

Replacing challenging behavior: The role of communication intervention

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IT IS WIDELY accepted that all individuals communicate (National Joint Committee, 1992). Along with this acceptance, however, comes the acknowledgment that specific communication strategies emitted by learners may vary extensively. Although conventional forms of communication, including spoken language, sign language, and graphic mode representations, are the most common strategies of communicating, there are also instances in which less conventional communication strategies are used. An example of this can be observed when a hockey player throws a punch at a referee after a penalty has been called. Although the message being communicated in this situation is quite clear, the form used to communicate the message is somewhat unconventional as well as socially unacceptable.

Often, individuals who do not have conventional communicative repertoires that are sufficiently sophisticated to meet their needs will acquire less conventional forms to emit communicative functions. Some communicative forms fall within the context of challenging behavior. Challenging behavior has been defined as "behavior

emitted by a learner that results in self-injury or injury of others, causes damage to the physical environment, interferes with the acquisition of new skills, and/or socially isolates the learner" (Doss & Reichle, 1991, p. 215). Some commonly observed challenging behaviors are listed in Table 1. It is evident from the examples provided that challenging behaviors vary significantly in their form, frequency, duration, and intensity.

Traditionally, interventionists have viewed challenging behavior as nonfunctional behavior that should be suppressed before a functional communicative repertoire is established (Prizant & Rydell, in press). Recently, a number of investigators have demonstrated that a significant proportion of challenging behavior may be emitted to convey social intent (Carr & Durand, 1985; Doss & Reichle, 1991; O'Neill, Homer, Albin, Storey, & Sprague, 1990). Consequently, recent approaches to the deceleration of challenging behavior have focused on matching socially acceptable forms with the social function of the challenging behavior in an effort to provide an alternative behavior that is functionally equivalent to the challenging behavior.

FUNCTIONS OF CHALLENGING BEHAVIORS

The outcome produced by a challenging behavior is referred to as its function (O'Neill et al., 1990). Challenging behaviors can be divided into those that are emitted to obtain desired outcomes and those that are emitted to avoid or escape undesired outcomes. Figure 1 further divides these two general functions. As indicated in Figure 1, the functions of obtain and escape/avoid can be either socially or nonsocially motivated. Behaviors that require the mediation of others to have a consequence are referred to as socially motivated. Examples of socially motivated challenging behaviors include screaming to draw the attention of a teacher and throwing objects when a task becomes too difficult or boring. Even though each of the preceding behaviors is associated with a different social function (the function of the first example is to obtain a desired outcome and of the second to escape an undesired outcome), both require the mediation of another person to have a consequence; thus both examples are socially motivated. Behaviors that do not require the mediation of others to have a con-

Table 1. Examples of common challenging behaviors

Form of challenging behavior	Description of challenging behavior
Crying	Learner cries loudly for approximately 5 minutes 3 to 5 times per day
Throwing objects	Learner throws objects for 20 to 30 seconds approximately 1 to 2 times per week
Hitting others	Learner hits other students with fist for approximately 5 seconds 10 to 20 times per week
Hitting self	Learner hits self on the head with fist for 3 to 5 minutes approximately 10 times per day

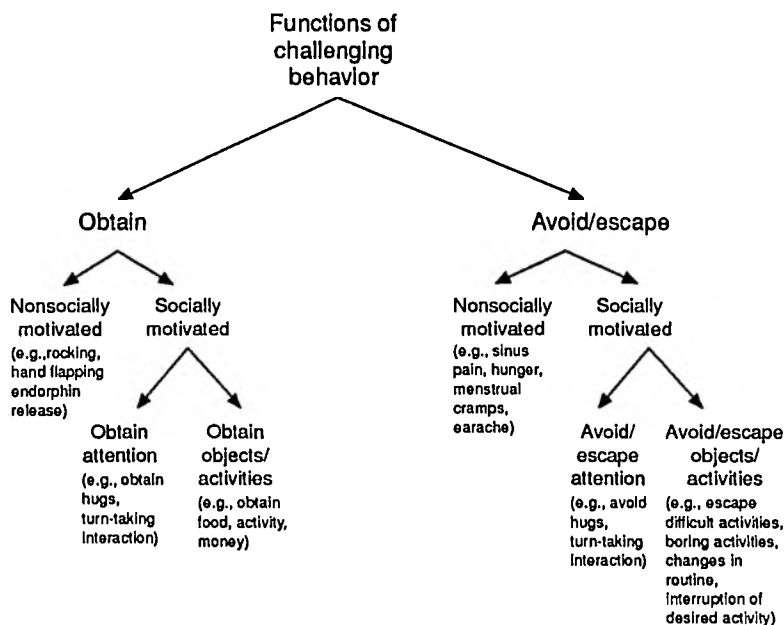


Figure 1. Functions of challenging behaviors. *Source:* Adapted with permission from *Functional analysis of problem behavior: A practical assessment guide* (p. 13) by R.E. O’Neill, R.H. Horner, R.W. Albin, K. Storey, & J. Sprague, 1990, Sycamore, IL: Sycamore Publishing Company. Copyright 1990 by Sycamore Publishing Company.

sequence are referred to as nonsocially motivated. Examples of nonsocially motivated challenging behaviors include rocking to obtain sensory stimulation and hitting oneself on the side of the head in response to an earache. Although each of these examples serves a different function, they are similar in that both are nonsocially motivated.

In addition to dividing the functions of obtaining desired consequences and escaping or avoiding undesired events into socially and nonsocially motivated challenging behaviors, Figure 1 illustrates that a socially motivated behavior to obtain a positive outcome can be emitted either to obtain attention (e.g., a hug) or to obtain objects or activities. Similarly, a socially motivated behavior to avoid or escape an undesired

outcome can be emitted either to avoid or escape attention (e.g., social interaction) or to avoid or escape objects or activities (e.g., a boring task).

Some challenging behavior may originate as nonsocially motivated behavior but become socially motivated as a result of contingencies delivered in the natural environment. For example, learners might poke their fingers into their eyes because of the sensory stimulation that it provides (nonsocially motivated). Across instances of eye poking, however, a history of receiving comforting attention immediately after each instance may develop. If learners enjoy the attention that they are receiving, they may learn to poke themselves in the eye as a means of obtaining attention. Consequently,

a behavior that originally served a nonsocial function may through reinforcement history come to serve a social function.

Understanding that challenging behaviors are emitted to serve various functions enables the interventionist to consider the role that pragmatics may play in determining equivalent socially acceptable forms of behavior that compete functionally with existing forms of socially unacceptable expression. Before one designs an intervention procedure that replaces a challenging behavior with more socially acceptable communication forms, it is necessary to match social functions accurately to the actual repertoire of challenging behaviors that an individual emits.

DETERMINING THE FUNCTION OF A CHALLENGING BEHAVIOR

Table 2 lists hypothetical challenging behaviors emitted by a learner as well as the functions that each of these challenging behaviors serves. As illustrated, it is possible for a learner to use a single behavioral form to serve more than one social function. For example, the learner described in Table 2 uses the behavioral form of crying to obtain attention as well as to avoid objects and ac-

tivities. Consequently, when one is designing an intervention, it will be important to consider conventional communication strategies to express each of these functions. Table 2 also illustrates that it is possible for a learner to use more than one behavioral form to serve a single social function. For example, a learner might emit crying and object throwing to avoid objects and activities.

In some instances, determining the function of a particular behavior can be a complicated task. In recent years, a number of assessment strategies have been described that assist the interventionist in developing and confirming a hypothesis regarding the social function of a challenging behavior. Generally, assessment strategies include interviews, direct observations, and environmental manipulations.

Interviews

As the term implies, an interview usually comprises a series of questions or checklists that must be completed by an individual who is familiar with the learner and the challenging behaviors that the learner emits. The outcomes of the interview are description of the challenging behavior, identification of the factors that predict the occurrence of the challenging behavior, and identification of the possible functions of the challenging behavior. Table 3 outlines the areas that are typically addressed in an interview and provides examples of questions that might be asked within each of these areas (O'Neill et al., 1990).

Interviews are extremely beneficial in that they provide a quick and relatively easy way to begin to identify factors that may contribute to the emission of a challenging behavior. In addition, they identify one or

Table 2. Examples of a specific learner's challenging behaviors and the functions that they serve

Form		Function
Crying	↔	Obtain attention
Crying	↔	Avoid objects or activities
Throwing objects	↔	Avoid objects or activities
Hitting self	↔	Nonsocially motivated/ obtain attention

Table 3. Areas typically addressed in an interview

Components of an interview	Examples
Describe the behavior	What are the behaviors of concern? For each behavior, define the topography, frequency, duration, and intensity.
Define potential ecological events	What medications is the person taking (if any), and how do you believe these may affect his or her behavior? Describe the eating routines and diet of the person and the extent to which these routines may affect his or her behavior. Describe the activities that are performed on a typical day.
Define events and situations that predict the occurrence of the behavior	When are the behaviors most likely to occur? Least likely? With whom are the behaviors most likely to occur? Least likely? What activity is most likely to produce the behavior? Least likely?
Identify the function of the challenging behavior	Are the behaviors more likely to occur, less likely to occur, or unaffected if you present him or her with a difficult task? Are the behaviors more likely to occur, less likely to occur, or unaffected by changes in routine?
Define the efficiency of the challenging behavior	What amount of physical effort is involved in the behaviors? Does engaging in the behaviors result in a payoff (getting attention, avoiding work) every time? Almost every time? Once in a while?
Define the primary method(s) used by the person to communicate	What are the general expressive communication strategies (e.g., communication board) used by or available to the learner? How consistently are the strategies used? Indicate which behaviors the person exhibits to achieve specific communicative functions (e.g., to request attention, to request help, to show you something, etc.).
Determine the events, actions, and objects that are perceived as positive by the person	In general, what things (events, activities, objects, people) appear to be reinforcing or enjoyable for the person?
Determine the functional alternative behaviors that are known by the person	What socially appropriate behaviors or skills does the person perform that may be ways of achieving the same function(s) as the behaviors of concern? What things can you do to improve the likelihood that a teaching session will occur smoothly?
Obtain a history of the challenging behaviors and the programs that have been attempted	Provide a history of the programs that have been attempted and the effect of the programs on the deceleration of the challenging behavior(s).

Source: Adapted with permission from *Functional analysis of challenging behavior: A practical assessment guide* (p. 6–15) by O’Neill, R., Homer, R., Albin, R., Storey, K., & Sprague, J., 1990, Sycamore, IL: Sycamore Publishing Company. Copyright 1990 by Sycamore Publishing Company.

more plausible functions of a challenging behavior. The reliability and validity of the information received from an interview,

however, are entirely dependent on the knowledge of the interviewee. That is, various extraneous factors (e.g., the individual’s

familiarity with the learner and individual's background) may influence the results obtained from an interview. To validate and qualify further the information obtained from the interview, it is necessary to follow up with direct observations.

Direct observations

Direct observations provide the interventionist with the opportunity to observe the emission of the challenging behavior and to observe the learner in a broad range of situations. During direct observations, information is typically obtained regarding the frequency and/or duration of the behavior, the antecedents that may influence the behavior

(e.g., the time of day or the people present), the place or setting in which the behavior occurs, and the consequences delivered after the behavior has been produced. Direct observations often take the form of an analysis of behavioral antecedents and their consequences (A-B-C analysis). Figure 2 shows an example of an A-B-C analysis. As it illustrates, the interventionist records the date, time, relevant antecedents, possible functions, and consequences delivered each time that the behavior occurs. After completing an A-B-C analysis, the interventionist looks for patterns related to the occurrence of the challenging behavior (e.g., the challenging behavior occurs at a particular

Name: Mark
 Description of behavior(s) of interest: Hitting others

Date	Time	Antecedent	Behavior	Consequence	Possible function	Comments
5-9	2:00	vacuum	hit	ignore	escape	
5-9	2:05	"	"	"	"	
5-9	2:15	"	"	"	"	
5-9	2:17	"	"	release	"	
5-10	3:05	vacuum	hit	ignore	escape	
5-10	3:07	"	"	"	"	
5-10	3:10	"	"	release	escape	
5-11	2:10	"	"	ignore	"	
5-11	2:15	"	"	release	escape	
5-12	3:00	nothing	scream	scream	?	

Figure 2. A completed A-B-C analysis for tracking behavior problems.

time of day or in the context of specific persons or activities). Discovering the patterns of when a challenging behavior is and is not occurring helps identify the function of as well as the factors that relate to the challenging behavior. For example, the A-B-C analysis described in Figure 2 reveals that hitting others is usually associated with times of the day when the learner is vacuuming (antecedent) and that the behavior usually results in a release from the activity (consequence). On the basis of this information regarding the antecedents and the consequences of the challenging behavior, it may be possible to generate the hypothesis that the challenging behavior is being emitted to escape or avoid vacuuming. For information regarding elaborating on observational assessment procedures, the reader is referred to O'Neill et al. (1990).

In summary, direct observations enable the interventionist to examine the relationships among the variables of frequency, time, settings, and consequences. From the information gained regarding the relationships among these variables, it is possible to generate a hypothesis regarding the function of the behavior. As a result of the interview and the direct observations, the interventionist often is able to determine the function of the challenging behavior. On occasion, however, the function of the challenging behavior may still be unclear. In these situations, it may be beneficial to conduct a series of systematic environmental manipulations.

Environmental manipulations

Even after interviews and direct observations have been completed, the function of some challenging behaviors may not have been delineated adequately. Environmental

manipulations are a helpful means of testing the hypotheses that could not be confirmed as a result of confounding conditions present in the milieu of the learner's regular daily routine. For example, interviews and direct observations revealed that during story time Jimmy often screamed and threw objects. As a result of the screaming and throwing, Jimmy was usually permitted to leave the activity. Additionally, Jimmy received a substantial amount of nurturing attention from the classroom assistant (e.g., the assistant would engage Jimmy in another activity or take him out of the classroom for a drink from the water fountain). Because Jimmy's escape from story time was always paired with attention from the assistant, it was impossible to determine clearly the function of Jimmy's challenging behavior. Therefore, it was necessary to conduct a series of environmental manipulations to determine whether an attention-getting or a leave-taking utterance should be established to replace Jimmy's problem behavior.

Implementing environmental manipulations involves altering particular antecedents or consequences believed to be associated with a learner's emission of challenging behavior and then observing how these changes influence the likelihood that the learner will engage in challenging behavior. For example, we could use environmental manipulations to test the hypothesis that Jimmy (in the preceding example) threw objects and screamed to obtain attention. This would be accomplished by setting up the environment so that on some occasions Jimmy would be allowed to leave story time contingent on screaming and throwing but would not be given access to attention from the teaching assistant. On

other occasions, Jimmy's teaching assistant would sit with him during story time and provide attention.

Figure 3 shows Jimmy's behavior in the context of each of these situations. Note that in this example screaming and throwing objects occurred more frequently when Jimmy did not have the attention of the teaching assistant. Consequently, the hypothesis that the challenging behavior occurs to obtain attention is supported. If the challenging behavior had not occurred with any greater frequency across the two contexts, however, the hypothesis would not have been supported.

Although environmental manipulations can be useful in determining the social function(s) that must be addressed by the communication interventionist, several cautions must be noted. Before the environ-

ment is arranged to elicit a challenging behavior, the interventionist must carefully consider the ramifications of implementing an assessment that may provoke socially unacceptable behavior. O'Neill et al. (1990) specify cautions and guidelines regarding conducting environmental manipulations: conducting environmental manipulations only when relevant variables can be controlled, assessing the risk involved for clients and staff, obtaining the necessary approval for the environmental manipulation procedures, utilizing necessary safety procedures and equipment, considering the assessment of precursor behavior as an alternative strategy, and using environmental manipulations to evaluate specific hypotheses regarding the antecedents, consequences, and functions of challenging behaviors.

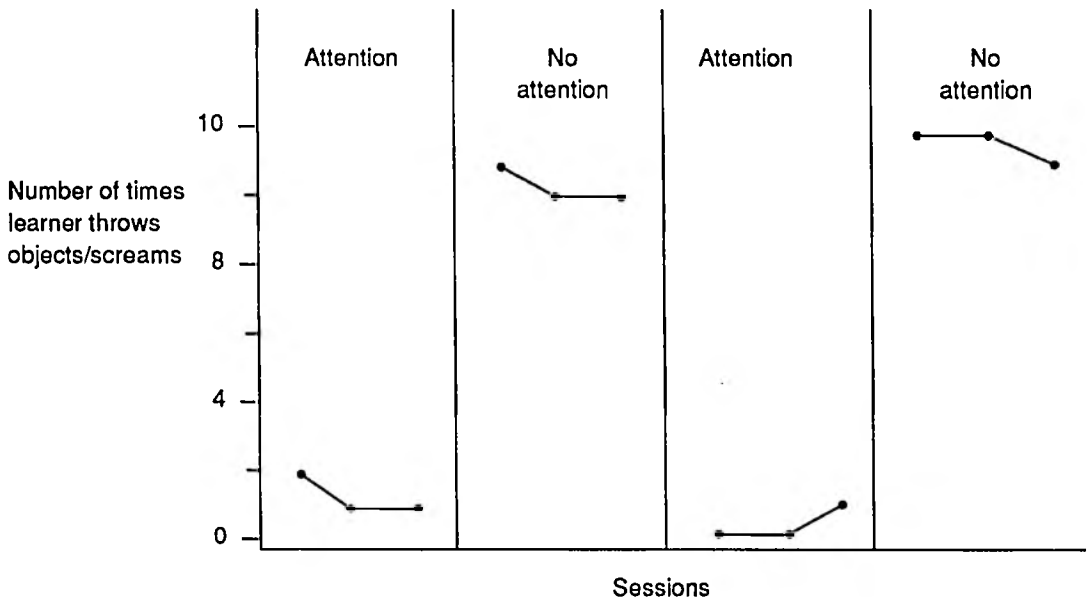


Figure 3. Environmental manipulation to test the hypothesis that a learner throws objects and screams to get attention.

Summary

It is important to match social functions accurately to the repertoire of challenging behavior that an individual emits. This match can be achieved through interviews, direct observations, and environmental manipulations. After the social function of a challenging behavior has been determined, an intervention program designed to decelerate the challenging behavior can be developed.

STRATEGIES FOR IMPLEMENTING INITIAL COMMUNICATIVE FUNCTIONS THAT COMPETE WITH CHALLENGING BEHAVIOR

In general, several major principles guide the development and implementation of an intervention program designed to decelerate challenging behavior:

- Make the communicative alternative efficient in obtaining reinforcement.
- Minimize the efficiency of the learner's existing challenging behavior in obtaining reinforcement.
- Minimize the situations that require the interventionist to implement a procedure that reacts to the emission of challenging behavior.

When an individual uses challenging behavior communicatively, the interventionist's responsibility is twofold. First, he or she needs to establish the new communicative form. At the same time, however, steps must be taken to ensure that the new communicative form being established will be more efficient than the existing challenging behavior. An instructional technology has emerged to assist interventionists in mixing and matching procedures that ad-

dress unique repertoires of socially motivated challenging behavior. Guidelines that lead to the successful implementation of intervention procedures that replace challenging behavior with communicative alternatives follow.

Select a replacement behavior that is potentially more efficient than the behavior being replaced

Horner and Day (1991) describe several criteria that directly influence a learner's judgment of response efficiency: the effort required to produce a communicative form compared to the effort required to emit the existing form, the schedule of reinforcement, and the delay between the communicative emission and the delivery of reinforcement. For example, among learners with more severe developmental disabilities, interventionists often consider teaching a learner to touch a symbol housed in a communication wallet rather than scream to obtain attention. From the learner's perspective, however, the physical effort required to pull a wallet out of a pocket, open it, and touch a symbol may be far greater than that required to scream. Furthermore, touching the graphic symbol may develop a history of being successful when the learner's listener is attending to him or her but unsuccessful when the listener is not looking. On the other hand, screaming always results in the desired outcome: attention. Finally, touching a symbol may result in teacher responses such as "I'll be right there" that are followed by the delivery of attention at some later time. Screaming, on the other hand, may result in immediate attention.

In the scenario outlined above, it is highly unlikely that screaming will be replaced successfully with a socially acceptable al-

ternative unless some adaptations are made. For example, instead of a graphic representation that produces no auditory signal, the interventionist might choose a microcassette recorder accessed via a 1" × 1" push plate switch, both of which could be worn on the learner's belt. Upon the learner's depressing the switch, the message "Excuse me, could you please come here?" would be emitted. This alternative would require little effort for the learner to provide an audible prompt to the teacher, whose attention may not be directed at the learner at the point of the learner's communicative emission. Furthermore, the teacher could be coached to attend immediately to the microcassette emissions. If access was arranged so that once the recorder was activated it continued to produce a request for attention every 5 seconds until it was turned off, added prompts for the teacher to provide attention as soon as possible would be created. Finally, the learner's teacher might be coached to refrain from providing attention contingent on the emission of attention-seeking screams that may occur after requests for attention with the microcassette recorder have been made.

Selection of a specific replacement for challenging behavior may depend, to a great extent, on the efficiency with which a new form of behavior can be prompted. With a learner whose vocal emissions are not under imitative control, it may be virtually impossible to prompt the replacement behavior in the absence of the challenging behavior. For example, the interventionist may present a model for the vocal behavior ("Come here, please"). Because the learner does not have a generalized imitative repertoire, however, he or she may find it far easier and more efficient to bang his or her head against the nearest available surface. In replacing so-

cially motivated challenging behavior, it is important to ensure that the socially acceptable behavior being taught can be prompted successfully before the learner has had to engage in challenging behavior. Among learners who are not vocally imitative, an augmentative communication system (e.g., gesturing or touching a graphic symbol to activate a recording) may more readily allow instructional prompts to be delivered in the absence of challenging behavior.

Minimize the efficiency of the challenging behavior

If a learner has a history of continuing to obtain desired attention when he or she screams, it is highly unlikely that screaming will be replaced even if the interventionist is able to prompt a more socially acceptable communicative form. Therefore, at the same time that the interventionist establishes a program to reinforce a new socially acceptable form, he or she must also take steps to ensure that the learner does not continue to obtain the desired outcome for engaging in the challenging behavior. For example, consider Carol, a learner who screamed to obtain objects. Our intervention strategy involved prompting Carol to point to a desired object rather than scream. To maximize the efficiency of the new behavior, pointing always resulted in access to the desired object. To minimize the efficiency of the screaming, it had no consequence.

In some instances, minimizing the reinforcement delivered for engaging in a challenging behavior can be quite difficult. For example, with a learner who hits other peers to recruit attention, ignoring the hit or otherwise attempting to minimize its successfulness may not be possible. In these instances, it becomes necessary to minimize the prob-

ability that the hit will occur in the first place. In part, this may be handled by environmental adaptations that move the learner who hits farther away from a peer who may be a target for hitting. An additional strategy might involve ensuring that sufficient attention is delivered at the outset of the instructional program to minimize the learner's need to hit. This option should minimize the interventionist's need to implement procedures that react to the emission of challenging behavior.

Minimize the need to implement procedures that require the interventionist to react to the learner's emission of challenging behavior

Implementing procedures that react to the emission of challenging behavior presents several potential problems for the interventionist. First, once a challenging behavior has been emitted, the learner is likely to be sufficiently upset that it becomes more difficult to recruit his or her attention to participate in an intervention procedure. Second, if the challenging behavior has already been emitted, the interventionist runs the risk that the desirable (prompted) alternative communicative response will be associated with the preceding emission of the challenging behavior. If this occurs, the interventionist also runs the risk of establishing a chain of behavior in which the learner may emit his or her challenging behavior followed by the socially acceptable behavior on those occasions in which the challenging behavior alone did not result in the desired outcome. Third, when the interventionist implements an intervention procedure after the challenging behavior has been emitted, the likelihood of the interventionist or other vulnerable individuals being injured or otherwise adversely affected is increased.

PROCEDURES THAT ADDRESS ATTENTION-MOTIVATED CHALLENGING BEHAVIOR

Within recent years, a number of intervention techniques have been described that maximize the probability of prompting a communicative alternative in the absence of the occurrence of an existing challenging behavior, thus establishing a socially acceptable alternative behavior that prevents the learner from having to consider engaging in a challenging behavior.

Attention-motivated challenging behavior may occur in a wide variety of circumstances. Consequently, it may be important during the assessment phase to identify clearly the range of antecedent conditions that may occasion attention-seeking behavior. Unless the range of antecedent conditions is addressed in the design and implementation of the intervention strategy, it is quite likely that newly established communicative attention-seeking behavior will not generalize. For example, several years ago we met Kyle. As long as an adult interacted with Kyle, he was pleasant and engaged in no challenging behavior. Once attention was withdrawn, however, a wide variety of challenging behaviors was emitted that included screaming, head banging, and spitting. After a careful observational assessment, it was possible to identify an array of provoking antecedents and consequences that tended to correlate with each of his three challenging behaviors. As shown in Table 4, depending on the antecedents, Kyle screamed, banged his head, or spit at others. Unless each of these was addressed, Kyle was apt to continue his challenging behaviors.

Our experience with Kyle taught us that socially motivated challenging behavior

may occur under subtly different conditions. In Kyle's case, he already had socially acceptable strategies to use in initially recruiting attention. Thus it was important to choose situations in which he already had obtained attention but was in danger of losing it. Furthermore, although Kyle's screaming, spitting, and head banging served the same function of being attention motivated, each topography was associated with specific antecedent events. Consequently, intervention procedures had to be developed to assist Kyle in learning to associate socially acceptable behavior with each type of provoking antecedent.

In Kyle's case, our intervention strategy involved the implementation of a mand-model instructional procedure which uses teacher-initiated instructions to generate instructional opportunities. Specifically, the interventionist delivered a warning, "Kyle, I'm gonna leave for a second" or "Kyle, I'm gonna talk to Jimmy, but I'll be right back. If you want me, call me." The delivery of a reminder to use his socially acceptable strategy paired with the promise of imminent return was sufficient to decelerate Kyle's attention-maintaining challenging behavior. Across instructional opportunities, a time

delay procedure was implemented to reduce Kyle's need for the interventionist's verbal prompt instructing him to request attention if he needed it.

PROCEDURES THAT ADDRESS ESCAPE- OR AVOIDANCE-MOTIVATED CHALLENGING BEHAVIOR

Several years ago we encountered John, who was learning to be a janitor at a local movie theater. As soon as it became clear to John that his job coach expected him to engage in work (i.e., by the coach's saying "John, time to go to work"), John engaged in a cluster of challenging behaviors that included taking unauthorized leave from the area, kicking, hitting, biting, and doing whatever else was required to extricate himself from the work environment. During the interview and observational segments of the assessment procedures, it became apparent that John had a history of being reinforced for engaging in escape-motivated challenging behaviors. Initially, John's escape strategy consisted of attempts to walk away from work. Predictably, when he attempted to depart, his job coach delivered partial

Table 4. The array of provoking antecedents and provoking consequences that tended to correlate with the emission of Kyle's challenging behaviors

Behavior	Provoking antecedent	Provoking consequences
Screaming	Withdrawal of attention regardless of proximity or visibility of listener	Occasional comforting by listener
Spitting	Withdrawal of attention, screaming that received no attention, proximity of prospective attention giver	Occasional delivery of verbal reprimands
Head banging	Withdrawal of attention, screaming or spitting, no attention as a result of screaming or spitting	Provision of immediate attention

physical guidance paired with statements such as “It’s time to work; you need to get to work now.” Because the job coach was larger and stronger than John, rarely was John successful in leaving the job site, but also rarely did he engage in any work. John’s repertoire of challenging behaviors appeared to be motivated by being able to postpone and avoid engaging in work.

Establishing a communicative replacement for escape-motivated challenging behavior is a good example of one of the important dilemmas facing the communication interventionist. On the one hand, it is enticing to establish a socially acceptable communicative behavior that would allow John to escape work. Inherent in making this decision, however, is establishing a priority of instructional objectives that ranks teaching a communicative rejecting or leave-taking response higher than learning to engage in work. From the perspective of John’s job coach, this ranking of priorities may not have been acceptable. An alternative approach might involve manipulating the conditions associated with work to establish first some level of participation before empowering the learner to reject his way out of work. In this intervention scenario, once John learned to engage in some level of work, a communicative leave-taking response would be established. These two options are described below.

Establishing a generalized leave-taking utterance as an initial objective

In establishing communicative leave taking as a replacement for the challenging emission, the team that served John concluded that establishing a socially acceptable alternative that resulted in the same reinforcement held the highest priority.

Before intervention, John continued to struggle with his job coach to keep himself extricated from his job. During the initial phase of the program, John was able to completely escape work for a fixed period of time as a consequence of producing a simple headshake (“no”). His new communicative response was tremendously more efficient in avoiding work than his old response. Additionally, care was taken to prompt this response before the onset of John’s challenging emissions. Consequently, the prompt could be delivered at a time when John’s struggling did not compete with obtaining his attention for instruction.

During the second phase of this intervention, John’s job coach sought to take back a small amount of control by reestablishing himself as the point of release from work. Immediately after John produced his leave-taking gesture, the job coach said, “Just a second” and then immediately said, “OK, let’s go.” Across opportunities, the interventionist’s objective was gradually to increase the interval between John’s leave-taking utterance and his release from work. Once this interval had become as long as 20 seconds, the interventionist sought to increase John’s work participation slightly before task release.

During the initial opportunity to reintroduce work, John requested leave as he had been doing for some time. Immediately his job coach said, “OK, just a second,” just as he had been doing for some time. As the job coach stood up, however, he said, “Hey John, hand me that broom, will ya?” The broom was proffered and the escape granted. As the demands became increasingly more directive, the job coach correspondingly increased the reinforcement as

sociated with release from the task. For example, at one point, just after John requested leave, the job coach responded, "OK, just a second . . . would you sweep up those crumbs and then we'll have a Coke."

Over the next 9 months, a series of small program modifications was made by the job coach. Gradually, the reinforcers that were available contingent on desired work were specified before John had an opportunity to produce his leave-taking utterance. John's use of the leave-taking gesture also started being differentially reinforced. That is, after the reinforcer available for task completion was offered, John had the option of requesting leave. If he did, leave was given without access to the reinforcer. When the work specified was completed, the identified reinforcer was offered.

In summary, this intervention procedure initially established a socially acceptable communicative behavior that allowed the learner to escape work. Then, the intervention was modified gradually to increase the amount of work that the learner completed as well as the amount of time the learner remained on task.

Establishing work skills as an initial objective

There are some events that are sufficiently important to learners' continued well-being that they cannot be permitted to escape the event. Examples include taking medication to control seizures and wearing orthotic devices to provide necessary physical support. Consider Melissa, a preschooler who was required to wear ankle-foot orthotics (AFOs). These plastic inserts were fitted to the learner's heel and ran up the back of her calf. Melissa had a history of screaming when approached with the

AFOs. She continued to scream and cry while wearing them throughout the morning. Although Melissa's teacher and educational staff attempted to ignore her crying, they could not. Usually within an hour, the AFOs were removed. It was apparent that Melissa's crying was being reinforced by the educational staff's action. Interestingly, most of the intervention activities were implemented once a crying episode had been instigated. Instead of continuing to search for a viable reactive strategy, the staff instigated an alternative strategy of manipulating events before a provoking stimulus for crying. The strategy chosen consisted of a package of procedures designed to distract Melissa from the undesired activity (wearing AFOs) and reinforce noncrying behavior with limited escape from the undesired activity.

Initially, Melissa's teachers were asked to locate several items or events that were reinforcing for Melissa. They identified drinking milk and being rocked in a teacher's lap. On the first day of implementation, staff were told not to put Melissa's AFOs on her immediately upon her arrival. Instead, they were directed to deliver a bottle of milk and to rock Melissa. Once Melissa was positively engaged, they were directed to place one of the AFOs on Melissa's foot without talking about putting it on. After the AFO was on the first foot for a brief period, it was removed contingent on no crying behavior. If crying did occur, the AFO was not removed until there had been at least 30 seconds of no loud crying. Once the AFOs were removed, a 30-minute rest from them was provided.

A final component of the intervention strategy attempted to establish a history of positive interaction with Melissa while in-

terventionists handled her feet. During baseline, Melissa seemed to become particularly provoked in response to prolonged contact with her feet. During breaks from wearing her AFOs, educational staff engaged Melissa in various nursery games incorporating playing with her feet (e.g., "this little piggy"). The purpose of this component of the program was to make touching Melissa's feet a less discriminable component of the package of activities that had originally resulted in crying.

The outcome of Melissa's program was positive. Almost immediately, Melissa no longer cried with the onset of wearing her AFOs. She did engage in some fussing and whining, however, if interventionists too quickly lengthened the amount of time that she was required to wear her AFOs. For Melissa, the interventionists' goal continues to be for her to wear her AFOs for increasingly longer periods with breaks between wearings growing increasingly shorter.

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Remarkable gains have been made in proactive approaches to the management of challenging behavior. It is becoming increasingly clear that in a significant number of instances communication intervention is a crucial component of proactive procedures. Recent assessment technology (e.g., O'Neill et al., 1990) has demonstrated the

importance of integrating information derived from interviews, observations, and environmental manipulations in pinpointing possible social motivations for challenging behavior. Other investigators (e.g., Durand & Carr, 1987) have demonstrated the importance of matching the communicative function to be established as directly as possible to the social motivation of the challenging behavior. After a communicative function has been identified, it is important to select a response topography that will compete with the efficiency of the existing challenging behavior that is to be replaced.

The emission of challenging behavior has been cited as a significant contributor to failed efforts to integrate and include persons with developmental disabilities in regular education and community living programs (Reichle & Light, 1992). Historically, early efforts at managing challenging behavior focused on procedures that attempted to suppress them. Recently, intervention efforts have sought to focus on the social motivation for the challenging behavior. By doing so, the function of the behavior may be replaced by a more socially acceptable alternative. The inclusion of less suppressively oriented intervention options has resulted in great achievements in managing challenging behavior and at the same time has contributed to the dignity and empowerment of the learners being served.

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