

Teacher Responses to the Communicative Attempts of Children With Autism

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We assessed teacher responses to the communicative attempts of children with autism. Teachers were first interviewed using the Inventory of Potential Communicative Acts (IPCA) to identify behaviors in each child's repertoire that the teachers considered to be communicative. Interview results suggested that the teachers interpreted many of the children's prelinguistic gestures, body movements, and facial expressions, as forms of communication. Naturalistic observations were then conducted in the child's classroom to determine how teachers responded to the children's identified forms of prelinguistic behaviors. The results of these naturalistic observations suggested that the teachers often did not respond to the child's prelinguistic behaviors in ways that acknowledged their communicative intent. Implications of the results on the child's communication development and for intervention efforts are discussed.

Communication impairments are a defining characteristic of individuals with autism. Approximately 50% of children diagnosed with autism fail to develop speech (Wetherby and Prizant, 1992). In the absence of speech and some other formal mode of communication, children with autism may rely on idiosyncratic, informal, or problematic behaviors to communicate. Such actions are often referred to as prelinguistic communicative behaviors (Wetherby and Prizant, 1992). Whereas typically developing infants usually move rapidly through a prelinguistic stage of communication on route

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to developing speech and language, children with severe autism may never progress beyond the use of prelinguistic communicative behaviors. This reliance on prelinguistic forms can be problematic, in that it may be difficult to observe or interpret the meaning of some behaviors that the child may use in an attempt to communicate. In such cases the child's communicative attempts may be ineffective and the child could either escalate to problem behavior or cease all communicative attempts, leading to extreme passivity.

Movement through the prelinguistic stage of communication development appears to be facilitated by the way in which communicative partners respond to an infant's early reflexive or nonpurposeful behavior (Bates *et al.*, 1975). Bates and her colleagues have argued that by responding consistently to the early, unconventional, and reflexive behaviors of infants as if they were attempts to communicate, caregivers may encourage the development of more conventional and symbolic forms of communication and contribute to the intentional use of those forms for true communicative purposes. Furthermore, there is some evidence to suggest that a child's communicative competence may vary in relation to the level of adult responsiveness experienced by the child during the child's development (Hart and Risley, 1995; Yoder *et al.*, 1998).

Several studies have examined adult responsiveness to prelinguistic communicative behaviors in typically developing children and in children with autism and related developmental disabilities (Baird *et al.*, 1997; Hart and Risley, 1995; Haynes, 1998; Kasari, *et al.*, 1988; Watson, 1998). In general, these studies have reported some differences in the way caregivers of children with autism respond to the communicative attempts of their children when compared to caregivers of typically developing children and children with an intellectual disability. For example, Watson (1998) found that mothers of children with autism, while providing as much verbal input related to the child's focus of attention, used more utterances that were directed at things outside the child's focus of attention than did mothers of typically developing children. Kasari *et al.* (1988) found that caregivers of children with autism tended to regulate their child's behavior more and showed less mutual play and positive feedback than mothers of typically developing children or mothers of children with an intellectual disability.

While there have been various studies that have examined parent responsiveness, few have considered the responsivity of teachers to the communicative attempts of children with autism in classroom settings. One relevant study involving students with severe and multiple disabilities showed low rates of teacher responses to children's prelinguistic behaviors, which appeared to reflect the fact that the children's prelinguistic signals were highly idiosyncratic and subtle (Houghton *et al.*, 1987).

When teacher responses to children’s communicative attempts are low it may have the same negative consequences as when parents do not respond consistently to the child’s prelinguistic communicative attempts (i.e., escalation to problem behavior or passivity due to extinction). However, it is not clear why parents and teachers might not respond consistently to the child’s prelinguistic behaviors. While it might be assumed that this is because the child’s acts go unnoticed because they are highly idiosyncratic and subtle, it could also be that these acts are not in fact interpreted as forms of communication by the parent or teacher. The present study aimed to investigate how teachers responded to the prelinguistic communicative attempts of children with autism. Teachers were first interviewed to identify behaviors in the child that they interpreted as communicative so that responsiveness could be assessed in relation to the acts considered by the teachers to be intentional communicative attempts on the part of the children.

METHOD

Participants and Setting

Eight children with severe autism participated in the study. All lived at home with their families and attended an educational program on a part-time basis. Patrick and Ian attended the same preschool class with two other children. Beth attended a preschool class for 12 children with developmental disabilities. Alex’s preschool class catered to six children with developmental disabilities. Dave, Seth, Jake, and Rue attended a program for children with autism and were in the same classroom. Descriptive data for each child are presented in Table I.

Only teachers who had been involved in the child’s education for at least 3 months were involved. Three months was considered the minimum amount of time for teachers to acquire knowledge of the child’s behavior. A

Table I. Description of Participants

Child	Age (years:months)	TARC (overall standard score)	REEL-2 (months)	DBC (percentile rank)
Patrick	4:5	28	RLA 6, ELA 4	91%
Ian	4:5	32	RLA 5, ELA 6	73%
Beth	3:7	17	RLA 9, ELA 5	93%
Dave	7:7	43	RLA 6, ELA 6	97%
Rue	4:11	31	RLA 5, ELA 4	76%
Jake	7:1	24	RLA 5, ELA 6	54%
Alex	4:6	34	RLA 6, ELA 3	60%
Seth	6:11	35	RLA 5, ELA 6	84%

total of four teachers participated. Patrick and Ian had the same teacher. She had known Patrick for 3 months and Ian for 7 months at the time this study began. Seth, Jake, Rue, and Dave's teacher had known Seth for 3 months, and the other students for 5 months. Alex's teacher had known him for 3 months. Beth's teacher had known her for 3 months.

Teachers assessed language using the second edition of the Receptive-Expressive Emergent Language Scale (REEL-2; Bzoch and League, 1991). This device is a communication rating scale covering language development from birth to 36 months. It was considered appropriate for the children in this sample because of the severe nature of their communication impairment and because it has been shown to be an effective device for documenting language delay in children with developmental disabilities (Sigafos and Pennell, 1995). The REEL-2 provides age equivalency scores in the receptive and expressive language domain. Expressive language ages for the participants ranged from 3 to 6 months with a mean of 5 months. Receptive language ages ranged from 5 to 9 months with a mean of 5.88 months.

Teachers also completed the Topeka Association for Retarded Citizens (TARC) Assessment System (Sailor and Mix, 1975) to assess self-help, motor, communication, and social skills. With this device, subscale scores for each skill area are calculated together with an overall standard score. Overall scores have a mean of 50 and a standard deviation of 20, which is based on a sample of 283 children with severe disabilities from 3 to 16 years of age. Overall standard scores for the eight participants in this study ranged from 17 to 43 indicating substantial deficits in adaptive behavior functioning.

Teachers assessed emotional and behavioral disturbance using the Developmental Behavior Checklist (DBC; Einfeld and Tonge, 1994). The DBC is a 96-item instrument that is completed by parents or teachers and yields a total behavior score that gives an overall measure of behavioral/emotional disturbance. There is a high correlation between a total score on the checklist and those obtained with the AAMD Adaptive Behavior Scales (Lambert and Windmiller, 1981) and the Scales of Independent Behavior (Bruininks *et al.*, 1984). Total scores are translated into percentile rankings, with higher rankings indicating more severe levels of emotional and behavioral disturbance. Percentile rankings for the children in this study ranged from the 54th to 97th percentile indicating severe levels of emotional and behavioral disturbance in all children.

Overall these initial assessments showed that all eight children had major deficits in expressive and receptive language and adaptive behavior functioning, which is consistent with their diagnosis of severe autism. None of the children had acquired speech or any other conventional or consistent

means of communication (e.g., manual signs). All were functioning at or below the 6-month age level in terms of expressive language development. In addition, all of the children had severe levels of emotional and behavioral disturbance (i.e., challenging behavior) in keeping with their diagnosis of severe autism.

Teacher Interviews

Teachers were interviewed to identify behaviors in the children that they considered to represent prelinguistic forms of communication. The interview was structured using the protocol of the Inventory of Potential Communicative Acts (IPCA; Sigafos *et al.*, 2000). The IPCA is an interview schedule that can be completed by parents, teachers, or therapists of children with developmental and physical disabilities who have severe communication impairment. It is designed to obtain information about children's informal or idiosyncratic behavior that is interpreted by others as communicative. The version of the IPCA used in this study consisted of 40 questions and addressed nine communicative functions. To assess the communicative function of Requesting an Object, for example, informants were asked to "Describe how the child indicates that he/she wants (a) an object (e.g., toy or book), (b) something to eat, (c) more of something, (d) TV or music, (e) other? All of the teachers had been involved in the child's education for at least 3 months, which was considered sufficient time for them to acquire knowledge of the child's prelinguistic behavior (Sigafos *et al.*, 2000). At the beginning of each interview, the teacher was provided with a list of behaviors that might possibly serve a communicative function in children with severe communication impairment to assist them in identifying these types of behavior. The interviewer then asked the teacher to answer each of the questions contained in the IPCA and recorded the teacher's responses. Data from the interviews were summarized to generate a list of each child's behaviors that were interpreted by the teacher as serving a communicative function.

Naturalistic Observations

After the interview, naturalistic observations were conducted in the child's classroom. Observation sessions were 10 min and were videotaped. Sessions were conducted during each of three different activities for each child and this procedure was repeated over 3 days, providing a total of 90 min of videotape for each child. The activities used for videotaping were considered by the teacher to include a good number of communicative

Table II. Activities Selected for Naturalistic Observation

Patrick	Ian	Beth	Dave	Rue	Jake	Alex	Seth
Gross motor Music Snack	Gross motor Music Snack	Group time (e.g., story) Craft/toy play Snack	Group time Music Snack	Group time Music Snack	Group time Music Snack	Craft/toy play Music Snack	Group time Music Snack

opportunities for the child. Other criteria for selecting activities for videotaping were that the activity lasted at least 10 min and was scheduled at times and in locations that would allow for videotaping. Table II shows the activities selected for observations.

The videotapes were analyzed in 15-s intervals. The primary observer, a psychologist with extensive experience in assessing and supporting children with autism, paused the tape at the end of each 15-s interval and recorded the presence of any potential communicative acts, using the following definition from Wetherby and Prutting (1984):

A communicative act began when the child initiated interaction with the adult or an object and was terminated when the child's attentional focus shifted or a turn was exchanged. (p. 369)

Each potential communicative act, as defined above, was then coded for communicative function according to the definitions given in Table III. These definitions were the same as those used in the IPCA and derived from a review of the literature (Bernard Opitz, 1991; Cirrin and Rowland, 1985; Coggins and Carpenter, 1981; Donnellan *et al.*, 1984; Dore, 1975; Drasgow and Halle, 1995; Halliday, 1975; Iacono *et al.*, 1996; Linfoot, 1994; McLean and Snyder-McLean, 1987).

Teacher responses that occurred within 15 s of a potential communicative act, as defined above, were then classified into one of the three following categories:

- (i) **Acknowledgment:** a clear spoken statement from the teacher that indicated she had observed the child's behavior and had interpreted it as an attempt by the child to communicate something to her.
- (ii) **Reaction:** the teacher interacted with the child in some other (unspoken) way (e.g., by giving the child an item, removing an item, stopping a task), that indicated she had observed the child's behavior and was reacting to it.
- (iii) **No response:** the teacher did not acknowledge nor react to the child's prelinguistic behavior.

Table III. Definitions of Communicative Functions

Function	Definition
Requesting object	Behaviors initiated by the child that direct the receiver to provide an object to the child. Interest is on the object desired, on the <i>what</i> rather than the <i>how</i> . (e.g. child gets cup and gives it to the teacher; child tries to reach for an object that is out of reach).
Requesting action	Behaviors initiated by the child that direct the receiver to cause an action to occur. Interest is on the action itself, not the object or person that the child is directing. (e.g. child who needs help with a wind up toy gives it to the teacher and waits).
Attention to self	Behaviors used to call attention to the child. (e.g. child tugs at the teachers' clothes).
Comments	Behaviors that direct the listener's attention to some observable referent, such as an action or movement of an object, its appearance or disappearance. Expressing feeling. Labeling using a word or sign, while attending to an object or event. (e.g. child looks at a balloon as it deflates then looks at the teacher and laughs).
Social convention	Behaviors that occur in the context of a routine or convention. Greetings, responding to name and turn taking are included. (e.g. child turns to face the teacher when their name is called).
Reject/protest	Behavior that lets the listener know that the child doesn't want something suggested or initiated by another, disapproves of something or wishes to terminate an event that has already begun. (e.g. child throws toy given to it by the teacher onto the floor).
Responses	Behaviors produced in response to a question from another. (e.g. child reaches for the cup when the teacher holds the cup and asks if the child wants a drink).
Requesting information	Behaviors that direct the receiver to provide information or clarification about an object, action, activity or location.
Imitation	Repeating words or actions of another without waiting for a response.

Interobserver Agreement

A second observer, a doctoral student, and special educator experienced in teaching children with autism, independently scored a random sample of 33% of the videotapes for each child. The samples were equally distributed across the three different activities for each child. Percentage agreement was calculated using the formula: $\text{Agreements}/(\text{Agreements} + \text{Disagreements}) \times 100\%$. For the occurrence of a child's prelinguistic behavior, an agreement was counted when the two observers recorded the same communicative act for each 15-s interval. To score agreement on the occurrence of a communicative function, both observers had to assign the same function to a particular

potential communicative act. Percentage agreement for the occurrence of a potential communicative act ranged from 94 to 100% with a mean of 97%. For communicative function, mean agreement was 89%, and ranged from 79 to 95%. Agreement was also scored on the coding of teacher responses. An agreement was counted when the two observers recorded the same teacher response to a child's prelinguistic behavior on an interval-by-interval basis. Agreement levels for acknowledgments ranged from 67 to 100% with a mean of 88%. Agreement levels for reactions ranged from 38 to 100% with a mean of 68%. Agreement levels for no response by the teacher ranged from 40 to 100% with a mean of 65%.

RESULTS

Information gained from teachers using the IPCA was summarized in a grid format. The scoring grid has columns for each functional subcategory that are grouped according to communicative function, and rows listing the child's behaviors. Scanning the grid from left-to-right indicates the range of communicative functions reported by the teacher or parent. Scanning from top to bottom indicates the range of behaviors interpreted by the informant as having a communicative function. Each filled cell represents a potential communicative act (PCA). To illustrate, the scoring grid for one child, Beth, is shown in Fig. 1.

Table IV shows teacher acknowledgments, reactions, and no responses to each of the child's potential communicative acts that were observed during the 90 min of naturalistic observation. The number of teacher responses in each category is shown, together with the number of responses in each category as a percentage of the total number of responses. For example, Dave made eight requests for objects during the observation period, and four of these, or 50%, were acknowledged, with the teacher reacting to the remaining four requests.

The percentage of communicative acts acknowledged by teachers for all children ranged from 3 to 47% with a mean of 24%. Reactions ranged from 11 to 62% with a mean of 38% and no response ranged from 5 to 81% with a mean of 38%. Protesting/rejecting was most likely to be followed by a no response from teachers than all the other communicative functions except imitation, with teachers not responding to the child's attempts to protest/reject 51% of the time. Social convention was more likely to be acknowledged with 87% of teacher responses to social convention being acknowledgments. A number of functions were not observed for some children and in some cases, the number of communicative acts observed for particular functions was very low. Variation was seen across teachers and

BETH

TEACHER RESPONSE

	REQUEST OBJECT		REQUEST ACTION		ATTENTION TO SELF		SOCIAL CONVENTION		REJECT/PROTEST			COMMENT				RESPONSES		OTHER																			
	object	food	TV	help	hold	near	pet att	comfort	show off	greet	farewell	name	routine	do	don't like	take	adult		la	happy	sad	bored	funny	light	look	angry	path	look	yes	no	choice	request	definition				
take																																					
reach																																					
stand																																					
tap self																																					
say "me"																																					
bring to me																																					
run bump																																					
eyes wide																																					
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scream																																					
push mirror																																					
run away																																					
imitate words																																					
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stare																																					
stare																																					
happy																																					
on toes																																					
hold																																					
rigid																																					
actions																																					

Fig. 1. Teacher IPCA scoring grid for Beth.

Table IV. Number and (Percentage) of Teacher Acknowledgment, Reaction or No Response to Communicative Acts Categorized By Communicative Function

Child	Social convention	Protest	Respond	Request object	Attention	Comment	Request action	Imitation
Patrick	Acknowledge	0 (0)	0 (0)	2 (11)	(N/O)	(N/O)	3 (37.5)	(N/O)
	React	32 (26)	7 (78)	8 (42)			3 (37.5)	
	No response	92 (74)	2 (22)	9 (47)			2 (25)	
Ian	Acknowledge	1 (11)	3 (43)	1 (10)	(N/O)	0 (0)	6 (60)	0 (0)
	React	5 (56)	4 (57)	5 (50)		2 (100)	3 (30)	0 (0)
	No response	3 (33)	0 (0)	4 (40)		0 (0)	1 (10)	3 (100)
Beth	Acknowledge	3 (5)	1 (8)	0 (0)	1 (100)	3 (100)	2 (66.7)	1 (20)
	React	24 (37)	9 (69)	16 (62)	0 (0)	0 (0)	0 (0)	1 (20)
	No response	37 (58)	3 (23)	10 (38)	0 (0)	0 (0)	1 (33.3)	3 (60)
Dave	Acknowledge	0 (0)	0 (0)	4 (50)	0 (0)	(N/O)	(N/O)	(N/O)
	React	16 (84)	1 (100)	4 (50)	26 (96)			
	No response	3 (16)	0 (0)	0 (0)	1 (4)			
Rue	Acknowledge	0 (0)	0 (0)	10 (50)	(N/O)	(N/O)	(N/O)	(N/O)
	React	16 (61)	1 (100)	10 (50)				
	No response	15 (39)	0 (0)	0 (0)				
Jake	Acknowledge	0 (0)	7 (87.5)	17 (41.5)	0 (0)	1 (100)	(N/O)	(N/O)
	React	12 (86)	1 (12.5)	20 (48.5)	8 (62)	0 (0)	(N/O)	
	No response	2 (14)	0 (0)	4 (10)	5 (38)	0 (0)		
Alex	Acknowledge	0 (0)	0 (0)	1 (25)	0 (0)	1 (14)	(N/O)	2 (33)
	React	1 (50)	2 (29)	2 (50)	1 (100)	0 (0)		0 (0)
	No response	1 (50)	5 (71)	1 (25)	0 (0)	6 (86)		1 (67)
Seth	Acknowledge	0 (0)	0 (0)	7 (63.6)	0 (0)	1 (100)	(N/O)	(N/O)
	React	14 (28)	2 (100)	3 (27.3)	0 (0)	0 (0)		
	No response	36 (72)	0 (0)	1 (9)	1 (100)	0 (0)		

Note. (N/O = Not observed)

children in relation to the way in which a teacher responded. For example, Jake's potential communicative acts were acknowledged 47% of the time while Patrick's were acknowledged 3% of the time and Alex's 4%.

DISCUSSION

Interviews with the IPCA suggested that these teachers identified a range of prelinguistic behaviors in this group of children. Given that the teachers interpreted these behaviors as forms of communication, it might be expected that when these behaviors were observed in the classroom that there would be many instances where the teachers would respond to these acts in a way that would be consistent with their presumed communicative function. However, it is important to note that the communicative functions attributed to the children's potential communicative acts, as ascertained by the IPCA questionnaire, were not validated by direct observation in this study. Thus it is unclear if the communicative behaviors identified by the teachers were in fact intentional forms of communication on the part of the children. Still, the IPCA revealed that the teachers interpreted these acts as forms of intentional communication and one might therefore expect the teachers to respond to these acts in ways that were consistent with their interpretations.

In roughly two thirds of the cases the teachers responded to the children's prelinguistic behaviors in ways that would suggest they were acting on their interpretation of the child's prelinguistic behavior as intentional forms of communication. That is, 63% of the time the teachers either acknowledged the act verbally or responded nonverbally to the child's presumed communicative behaviors. The fact that the teachers responded to nearly two thirds of the children's prelinguistic behaviors is an important finding, but it is unclear if this represents a reasonable amount of responsiveness or perhaps too little. The rate of attention to these children's communicative attempts by teachers does not appear to be different from that of parents of typically developing children (Baird *et al.*, 1997; Hart and Risley, 1995; Haynes, 1998). However, the optimal rate of attention to these behaviors has not been empirically verified. Given their substantial degree of communication impairment one might expect that children with severe autism would require more frequent and more consistent reactions from adults to facilitate their communication development when compared to typically developing peers.

In 38% of videotaped instances, the teachers did not respond to the children's communicative attempts even though the child's behaviors were identified as intentional forms of communication during the IPCA interview. This lack of response, in 38% of the instances, is consistent with some previous

research (Houghton *et al.*, 1987; Rowland, 1990). This lack of teacher response in 38% of the instances should not be immediately seen as indicating a substantial lack of responsivity on the part of the teachers. Instead, there are several possible explanations for why teachers sometimes did not or could not respond to behaviors from the child's that the teachers said were forms of communication. First, teachers may not have responded in some cases because they simply did not observe the behavior. In other cases, the lack of response to the child's behavior may have been a deliberate strategy to extinguish forms of behavior that were considered inappropriate. Indeed, the teachers were more likely to ignore protesting/rejecting behaviors, which might be viewed as negative, than other communicative functions. However, it cannot be assumed that the form of protesting was always problematic or that problematic topographies of prelinguistic behaviors (e.g., tantrums, aggression) were restricted to the function of protesting/rejecting. A child might, for example, request objects by hitting others and screaming while another may reject a nonpreferred object by merely turning away. In some cases a teacher might choose to ignore the child's attempt to protest or reject because it is not acceptable for the child to escape from or avoid the activity. Still, this finding points to the need for further research, exploring whether certain forms and functions of prelinguistic behaviors are more likely to be responded to than others. Without these data it may be premature to conclude that the teachers were not attending to the children's presumed communication behaviors at a high rate.

Second, although it might be easy to identify prelinguistic behaviors during an interview, doing so in the flow of a busy classroom may be a completely different matter. Distractions caused by other children in the classroom and the subtle and unconventional nature of some of the behaviors may contribute to these difficulties. For example, Dave's teacher reported that he would turn away from something he didn't like and Rue's teacher said that he would go rigid when he wanted more of something. In a group activity, where the teacher's gaze may be directed toward another child, these behaviors may not be observed unless the teacher was watching for such a response.

Acknowledgment was the least likely teacher response to children's communicative behavior. This is a potential problem because there is some evidence to suggest that acknowledgment of prelinguistic behavior facilitates or predicts positive changes in children with disabilities (Yoder *et al.*, 1998). Linguistic contingent responses, for example, which involve caregivers making comments or directives about the child's focus of attention, have been shown to facilitate communicative development. Furthermore, linguistic mapping, where a caregiver says what a child might be trying to communicate, has also led to enhanced communication skills (Warren *et al.*,

1993; Yoder *et al.*, 1994). For children with highly subtle behaviors where the communicative intent is unclear, consistently “overinterpreting” and reacting to the child’s behaviors that seem to indicate communicative intentions related to interests, needs, and preferences may create opportunities for reflexive or unintentional behaviors to become more intentional forms of communication (von Tetzchner, 1997).

It is possible that the lack of an acknowledging response by the teacher may lead to extinction of the child’s potential communicative acts or escalation to more problematic forms such as tantrums and aggression as the child tries to repair the communicative breakdown. The results of this study suggest that teachers did identify a range of behaviors that they interpreted as communicative, but they did not always respond to these acts when they occurred in the classroom. This suggests that there may be potential value in developing interventions that are designed to encourage consistent acknowledgment of these behaviors in the classroom. Future intervention efforts might therefore be usefully focused on training teachers and parents in the specifics of attending to the children’s acceptable forms of prelinguistic behaviors. The aim of intervention would be to increase the child’s communicative effectiveness and facilitate the transition from prelinguistic to more symbolic forms of communication.

A number of factors related to the interpretations of the results from this study need to be considered. First, the interobserver agreement levels for teacher responses were perhaps somewhat lower than desired. Lower agreement rates are not uncommon when coding prelinguistic behavior, particularly for those with more severe disabilities (Yoder, 1987; Yoder *et al.*, 1994). In this case, it may have been that the level of agreement was affected by a lack of clarity in the coding definitions used for teacher responses. While some caution is therefore urged when interpreting the results, the agreement level was not far below what would generally be considered acceptable. Second, the number of communicative acts observed for each child in each functional category, and therefore the number of opportunities the teacher had to respond to these acts, were at times quite low. The relatively low level of agreement on teacher reactions was to some extent influenced by the low number of child behaviors. However, in light of the relatively lower agreement on teacher responses it is important to interpret the results with caution. Still, our data suggest that acknowledgment of behaviors that teachers have reported as communicative on the IPCA occurred 24% of the time on average. The potential advantages for the child’s communicative development of consistently acknowledging communicative attempts suggests there may be a need for intervention aimed at enabling teachers to more frequently acknowledge the child’s communicative acts.

The identification of potential communicative acts using a device such as the IPCA may be a useful first step for teachers concerned with the enhancement of the communication skills of children with severe communication impairments. Results from this study, however, suggest that even when teachers interpret behaviors as communicative, they may not always be acknowledging these behaviors when they occur in the classroom. It may therefore be necessary to go beyond the identification of behaviors that may be interpreted as communicative and to consider ways of identifying when these behaviors occur within the child's natural environment and how to increase the acknowledgment of these behaviors in a way that may help to shape such acts into more consistent and reliable forms of communication.

ACKNOWLEDGMENT

Appreciation is extended to Reviewer A for insightful comments on a previous version of this manuscript that have lead to a much-improved paper.

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