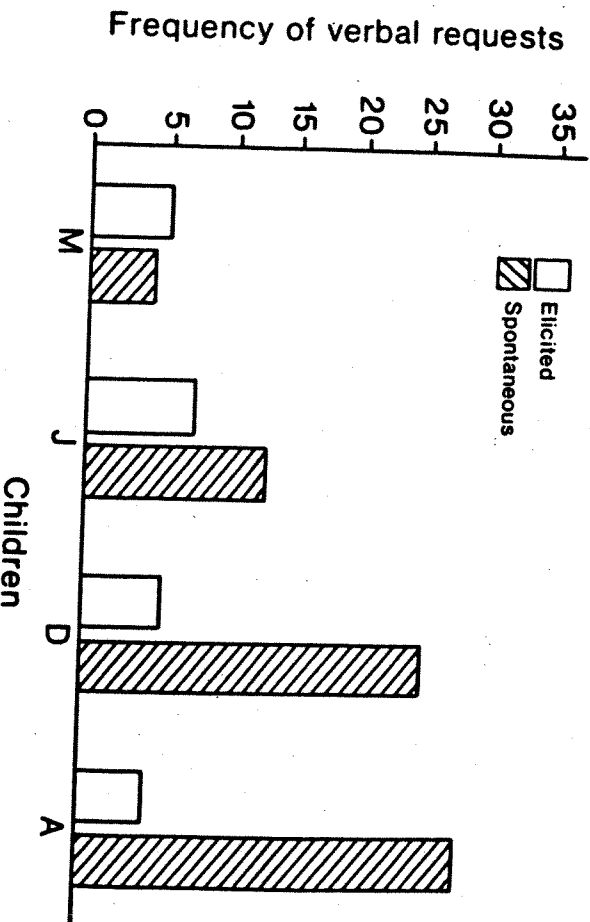


Figure 1. Frequency of elicited and spontaneous verbal requests produced by M and three children (J, D, A), during 2 consecutive hours in the classroom prior to intervention.

expected a response from the listener. Clearly his limited verbal interactions with others and lack of diversity in use of communicative functions made him appear very different from his classroom peers, as was particularly apparent in his limited requesting.

Figures 1 and 2 compare the frequency and diversity of verbal requests for M and three other children in his classroom at the same stage in linguistic development (Brown's (1973) late stage 2, MLU approximately 2.25-2.75). As seen in Figure 1, during a 2-hour observation period in the classroom, M initiated approximately half as many spontaneous verbal requests as the other children. The classroom was structured into six main activities during which there appeared to be frequent opportunities for requesting. Whereas the other children requested throughout the observation period, M's requests (primarily for objects) were limited to two activities (table play, snack). It is interesting that although the children's spontaneous requests differed, their elicited requests basically did not. This reflects the teacher's consistent behavior in interacting with all the children regardless of their pragmatic competencies; their attention was seldom directed to requesting opportunities. The diversity in the form of the children's requests (i.e., types—different lexical items; Figure 2) in

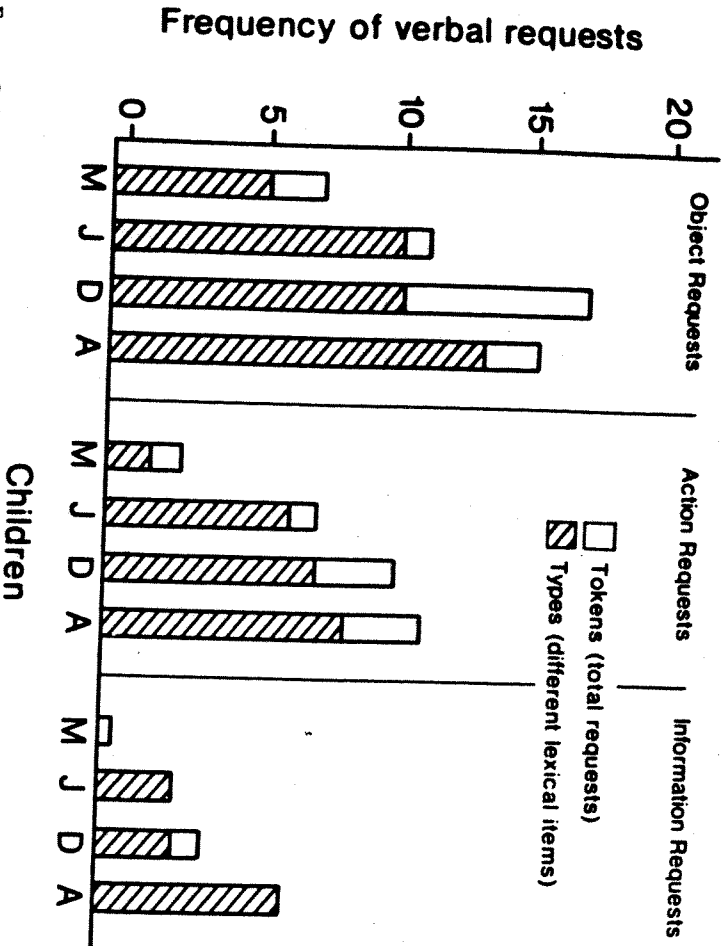


Figure 2. Frequency (tokens) and diversity (types) of total verbal requests for objects, actions, and information produced by M and three children (J, D, A) during 2 consecutive hours in the classroom prior to intervention.

appeared different for object, action, and information requests. M's requests occurred at predictable times and were characterized by repetitive, nonspecific phrases (e.g., "help me," "want that") and a flat intonation contour, often making it difficult to decipher his communicative intent (i.e., to distinguish a comment from a request). Note that M had been assessed approximately 18 months prior to this study; although his MLU had increased during this time, his communication behaviors (requests) as just described had remained unchanged.

Response Definitions and Observational System

The assessment results indicated that M demonstrated the necessary cognitive and linguistic skills for requesting—but did so infrequently—and that the adult/teacher seldom capitalized on naturally occurring opportunities in the classroom to facilitate requesting. Thus, the two aspects of the environment deemed important to observe and monitor were (a) M's elicited and spontaneous verbal requests for objects, actions, information, and the classroom activities in which these occurred; and (b) the adult's verbal antecedents used to elicit requesting behaviors. The observational system included observing M and his teacher in the classroom once each week for the duration of the study (approximately 2 months). Each observation lasted 2 hours and occurred during the same time each week while M and the teacher were participating in the same scheduled activities.

Child's request behaviors. Of the child behaviors noted during the observations, all verbal requests were coded as either spontaneous or elicited. Each behavior was categorized as a request for an object, action, or information, and for the classroom activity in which the request occurred. The operational definitions of the child request behaviors are presented in Appendix A. Frequency of occurrence measures were obtained from these observations.

Adult/teacher elicitation behaviors. Five adult antecedent behaviors which elicited requests from M by providing a variety of cues were recorded; these adult elicitation behaviors (direct model, indirect model, direct question, obstacle presentation, general statement) are presented in Appendix B. Frequency of occurrence was noted for each type of adult elicitation behavior and the resultant type of verbal request produced by M.

Reliability of recording the response measures. Two judges observed M and his teacher in the classroom and transcribed the adult and child behaviors described above. Percentage of agreement between the two judges (ranging 67-100%) for these measures was obtained for three baseline sessions and one classroom session after treatment was begun. The single low measure (67%) reflected the difficulty an unfamiliar observer encountered in distinguishing M's unusual intonation contours associated with M's requests for information.

Procedures

The purpose of the intervention was to increase M's functional use of verbal requests in the classroom. The intervention phase of the program had two components: an individual treatment component and a teacher training component. M's individual treatment was one-to-one therapy with a graduate student speech-

Classroom

language pathologist, to increase his production of elicited and spontaneous requests in a variety of activities. The second component, teacher training, was designed to facilitate the generalization of M's request behaviors from individual treatment to the classroom. This was accomplished by training the teacher to use the elicited production techniques which had been successful in individual treatment and thus create in the classroom the optimum environment for requesting. The intervention phase of the program was implemented following the baseline phase. Baseline data, for four classroom sessions, were collected by transcribing the child's spontaneous and elicited request behaviors and the corresponding adult elicitation behaviors (direct model, indirect model, direct question, obstacle presentation, general statement).

Individual treatment. The individual treatment was conducted three times per week, 30 minutes each session, in a therapy room separate from the child's classroom. The clinician attempted to elicit in each session a minimum of 15 verbal request behaviors: 5 requests for objects, 5 for action, and 5 for information. The clinician manipulated the nonlinguistic environment and produced one of the five adult request-elicitation behaviors in order to elicit the 15 request behaviors. Each verbal request that M produced received an immediate and communicatively appropriate response from the adult. For example, if the clinician said "There are some colors here if you want to paint," followed by M requesting "I want red paint," the clinician would immediately respond by giving M the paint and producing a communicatively appropriate utterance, "Here's your red paint." During these request situations the clinician directed M's attention to specific objects and events in the environment and through the adult elicitation behaviors suggested a variety of ways in which M might request. The clinician consistently modeled forms which linguistically coded specific referents in the environment in an attempt to increase the specificity and diversity of M's subsequent request forms. Individual treatment was continued until M produced 10 verbal requests for each of the three request categories (object, action, information) over three sessions. Eight of the 10 verbal requests had to be different lexical items. Once this criterion was met for two of the request types (objects and action requests), individual treatment was continued only on the third type (information requests) and intensive teacher training in the classroom was begun.

Teacher training. This phase of the intervention program consisted of training the classroom teacher to recognize the child's verbal request behaviors and the adult elicitation behaviors, and to begin implementing these procedures in the classroom. The teacher training consisted of three parts:

1. definition of the child request behaviors and adult elicitation behaviors
2. videotape observational training
3. classroom implementation—observation and training

Part 1: Definition of the child request and adult elicitation behaviors. The teacher was given written definitions of the terminology being used to describe the child request behaviors and the adult elicitation procedures, essentially the information presented in Appendix A and B. The teacher was instructed to read these definitions for the subsequent part of the training.

Part 2: Videotape observational training. This aspect of the training involved view-

ing a videotape of M's individual treatment and having the teacher record the following information:

1. adult (clinician) utterance
2. classification of adult's utterance into one or more of the five adult elicitation behavior categories: direct model, indirect model, direct question, obstacle presentation, general statement
3. child's request utterance
4. categorization of child's utterance into one of the three request categories (object, action, information)

Observational training initially consisted of the teacher and clinician jointly viewing the videotaped session until 90% agreement on at least 10 consecutive request interactions was reached. A reliability check was then conducted in which the teacher and clinician independently recorded a new 30-minute segment of videotaped data, consisting of 27 request interactions. The teacher and clinician reached 93% simple agreement on categorizing the child's request and adult elicitation behaviors.

Part 3: Classroom implementation—observation and training. The last part of the training included sharing with the teacher general guidelines and examples for using the adult elicitation behaviors in her classroom (see Appendix C). Following this discussion, the clinician once again observed M in the classroom and recorded child and adult/teacher behaviors. These data were shared and discussed with the teacher, and suggestions for additional classroom modifications were provided.

Intervention Efficacy

The effects of the intervention were determined by examining data collected once a week in the classroom. Specifically the following questions were addressed:

1. Was there an increase in M's elicited and spontaneous requests for objects, action, and information?
2. Was the increased frequency in requesting accompanied by increased diversity in lexical use?
3. Was the increased frequency in requesting observed throughout a variety of activities during the 2-hour class?
4. Was the increased frequency in M's requesting accompanied by increased teacher elicitation behaviors?
5. How did the teacher's behaviors qualitatively change over time and what changes were observed in M's behavior?

RESULTS

Although M produced requests in his classroom prior to treatment, his request behaviors were limited in total frequency of occurrence. Figure 3 displays M's increased use of total verbal requests during the intervention phase of the study. As can be seen, his production of both elicited and spontaneous requests increased in the classroom setting. The follow-up measure indicates that M continued to use the increased frequency of requests approximately 2 months after treatment had ended,

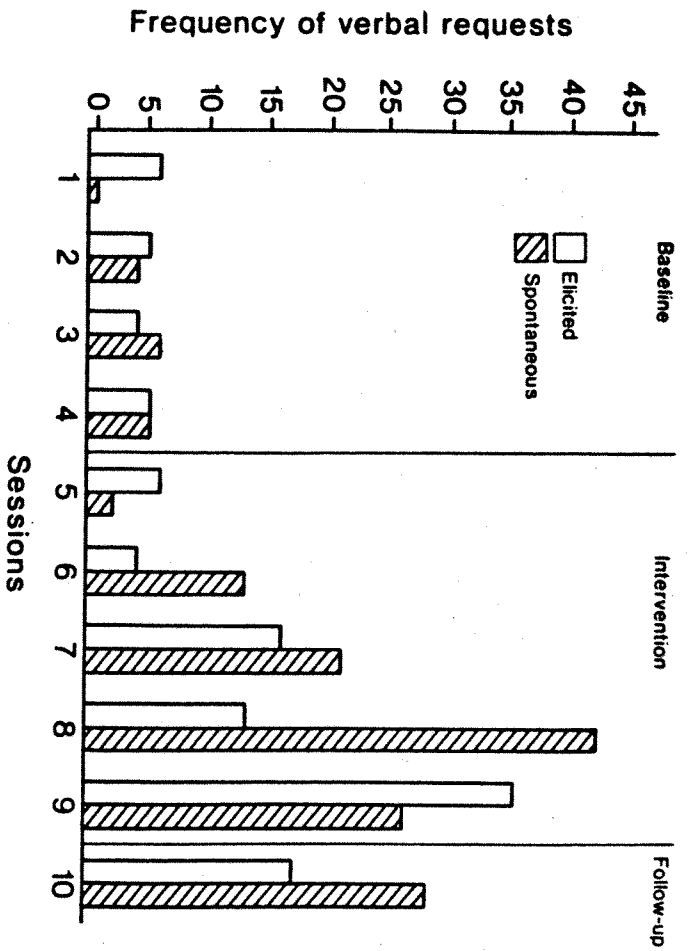


Figure 3. Frequency of elicited and spontaneous verbal requests produced by M during 2 consecutive hours in the classroom after intervention.

though not at the maximum level of production. Figure 4 displays the spontaneous and elicited requests for objects, actions, and information. The actual data points (number of requests per session) and linear regression analyses (Parsonson & Baer, 1978) indicate that, during intervention, M increased his *elicited* productions of all three types of requests in the classroom, i.e., object, action, and information requests.

Analysis of spontaneous productions of requests yielded different results. The data points and linear regression analyses indicate that following treatment M increased his *spontaneous* productions of requests in the classroom for objects and actions, but not information. It is important to note that the abscissa in Figure 4 indicates the co-occurrence of individual treatment sessions with these classroom observations. As is indicated prior to the classroom observation in session 7, there were six individual treatment sessions in which the clinician worked on all three request types. In the two individual treatment sessions after session 7, only requests for information were emphasized by the clinician. These data illustrate that even when individual treatment was not emphasizing requests for objects and actions, M continued to increase his spontaneous productions of these types of requests in the classroom setting. On the other hand, as soon as direct individual treatment on requests for information stopped, so did the increase in M's spontaneous production of requests for information in the classroom. The conclusion from these data is that M was able to generalize

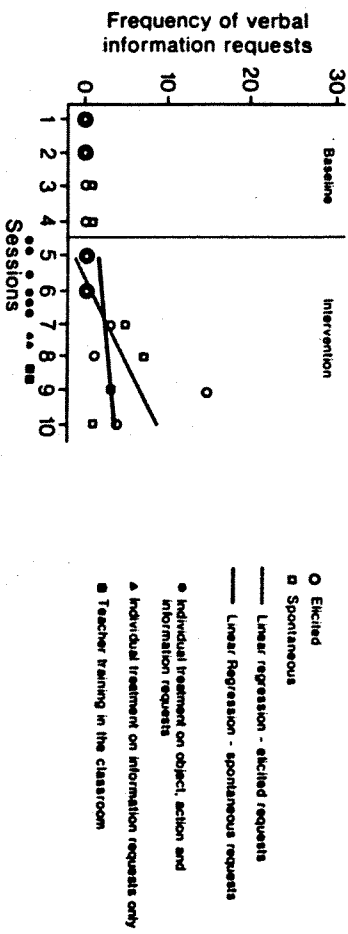
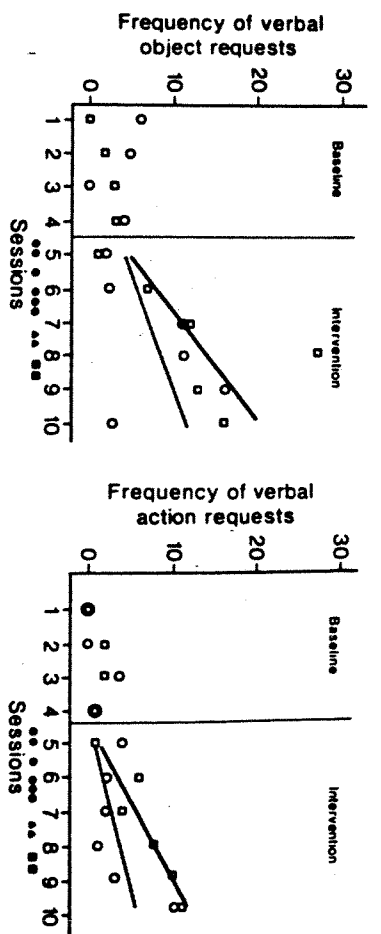


Figure 4. Frequency of elicited and spontaneous verbal requests for objects, actions, and information (data points and linear regressions) produced by M during 2 consecutive hours in the classroom, displayed by session and co-occurring treatment competent.

the functional use of requests for objects and actions in the classroom spontaneously, but not requests for information. To examine further the increased spontaneous productions of requests for objects and requests for action, the slope characteristics derived from the linear regression analysis were used to determine learning rate (see Table 1). As can be seen, the slope characteristic for object requests is steeper than the slope characteristic for action requests, suggesting that object requests were acquired at a faster rate than action requests.

Table 1. Slope characteristics for the spontaneous production of object and action requests.

Request category	Slope
Objects—spontaneous	3.09
Actions—spontaneous	1.89

As discussed earlier, prior to intervention M's limited productions of requests in the classroom were characterized by stereotyped request forms which were not effective in directing the listener to specific referents in the environment (e.g., "help, help"). One focus of treatment was to encourage M to name specific objects and/or events upon which it appeared he wished the listener to act. To determine if M increased the variety of lexical items in his classroom requests, type-token measures were calculated. Recall that *tokens* refer to the total number of requests produced (regardless of whether M was linguistically coding different referents in the environment). *Types* indicate different substantive words being used in the request utterances. Thus "more," "more milk," "more drink" would be scored as three types, three tokens; "more milk," "more milk please," "milk," as one type, three tokens. Figure 5 illustrates the frequency (tokens) and diversity (types) of spontaneous and elicited requests produced by M during two hours in the classroom. These results indicate that with his general increase in requests (tokens), there was also a co-occurring increase in his use of different vocabulary words (types). With a pragmatically impaired child, the concern in treatment of this nature is that one might increase total productions but not variety in content. That is, often children like M are taught inadvertently to use a stereotyped form which they do not alter to reflect changes in the environmental referents. Figure 5, which separates the spontaneous productions from the elicited ones, demonstrates that M was somewhat better in his elicited productions at naming a variety of referents in the environment. This would be expected since the adult, in elicitation behaviors, generally makes verbal reference to some specific aspect of the environment.

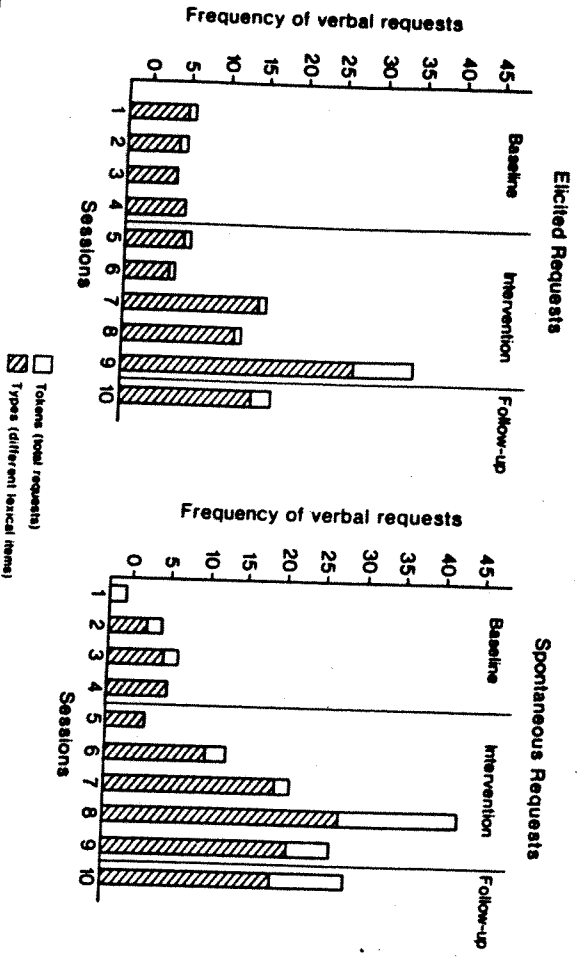


Figure 5. Frequency (tokens) and diversity (types) of elicited and spontaneous verbal requests produced by M during 2 consecutive hours in the classroom.

Another aspect of M's requesting, observed during the baseline phase of the research, was the limited number of classroom activities in which requests were produced. Figure 6 illustrates the classroom activities in which spontaneous and/or elicited requests were produced by M during the baseline and intervention phases of the program. During the baseline classroom observations, M requested primarily during the table play and snack activities. Following the introduction of individual treatment, M produced spontaneous and elicited requests during more activities throughout the day.

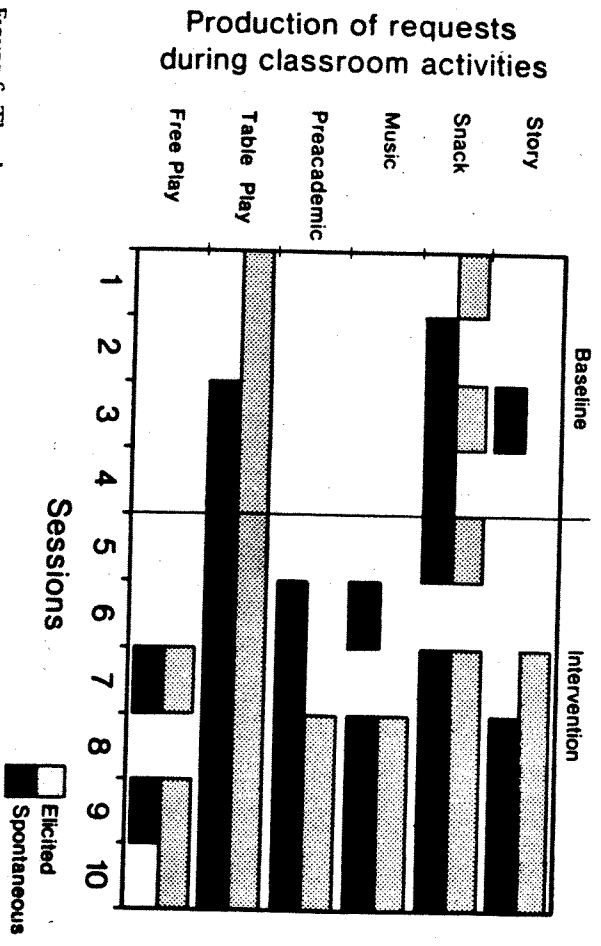


Figure 6. The classroom activities in which elicited and/or spontaneous requests were produced by M.

The increase in M's elicited requests in the classroom reflects a change not only in the child's behaviors but in the teacher's behaviors as well. Recall that the clinician used five adult elicitation behaviors in the individual treatment sessions to elicit requests from M: direct model, indirect imitation, direct question, obstacle presentation, and general statement. Table 2 presents the frequency of occurrence per session of the teacher's elicitation behaviors resulting in M's requesting objects, actions, and information. Note first that during baseline the teacher elicited primarily object-related variety in her types of elicitation behaviors. Also, she demonstrated to ask M a direct question or ask him to directly imitate her. The teacher's interest, enthusiasm, and abilities were reflected in her increased use of teacher elicitation behaviors over time. At that point where teacher training became more specific (prior to session 7, terminology and procedures were explained in detail; between sessions 7 and 8, observational training occurred) the number and variety of adult elicitation be-

TABLE 2. Frequency of occurrence of the teacher's elicitation behaviors resulting in M's production of object, action, and information requests.

Elicitation behaviors resulting in requests for:	Baseline sessions				Intervention sessions					
	1	2	3	4	5	6	7 ^a	8 ^b	9	10
Objects	DM	5	5						2	2
	DQ	1		3		1	3		1	1
	IM			1			2	2	1	1
	OP					1	2	3	12	2
	GS					1	4	4	1	1
Actions	DM		2		2	1	1	1	1	2
	DQ		1		1	1			1	3
	IM			1					1	1
	OP			1					1	1
	GS					2			4	4
Information	DM					2			10	
	DQ									
	IM						1	1	3	3
	OP								1	1
	GS									1
Total Requests	DM	5	5	2		3	1	2	3	13
	DQ	1		4		2	2	3	2	2
	IM			1		1	3	3	5	3
	OP			2		0	1	3	5	6
	GS					1	6	3	13	6

Note. DM = direct model; DQ = direct question; IM = indirect model; OP = obstacle presentation; GS = general statement.

^aTeacher Training - terminology
^bTeacher training - observations

aviors increased remarkably. This can best be seen in the data reflecting the total elicited requests. The data in Table 2 and Figure 3 clearly indicate that M's elicited and spontaneous requests both increased most during those sessions in which the teacher demonstrated the greatest variety in her elicitation behaviors.

In summary, the data reveal several changes in M's and the teacher's request behaviors in the classroom. M increased his frequency of requesting in the classroom. His spontaneous requests for objects and actions steadily increased, whereas spontaneous requests for information increased only during the period in which he was receiving individual treatment. His elicited requests for objects, actions, and information increased during and subsequent to individual treatment. As the number of requesting behaviors increased, there was a noticeable increase in the specificity and diversity of vocabulary used in the request forms. M also extended his use of requests to a variety of classroom activities, not just table play and snack, but throughout the 2-hour class. Finally, M's increased production of elicited requests clearly reflects the increase in the teacher's use of elicitation behaviors. Not only was the teacher success-

ful in increasing her number of attempts to elicit requests from M, but she was also successful in increasing the variety of ways in which she did this.

DISCUSSION

In general the results indicate the success of this program in increasing M's productions of requests in the classroom. The relatively rapid rise in his use of requests seemed to be facilitated by the following factors: (a) focusing individual treatment on request behaviors that ultimately would be elicited in the classroom, (b) constructing the individual sessions to resemble classroom activities, and (c) training the teacher to focus on M's interests and to maximize request opportunities in the classroom by modeling and highlighting salient aspects of the environment. These teaching strategies addressed the limitations of his pretreatment request skills and facilitated their expansion into more communicatively effective behaviors. At the termination of intervention, M consistently specified what he wanted in his verbal requests. He typically obtained the adult's attention prior to making his request. On those occasions when he was not acknowledged, or when the desired response was not obtained, he would repeat or linguistically alter the form of his request. These behaviors differed markedly from those demonstrated prior to intervention. The change indicates M's increased awareness that other people wanted to and would help him, and that the more specific the form of his verbal requests, the more efficient his communicative attempts would be.

Another point of interest was the discrepancy in increasing spontaneous productions of requests for actions and objects versus information. A major difference between these request types concerns the more abstract nature of information requests. Although requests for actions and objects usually refer to directly observable aspects of the environment, requests for information usually refer to more abstract, unobservable aspects of the environment (e.g., "why," "how," "when," etc.). Whereas very early emerging forms of "wh" questions (e.g., "what"—"what that," "what doing") refer to directly observable, concrete aspects of the environment, later emerging forms seek information about entities and events with no perceptible correlates in the immediate, nonlinguistic environment (Blank & Franklin, 1980). Most of M's requests referred to objects and actions in the immediate environment. The few requests for information produced by M in the individual sessions, as well as in the classroom, were of the more concrete type. He asked about the identification of objects and events ("What's this?", "What does this say?") and asked for permission ("paint now?"). These information requests were frequently accompanied by gestures (as pointing to the object he wanted identified), making even more salient the environmental referent. The only requests for objects, actions, or information that referred to objects or events not in the environment were "where" questions ("where's X?"). These were infrequent and began emerging at the end of the study. We do not suggest that M's lack of success in producing requests for information was due to his limited use of "wh" question forms. Certainly he had a limited repertoire in this regard, but had this been his only limitation, he might have merely requested information with less complex linguistic forms. This in fact was not the case; M produced few requests for information in any form.

Given this description of requests for information and M's performance, one might hypothesize the following prerequisite behaviors for this type of request: the ability to talk about objects and events present and not present in the immediate environment, and the ability to inquire about the abstract qualities of such objects and events. M's relative lack of success in increasing his production of requests for information may reflect the absence of these prerequisite cognitive skills.

In addition, an apparent social prerequisite skill for information requests, that of having a desire to seek information, should not be overlooked. To request information, children must have a need to learn more about their environment; they must be curious about discovering the hows, whys, whens of objects and events present and not present in the environment. A closer look suggests that this skill may differ from the prerequisite social skill for object and action requests, that is, having a desire to obtain objects and have actions performed by other people. Prior to the onset of intervention, M demonstrated at least a minimal desire to have others help him obtain objects or perform actions. This same minimal level of functioning was not observed in seeking information about the environment. Thus, it may have been that M lacked the prerequisite social skill for information requests.

The discussion thus far focuses on the possible absence of prerequisite cognitive and social skills for information requests, and the presence of such prerequisite skills for object and action requests. It is also possible that M possessed all prerequisite skills necessary for all three request types. If this were the case, the discrepancy in success across the three requests may reflect limitations in the effectiveness of the particular intervention procedures used in this study. The results demonstrate that through the manipulation of the environment M could extend both the functional use and diversity of his requests for objects and/or actions. It appeared that the more M made such requests, the more he realized the power of communication for accomplishing personal goals. Although it seems that such a teaching strategy should work similarly for increasing information requests, this may not be so. Increasing a child's need and desire to seek information may not be as directly responsive to environmental manipulation.

The results of this study provide guidelines for the assessment and intervention of pragmatically impaired children who need to increase their spontaneous productions of requests for objects and actions in a classroom setting. Although these procedures were successful in facilitating the elicited production of requests for information, limitations in their usefulness for increasing spontaneous requests for information were apparent. These results suggest the need for further research in the following areas:

- How do requests for information differ from requests for action and objects?
- What are the cognitive and social prerequisites for requesting information?
- What teaching strategies are most effective for teaching these prerequisite skills, and for increasing the spontaneous production of requests for information?

Although clearly there is much to be learned about the development of the communicative aspect of language production, the procedures discussed in this paper emphasize the value of altering the environment in facilitating the acquisition of functional requests in pragmatically impaired children.

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References

- BARTRAK, L., RUTTER, M., & COX, A. A comparative study of infantile autism and specific developmental receptive language disorders III: Discriminant function analysis. *Journal of Autism and Childhood Schizophrenia*, 1977, 7, 383-396.
- BATES, E. *Language and context: The acquisition of pragmatics*. New York: Academic Press, 1976.
- BLANK, M. Cognitive functions of language in the preschool years. *Developmental Psychology*, 1974, 10, 229-245.
- BLANK, M., & FRANKLIN, E. Dialogue with preschoolers: A cognitively-based system of assessment. *Applied Psycholinguistics*, 1980, 1, 151-170.
- BROWN, R. *A first language*. Cambridge: Harvard University Press, 1973.
- DORE, J. A developmental theory of speech act production. *Transactions of the New York Academy of Science*, 1973, 35, 623-630.
- DORE, J. A pragmatic description of early language development. *Journal of Psychological Research*, 1974, 4, 423-430.
- DORE, J. Holophrases, speech acts and language universals. *Journal of Child Language*, 1975, 2, 21-40.
- DUNN, L. *Peabody Picture Vocabulary Test*. Circle Pines, MN: American Guidance Service, 1959.
- FOSTER, R., GIDDAN, J., & STRARK, J. *Assessment of children's language comprehension*. Palo Alto Consulting Psychologists Press, 1973.
- GARVEY, C. Requests and responses in children's speech. *Journal of Child Language*, 1975, 2, 41-59.
- HENDRICK, D., PRATHER, E., & TOWIN, A. *Sequenced inventory of communication development*. Seattle University of Washington Press, 1975.
- MCLEAN, J., & SNYDER-MCLEAN, L. *A transactional approach to early language learning*. Columbus OH: Charles E. Merrill, 1978.
- OLSWANG, L. *The ontogenesis of agent: From cognitive notion to semantic expression*. Unpublished doctoral dissertation, University of Washington, 1978.
- PARSONSON, B. S., & BAER, D. M. The analysis and presentation of graphic data. In T. K. Kratochwill (Ed.), *Single subject research: Strategies for evaluating change*. New York: Academic Press, 1978.
- PACET, J. *Origins of intelligence in children*. New York: International Universities Press, 1952.
- PACET, J. *The construction of reality in the child*. New York: Basic Books, 1954.
- SNYDER, L. *Pragmatics in language disabled children: Their prelinguistic and early verbal performance and presuppositions*. Unpublished doctoral dissertation, University of Colorado, 1975.
- SUGARMAN, S. *A description of communicative development in the prelanguage child*. Unpublished honors thesis, Hampshire College, 1973.
- UZCIRIS, I. C., & HUNT, J. M. V. *Assessment in infancy*. Urbana: University of Illinois Press, 1975.

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Appendix A CHILD REQUEST BEHAVIORS

Requests are intentional verbal utterances produced by the child for directing a listener to provide objects, perform actions, or provide information—that is, to verbally regulate the behavior of others.

Spontaneous request—Child initiates a verbal request. These requests are not preceded by verbal or nonverbal adult behaviors intended to elicit a request from the child.

Elicited request—Child produces a verbal request after an adult produces a verbal or nonverbal behavior intended to elicit a request from the child.

verbal elicitation

"What do you want?"
"Tell me."

nonverbal elicitation

Adult looks at child and waits for a response.

Request for objects/people—Child directs listener to provide an object or a person. Child must verbalize the name of the object or person, or verbalize a demonstrative pronoun with a nonverbal cue to indicate the referent for the pronoun. When the object is present the child looks at or touches the object, points to or reaches toward the object, and verbalizes the object's name. When the object is not present, the child gestures to where the object is typically located, or might be located, and verbalizes the object's name.

"I want that" (child points to a toy)
"Ball" (child reaching for ball on shelf)
"Milk" (child goes to and touches refrigerator)

Request for action—Child directs listener to act in an agentive role (i.e., to perform a particular act or action), and/or child expresses his desire to perform a particular act or action himself. Vocatives (i.e., attention-getters such as "look") are not considered requests for action.

"Open" (child hands a closed box to adult)
"More turn" (child gives the adult a toy which he cannot manipulate)
"I want to paint"

Request for information—Child directs listener to provide information. Child must verbalize using a rising intonation or a conventional question form to ask about the following:

1. location of a person or object:
"where daddy?"
"truck"
2. name or information about an object/person or activity:
"what's that?"
"green ball"
"go home"
3. permission to perform a particular activity:
"go outside"
"eat cookie now"

Appendix B ADULT ELICITATION BEHAVIORS

These are stimulus behaviors provided by the teacher/clinician which were designed to elicit requests from M. They provide varying amounts of cues for the requests—from a direct model to a general prompt.

(DM) direct model—Adult provides direct verbal model of request for an object, action, or information; the content word(s) referring to the requested object, action, or information must be linguistically coded by the adult. The adult also must directly elicit the imitation from the child.

"M, tell me 'zip jacket please'"
"Ask me 'where's my coat?'"
"M, you say 'need another brush.'"

(DQ) direct question—Adult asks question which elicits a request for an object, action, or information.

"What do you want?"
"What do you need?"
"Do you need me to help you with something?"

This does not contain a model of expected request lexical items.

(IM) indirect model—Adult provides a verbal model of a request for an object, action, or information. The child is not asked to imitate. Thus, the adult may provide a model, followed by an elicitation statement, or give the child a choice of requests.

"If you want more colors, let me know."
"I'll get the scissors if you want them."
"Would you like to color or paint?"

(OP) obstacle presentation—A direct verbal instruction (command) is given to a specific child, but some type of obstacle is provided. The obstacle may be in the form of a barrier to an object/action or an absent object.

"Get the clay" (clay missing)
"Can you push the truck" (truck broken)
"Do you want to paint" (no paint)
"Finish the puzzle" (piece missing)
"Get the car" (car in sealed/closed container)
"Please pour the juice" (cannot open juice container)

(GS) general statement—This is a verbal comment directed to either a specific child or group of children which refers in a general way to an object or ongoing activity that the children/child might want to request. It is designed to give the children a general option to/request—which they may or may not pursue—not to model a specific request.

"This book looks like it might be fun to read."
"We could make a snowman."
"I have some cutters for cookies."
"I have a snack if anyone is hungry."

Appendix C GUIDELINES FOR INCREASING REQUESTS

1. Throughout the day, make general statements about objects or actions M might prefer; wait to see if you get a response (e.g., "Hey, let's make a building").
2. Use very high interest activities for M and use the adult elicitation behaviors to accompany his play and his preference for activities (see accompanying examples).
3. Set up specific situations to elicit requesting. Providing obstacles in situations in which you have asked M to perform is a powerful elicitation technique (e.g., "Finish the puzzle," puzzle piece missing).

4. Provide models whenever possible for action, object, and information requests, but remember that these don't have to be in the form of a direct model [e.g., "If you want to (verb), let me know"].
 5. As M is about to do something he wants, or get something he wants, or looks at you in a quizical way, you might want to provide a model for a request.
 6. Provide tasks occasionally which are slightly difficult for M.
 7. If M uses any form of verbal request, try to provide an *immediate desired* and/or *natural* response.
- Try to avoid direct reinforcement such as "I heard you say 'I want X'" or "Good you asked me 'Where is the X?'"
- Instead, try to respond in a way that promotes further communication or gives M what he is requesting.

Examples

M's Response	Adult Could Say
"Need more soap."	"I'll get soap in a minute; I have to finish here first."
"Where train?"	"Where's your train? I think it's under the block."
"Help me snap please."	"Yeah, we need strong muscles to do this" (fix pants).
"Help fix hammer."	"O.K., we can't use it that way, can we?"

Examples for Increasing Requests in the Classroom

Adult/Teacher Elicitation Behaviors	Type of Request
Direct Model (DM)	Object (O)
Direct Question (DQ)	Action (A)
Indirect Model (IM)	Information (I)
Obstacle Presentation (OP)	
General Statement (GS)	

Classroom situation	Activity	Teacher behavior	Examples of statements (adult's statements in quotations; child's responses in parenthesis)	Type of request
Free Play	Pretend	GS	"I have more toys here" [choice of high interest toys]. (Need a X.) (What you have?)	O I
		IM	"If you want me to help you verb, let me know."	I
		OP	(Help me push/climb/roll/squeeze/cur)	A
		OP	"I think the patient needs a bandaid." (Where's a bandaid?) (Help me open bandaid.)	I A

(Continued)

Classroom situation	Activity	Teacher behavior	Examples of statements (adult's statements in quotations; child's responses in parenthesis)	Type of request
Table Play	Puzzles Manipulatives	OP	"Can you put all the rings on?" (I need more/X.) (Where's the X?)	O I
		OP	"Here I want you to do this" [give new materials]. (What I do?) (Help me do it.)	I A

Precademic	Pegs	GS	"You could make a necklace with many colors" [not enough colors/no model]. (I need color beads.) (How you do that?)	O I
		OP	"If you want me to show you where the pegs go, I'll do it." (Where pegs go?)	I

Writing	OP	OP	"Please make a letter B with your pen." (Where's my pen?) (How make B?) (You make B please.)	I I A
		GS	"We could play with the butterfly or the bear." (I want the butterfly.)	O

Hammer with wood	GS	DM	"You could say 'Where?' say 'butterfly?' say 'go?' say 'Where butterfly go?'" (Where butterfly go?)	I
		GS	"You can hammer the nails or stack the wood pieces." (Want hammer nails)	A

Music	Instruments	OP	"Be sure to hammer carefully" (don't give nails, give broken hammer, give screwdriver instead). (Help fix hammer) (Need nail/hammer)	A O
		OP	"I have a different instrument in this bag for each of you." (I want instrument please.) (I see in bag please.)	O A

Music	Instruments	IM	"If someone wants to choose a song, let me know." (Choose spider song, please.)	O
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(Continued)

Word-Finding Substitutions in Children with Learning Disabilities

Diane German

German



Measures designed to explore word-finding ability were administered to 8-11-year-old learning-disabled and normal-learning children. Three stimulus contexts and high- and low-frequency words were used. In addition, characteristics secondary to the word-finding process were analyzed. Certain substitution types and secondary characteristics emerged as specific to learning-disabled children. These findings have practical implications for the diagnosis and remediation of word-finding problems in learning-disabled children.

The purpose of this investigation was to identify types of substitutions that are unique to learning-disabled (LD) children when they are unable to retrieve target words. In addition, it was of interest to see if LD children use more secondary word-finding behaviors such as "extra verbalizations" (e.g., "Oh, it's a...") or gestures than normal-learning children (NL) when having word-finding problems. Models for analyzing substitutions have been developed to describe errors in the word retrieval of adult aphasics. These studies (Rinnert & Whitaker, 1973) provide insight into the semantic structure and processing of speech, and aid in the differential diagnosis of adult aphasics. These analyses have also contributed to the differentiation of various types of word-finding disorders (Geschwind, 1967; Rochford 1971). Although research analyzing the responses of children who make similar errors is sparse, some identifiable patterns have emerged.

Gardner (1974) reported that children's error responses to object- and symbol naming tasks included object descriptions, visual confusions, and "did not know" responses. Denckla and Rudel (1976) indicated that dyslexic children use more circumlocutions, whereas nondyslexic minimal-brain-damaged children produced more wrong-name responses. Johnson and Myklebust (1967) reported that children with word-finding problems may often define the target word, give its function, or substitute a word with similar meaning or from the same semantic category. In addition they stated that younger children may use noises that represent the target word whereas others may use gestures or pantomime to communicate their messages.

The substitution categories used in this investigation represent specific attributes of the target word. These attributes include semantic, functional, phonemic, visual, and positional characteristics of the target word.

Substitutions representing semantic attributes of the target words include synonyms (e.g., *cloak* for *cape*) and semantically related substitutions (e.g., *fork* for

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Classroom situation	Activity	Teacher behavior	Examples of statements (adult's statements in quotations; child's responses in parenthesis)	Type of request
Snack	IM	[to each child] "Let me know where you want to sit." (I sit here?) (want this chair)	[give each child something to be responsible for] "Let M know when you want a piece of cheese, let Anna know if you want more juice." (want more juice)	1
				0
				0
				0
Story	IM	[use objects related to story] "If you want to put horses in the barn, let me know." (put horses in?) (want horse)	"Let's make peanut butter sandwiches." (Help me spread/open/cut) (need knife, jelly, bottle)	0
				0
				0
				0
Story	IM	[read story, stop at critical point, elicit question] e.g., "The dog ran away." [stop] "Say 'Where?' Say 'go,' say 'Where dog go?'" (dog go?)	"This didn't look like the boy's sweater." [stop] "Say 'Whose?—sweater?—that?'" (who sweater?)	1
				1
				1
				1