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Designing and Implementing Interventions to Decrease Challenging Behavior

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Communication interventionists often encounter children whose ability to learn new skills and interact with others is jeopardized by challenging behaviors. Challenging behaviors may take many forms (e.g., hitting, screaming, self-injury) as well as serve a variety of purposes or functions (e.g., obtaining access to or escaping from objects, activities, or attention). The purpose of this article is to (a) discuss assessment strategies that interventionists may find helpful when attempting to accurately pinpoint the function of challenging behavior, (b) present an array of proactive interventions that can be used to decrease escape-motivated challenging behavior, and (c) present various proactive interventions that can be used to decrease access-motivated challenging behavior. Additionally, factors that may influence the selection of one intervention strategy over an alternative intervention strategy are discussed.

KEY WORDS: behavior management, communication intervention, challenging behavior, aggression, tantrums

Communication interventionists frequently encounter children whose ability to learn new skills and to interact with others is jeopardized by their challenging behavior. Challenging behavior has been defined as "actions emitted by a learner that result in self-injury or injury of others, cause damage to the physical environment, interfere with the acquisition of new skills, and/or socially isolate the learner" (Doss & Reichle, 1991, p. 215). As the preceding definition suggests, challenging behaviors can take many forms and serve a variety of purposes or functions (O'Neill, Horner, Albin, Storey, & Sprague, 1990). O'Neill et al. suggested that challenging behaviors may be emitted in order to obtain desired outcomes or to escape undesired outcomes. Figure 1 illustrates further that challenging behaviors engaged in to obtain or to escape can be either socially or nonsocially motivated. Socially motivated challenging behavior requires the mediation of others to achieve the desired outcome (e.g., a learner who screams to get the teacher's attention). Conversely, nonsocially motivated challenging behavior does not require the mediation of others to achieve the desired outcome (e.g., a learner who rocks back and forth for the sensory stimulation).

If the function of a learner's challenging behavior is not considered carefully during intervention planning, the ultimate effectiveness of an intervention may be jeopardized because the occurrence of the challenging behavior may be reinforced inadvertently. For example, consider a learner who hits others. By concentrating solely on the form of the challenging behavior, an interventionist might attempt to diminish it by physically restraining the learner each time he or she hits. However, assessing the behavior's function might reveal that the learner hits to get attention. If this is the case, an intervention involving physical restraint actually may reinforce hitting. Because challenging behavior can serve a variety of functions, an assessment that accurately identifies a behavior's function is usually necessary.

ASSESSING THE FUNCTION OF A CHALLENGING BEHAVIOR

An interventionist may find a number of assessment strategies helpful when attempting to accurately pinpoint the function of challenging behavior. These assessment strategies include interviews, direct observations, and environmental manipulations. It is important to note that although the following overview presents functional assessment as a relatively straightforward process, interventionists often encounter assessment situations that are significantly more complex. For a more detailed discus-

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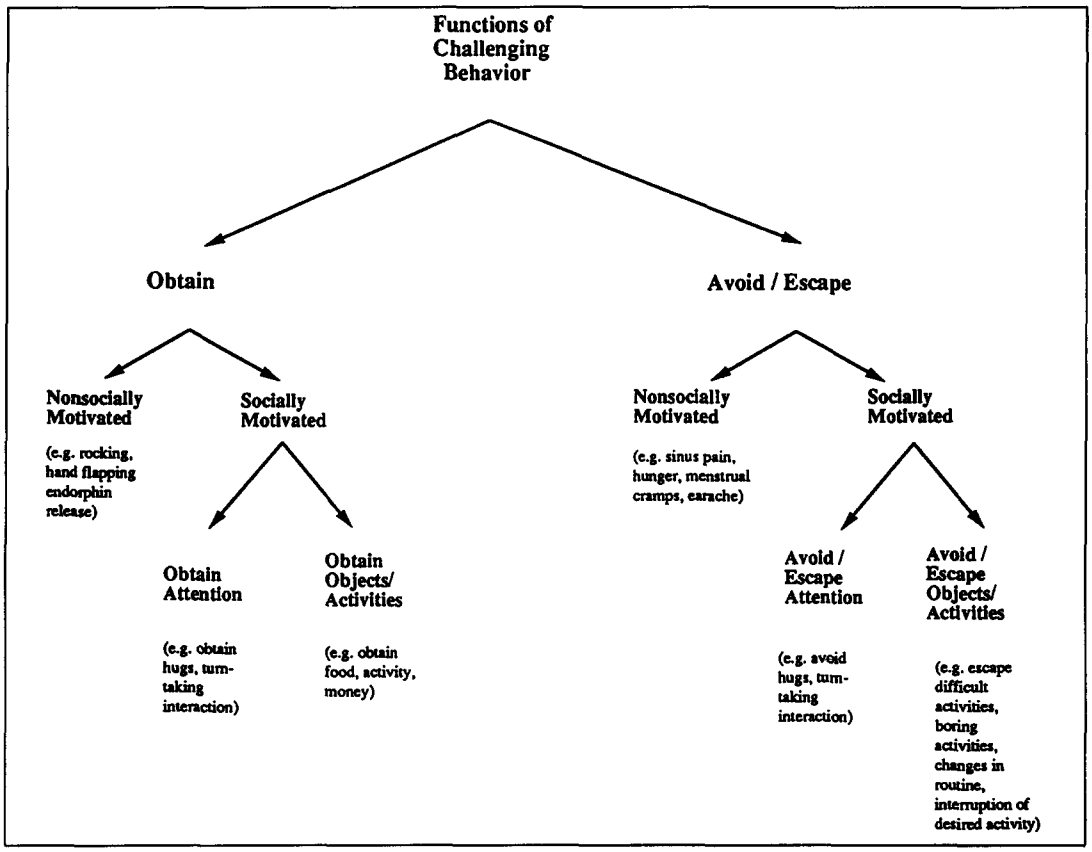

FIGURE 1. Functions of challenging behavior. Adapted from O'Neill, R. E., Horner, R. H , Albin, R. W., Storey, K., & Sprague, J. (1990). *Functional analysis of problem behavior: A practical assessment guide* (p. 13). Sycamore, IL: Sycamore Publishing Company. Copyright 1990 by Sycamore Publishing Company.

sion of these complexities, see O'Neill et al. (1990), Reichle & Johnston (1993) and, Durand (1990).

An interview typically is comprised of a series of questions or checklists completed by an individual who is familiar with the learner. Results of in-depth interviews, such as the Functional Analysis Interview by O'Neill et al., is designed to provide the interventionist with (a) a description of the challenging behavior, (b) factors that predict the occurrence of the challenging behavior, and (c) the possible function(s) of the challenging behavior. However, in some instances, prior to a more in-depth interview, an interventionist may want to interview those people familiar with the learner to determine their views regarding the function(s) of the challenging behavior. The interventionist may choose to use a tool such as the Motivation Assessment Scale (Durand, 1990). The hypotheses about the function of a challenging behavior formed during an interview can be tested during the next phase of the assessment procedure: direct observation.

Direct observation provides the interventionist with information regarding (a) the frequency and/or duration of the behavior, (b) the antecedents that may influence it, (c) the place/setting in which the behavior typically occurs, and (d) the consequences following the behavior. Additionally, direct observation allows the interventionist to compare information obtained from the interview with information obtained from direct observation, as well as to expand upon the antecedents and consequences that may influence the behavior. Often, the interview and direct observation give the interventionist enough information to generate and confirm a hypothesis about the function of the challenging behavior and, subsequently, to design an appropriate intervention. However, in some instances, the function of the challenging behavior still may be difficult to discern, and it thus may be necessary to conduct a series of controlled environmental manipulations.

Environmental manipulations involve altering particular antecedents or consequences that seem to be associated with challenging behavior and then observing how these changes influence the behavior of the learner. For example, consider a learner who engages in the challenging behavior of screaming. The interview and direct observation reveal that the learner typically screams during large group activities and that, when the learner screams, a paraprofessional takes the learner out of the classroom and walks around school hallways until he or she calms down. Given the preceding scenario, the learner's challenging behavior may serve the social function of either escaping (e.g., leaving the group activity) or getting attention (e.g., engaging in a one-to-one interaction with the paraprofessional). The ambiguity of the results of the interview and the direct observation make it necessary to

conduct a series of environmental manipulations. In the preceding example, the interventionist might arrange the environment during large group activities so that on some occasions the learner would receive one-to-one attention with the paraprofessional throughout the activity. However, on other occasions, the learner would not receive attention during the group activity. If the learner demonstrates challenging behavior regardless of the level of attention provided, the behavior probably is escape-motivated. Alternatively, if the learner engages in challenging behavior only when the paraprofessional does *not* provide him with attention, the behavior would appear to be attention-motivated. For a more comprehensive description of each of these assessment strategies, see O'Neill et al. (1990), Reichle and Johnston (1993), and Durand (1990).

It is important, then, to accurately determine the function of a learner's challenging behavior before designing and implementing an intervention. This can be accomplished through interviews, direct observations, and environmental manipulations. Only after the function of a challenging behavior has been determined should an intervention be designed to decrease such behavior. In addition to identifying the communicative function of a challenging behavior, the interventionist should ensure that new responses that are taught will be more efficient than that behavior.

ENSURING THE EFFICIENCY OF SOCIALLY ACCEPTABLE ALTERNATIVES TO CHALLENGING BEHAVIOR

A number of investigators (Horner & Day, 1991; Horner, Sprague, O'Brien, & Heathfield, 1990; Mace & Roberts, in press) discuss that when a learner has two or more available responses that serve the same function, the most efficient response will be chosen. This concept is important to consider when attempting to replace challenging behaviors with alternative responses. It implies that the alternative response (e.g., a communicative response) must be more efficient than the challenging behavior in order for the learner to choose it. Efficiency may be influenced by at least four variables: (a) rate of reinforcement, (b) quality of reinforcement, (c) response effort, and (d) immediacy of reinforcement.

Consider a learner who can choose to display challenging behavior (e.g., throwing objects) or to respond in a socially acceptable manner (e.g., verbally requesting assistance) when presented with a difficult task. Consider also that when this learner throws objects to request assistance, the teacher typically responds immediately (due to the potential danger of the situation). However, when the learner makes the socially acceptable verbal request for assistance, the teacher does not respond as quickly (because he or she is busy with another student or because he or she does not immediately hear the request). In this situation, throwing objects is more efficient (as defined by the previously discussed variables) than verbally requesting assistance. Therefore, the learner more likely would choose to throw objects than to demonstrate the communicative behavior. In summary, when a learner can choose between two or more responses, he or she probably will choose the response that results in the higher rate of reinforcement, higher quality of reinforcement, lower response effort, and/or lower latency of reinforcement. When designing interventions to decrease challenging behavior(s), therefore, the interventionist should ensure that the efficiency of the desired behavior is greater than the efficiency of the challenging behavior.

A variety of intervention strategies can be implemented to decrease challenging behaviors. The remainder of this article will (a) describe a number of such strategies that may be used to decrease challenging behaviors that are escape-motivated, (b) describe a number of strategies that may be used to decrease behaviors emitted to obtain desired objects/activities/attention, and (c) discuss some of the factors that may make the interventionist choose one intervention over another. The challenge to the interventionist is to design strategies that teach the learner to act in a socially responsible manner in each of the two preceding scenarios. Doing so requires that the learner acquire conditional uses of socially appropriate behaviors that compete successfully with a repertoire of challenging behavior. Acquiring a conditionally used social behavior requires that the learner be taught the range of environmental conditions that warrant a particular behavior, as well as the social appropriateness of that behavior. The technology of general case instruction (Albin & Horner, 1988) offers interventionists assistance in designing strategies that maximize the probability that new behaviors being taught come under the control of a range of relevant environmental conditions and not under the control of stimuli that should govern other responses.

For example, assume that a 7-year-old learner, Darrell, strikes others to escape offers of nonpreferred vegetables as well as of his daily-administered seizure-control medicine. Darrell's caregiver concludes that Darrell can avoid nonpreferred vegetables but that he must take his medication. Based on this information, the interventionist must initiate an intervention regimen that addresses both situations. In order to address the challenging behavior to escape nonpreferred vegetables, the interventionist might choose to teach Darrell to reject nonpreferred vegetables when they are offered. This intervention involves identifying the nonpreferred vegetables and prompting Darrell to emit a rejecting response (e.g., verbally say "no," shake head from side to side) when the identified vegetables are offered. Subsequently, after Darrell acquires the rejecting response, the interventionist can phase out the prompt. In designing an intervention to address the challenging behavior displayed to escape the administration of seizure medications, the interventionist might choose an intervention that provides Darrell with the opportunity to choose a preferred beverage into which the pill can be crushed prior to swallowing and select a preferred activity to engage in following the ingestion of the medication. In the context of this intervention, it would be necessary to establish the criteria for

earning the opportunity to select an activity. Initially, this criteria might entail swallowing the medicine without hitting others. However, over time, this criteria might gradually increase (e.g., swallowing the medication without making gagging noises *and* without hitting others). Additionally, it would be necessary for the interventionist to establish a procedure for situations in which Darrell does engage in challenging behavior (e.g., to deny Darrell the opportunity to choose a preferred activity).

In summary, general case instruction (Albin & Horner, 1988) involves (a) identifying all of the conditions that are both appropriate and inappropriate for emitting the target response, (b) selecting positive teaching examples (conditions under which the learner should emit the response), (c) selecting negative teaching examples (conditions under which the learner should refrain from emitting the response), (d) sequencing the teaching examples to maximize the efficiency of instruction, (e) teaching the examples, and (f) testing for generalization of the response by periodically conducting probes using conditions that are not used in the context of intervention. (For a more detailed discussion of general case instructional strategies, see Albin & Horner [1988].

Our experience suggests that often a particular social motivation for challenging behavior (e.g., avoiding undesired events) cannot be addressed by implementing a single instructional program. In many instances, several different instructional strategies may be required to successfully address the range of environmental circumstances resulting in challenging actions. Regardless of the number and diversity of interventions required, the interventionist's challenge remains constant. The communicative behavior being taught must be brought under the instructional control of relevant stimuli. The learner must be taught when to use the behavior being taught and when to refrain from using it (or when to show a different socially acceptable behavior).

The remainder of this article describes a sampling of intervention strategies that the interventionist may find helpful in replacing socially motivated challenging behavior with competing functional responses. Some of the intervention strategies address situations in which the learner's wishes cannot be immediately honored. In other instances, the learner's social motivation is recognized if he or she communicates this motivation in a socially acceptable manner.

INTERVENTIONS TO REDUCE ESCAPE-MOTIVATED CHALLENGING BEHAVIOR

A number of interventions may be appropriate for individuals who engage in escape-motivated challenging behaviors. When faced with the task of choosing one of these interventions, consider whether or not the learner can be allowed to escape from the object/activity precipitating the challenging behavior. For example, in some instances, a learner's desire to escape from an object/activity cannot be honored (e.g., taking medications). However, in others, such a desire can be honored (e.g., eating dessert). Although not intended to represent a comprehensive list, the following interventions represent plausible means of addressing each of these situations.

Interventions Addressing Situations in Which Escape Is Not Permissible

High probability requests. One intervention successful in decreasing a learner's escape-motivated challenging behavior that occurs in response to a teacher's/parent's instruction is high-probability requests (Davis, Brady, Williams, & Hamilton, 1992; Harchik & Putzier, 1990; Mace & Belfiore, 1990; Mace et al., 1988; Singer, Singer, & Horner, 1987). As illustrated in Appendix A, this strategy requires that the interventionist present three to five requests with which the learner typically will comply (high-probability requests) immediately prior to a request with which the learner typically does not comply (low-probability request). Because the learner's compliance to the high-probability requests creates a momentum, the likelihood that the learner will comply to the final task request increases. A number of plausible explanations clarify why high-probability request sequences are successful in increasing a learner's compliance. One explanation is that the series of high-probability requests may serve to interrupt the learner's anticipation of the onset of a low-probability request. Another explanation is that this strategy provides the learner with reinforcement for attempting to complete high-probability tasks immediately before he or she is asked to complete a low-probability task.

For example, consider implementing this procedure for a learner, Carol, who attempted to escape from social interactions. Specifically, Carol refused to engage in turn-taking activities with her peers (e.g., playing catch with a peer during gym). Based on this, the interventionist identified a number of requests for tasks that Carol typically would engage in (i.e., high-probability requests). Some of these were to point to the clock, give me "five," and pick up the ball. After making three of the high-probability task requests and providing social praise for each response, the interventionist delivered the final request (i.e., low-probability task request). In this situation, the low-probability task request was to "throw the ball to (*peer's name*)." The use of this high-probability request sequence greatly increased Carol's compliance to the final request, thus decreasing the frequency with which she attempted to escape the turn-taking activity.

Safety signal for escape-motivated challenging behavior. Another intervention that may be implemented when a learner's request to escape cannot be honored is a safety signal intervention (Carr & Durand, 1985; Carr & Newsom, 1985; Carr, Newsom, & Binkoff, 1976). A safety signal procedure provides the learner with a way of knowing that a nonpreferred activity is about to end. This advance knowledge regarding the length of time remaining in a nonpreferred activity may decrease the learner's anxiety about the activity. Subsequently, this may result in a decrease in the learner's challenging behavior. For example, consider a learner's behavior when he or she is sitting in a nonpre-

ferred class that is running past the designated release time. In this situation, the learner is likely to become increasingly more anxious about release from the class and subsequently begin to plot an escape. However, if the teacher says: "Just a second, and we'll be finished" (i.e., emits a safety signal), it is likely that the learner's anxiety will be lessened and that he or she will refrain from attempting to escape, waiting instead to be dismissed.

An escape-motivated safety signal is a cue (e.g., "We're almost finished") delivered by the interventionist that can indicate that an activity is about to be terminated contingent upon socially acceptable behaviors during the brief interval of time between the delivery of the safety signal and the end of the task. The purpose of an escape-associated safety signal is to teach the learner to continue participating in an activity for a short time without engaging in escape-motivated challenging behavior. Appendix B delineates the steps involved in implementing an intervention strategy using a safety signal. Consider further an illustration of how this program was used with a 4-year-old preschool learner named Jack.

A functional assessment revealed that Jack engaged in challenging behavior (hitting himself in the head with his fist) in order to escape group activities. His teacher identified music, snack, and group circle time as the situations from which Jack typically attempted to escape. After identifying these specific situations, it was necessary to determine the length of time that Jack would engage in these activities before demonstrating challenging behavior (e.g., to determine the critical time period). This was accomplished by starting a stopwatch when Jack began an activity and then stopping the stopwatch when Jack started to hit himself. After four observations of each activity, the interventionist determined that Jack remained in these activities from 40 seconds to 1 minute prior to engaging in challenging behavior. Based on this information, the interventionist identified the critical time period for participation, which consisted of the shortest amount of time that Jack would remain in an activity before engaging in challenging behavior. In Jack's case, the critical time period was 40 seconds. In addition to determining the critical time period, the interventionist also chose a safety signal. For Jack, the safety signal was the verbal cue "almost done." When Jack was engaged in one of the identified activities, the interventionist delivered the safety signal and released Jack from the activity prior to the elapse of the critical time period (40 seconds). Subsequently, as Jack performed the activity for the critical time period without screaming, the interventionist gradually increased the amount of time that passed before the delivery of the safety signal. As the intervention progressed, Jack remained in the identified activities for increasingly longer periods of time before being released. In this example, the safety signal could be described as noncontinuous; Jack was unable to independently monitor the amount of time remaining in the activity. However, in some instances, it may be beneficial to provide the learner with the ability to continuously monitor the amount of time remaining. For example, if Jack knew how to tell time, he might be provided with a stopwatch and told to work for a specific amount of time.

Preferred item as a distracter. In some situations, learners may engage in challenging behavior to escape from tasks that do not require the learner's full undivided attention (e.g., boarding the bus, waiting in line for lunch, and performing range of motion exercises). In these instances, it may be possible to call the learner's attention away from the nonpreferred activity by simultaneously presenting him or her with a preferred object/activity—in other words, by using a preferred item to distract. This intervention entails identifying a preferred item and providing it immediately before the learner is required to engage in the activity that typically results in challenging behavior. For example, consider Jim, a learner who engaged in escape-motivated challenging behavior at the end of the day when he was required to board the school bus. The interventionist who worked with Jim identified a hand-held electronic game as a preferred item. Immediately before Jim boarded the bus, the interventionist offered him the game, which served effectively to distract Jim from the nonpreferred activity of boarding and riding the school bus.

In summary, a number of interventions are appropriate for situations in which the learner cannot be allowed to escape from the task (high-probability requests, safety signal, and preferred item as a distracter). The second set of interventions designed to decrease a learner's escape-motivated challenging behavior are most appropriate for situations in which the learner can be allowed to escape from the task (e.g., rejecting, leave taking, requesting alternative activity, and requesting assistance).

Interventions Addressing Situations in Which Escape Is Permissible

Rejecting. One intervention that may be appropriate for situations in which the learner can be allowed to escape entails teaching a communicative rejecting response (Sigafoos & Reichle, 1991). A rejecting response provides the learner with a socially acceptable means of indicating that objects/activities are undesired at the time they are offered. Appendix C lists the procedures that might be used to implement a rejecting intervention. Establishing a rejecting utterance begins by identifying the learner's nonpreferred objects/activities. The nonpreferred objects/activities might include those that the learner never prefers (e.g., carrots) or those that the learner prefers but with which he or she tends to become satiated (e.g., a third helping of cheese and crackers). As illustrated in Appendix C, teaching a rejecting response involves prompting the learner to emit the response when the nonpreferred objects/activities are presented. If the response is verbal and the learner is imitative, the interventionist might initially model the correct response and say: "Tell me, 'no.' " After the learner acquires the response, the interventionist can phase out the prompt. One phasing out strategy often used involves the use of a time delay. In other words, the interventionist waits increasingly longer periods of time before prompting the response. If the rejecting response is graphic or gestural (e.g., pointing to a symbol representing "no" or shaking

head from side to side), the interventionist may choose to physically prompt the response and then gradually diminish the prompt and/or increase the time delay between the presentation of the nonpreferred items and the delivery of the prompt. In addition to creating situations in which the learner needs to emit a rejecting response, the interventionist also should create situations in which the learner does not need to do so. This will ensure that the learner is taught to discriminate between situations in which a rejecting response is necessary (e.g., when offered a nonpreferred item during dinner) and not necessary (e.g., when viewing a nonpreferred item in the cafeteria line). Additionally, the interventionist might implement a rejecting intervention concurrently with a safety signal intervention. In other words, the interventionist may implement a rejecting intervention in the context of some activities and a safety signal intervention in the context of others.

We have discussed the use of a rejecting response as an appropriate means for *avoiding* undesired objects/activities before they begin. In other situations a learner may wish to *escape* from objects/activities in which he or she currently is engaged. In these situations, establishing a leave-taking utterance might be a plausible alternative.

Leave-taking. Establishing a leave-taking utterance (Horner & Day, 1991) is another strategy that may be appropriate when the learner's request to escape an activity can be honored. An intervention strategy to establish a leave-taking utterance is similar in many respects to the strategy used to establish a reject utterance. One way to conceptualize the distinction between a reject and a leave-take is to view a leave-taking utterance as most efficient when the learner already is engaged in an activity (e.g., 15 minutes into an independent reading activity) and a reject utterance as most efficient when the activity has not yet begun (e.g., prior to the beginning of a nonpreferred activity). Appendix C delineates the procedure for teaching a learner a leave-taking response.

Consider, for example, a learner named Lynn who frequently engaged in escape-motivated challenging behavior when a task became boring (e.g., after coloring for an extended amount of time). When Lynn became bored with an activity, she typically would throw objects close to her. The interventionist decided to teach Lynn a more socially appropriate way to request leave of an activity. Following the procedures outlined in Appendix C, the interventionist identified activities that would be the target of intervention. For this intervention it was necessary to choose activities that were appropriate for the learner to leave contingent on her request as well as those that Lynn attempted to escape from after engaging in them for an extended amount of time. For Lynn, these activities included coloring, playing with Playdoh, and listening to audiotapes of favorite stories. After these situations had been identified, the interventionist observed Lynn for a number of days to discern the shortest amount of time that Lynn typically would engage in these activities before displaying challenging behaviors. The results revealed that she would remain in the activities for a minimum of 12 minutes before engaging in the escape-motivated challenging behavior (critical time period). Subsequently, during the identified activities, the interventionist prompted a leave-taking response immediately before the critical time period elapsed. For Lynn, this response entailed touching a black-and-white symbol representing "break." However, for other learners, the leave-taking might entail a gesture or verbal response. Over time, the prompt that was delivered by the interventionist to request leave of the activity was phased out.

Although discussed separately in the context of this article, implementing a leave-taking intervention does not exclude the concurrent use of other interventions. For example, consider a learner who demonstrates challenging behavior in order to escape from homework after 3 minutes. In this situation, it may be efficient to use a safety signal intervention (discussed previously) as well as to teach the learner to emit a leave-taking response (e.g., to touch a symbol representing "finished") in order to communicate a desire to leave the activity. Doing this will (a) provide the learner with a communicative alternative to the challenging behavior and (b) result in a gradual increase in the amount of time that the learner remains engaged in the task.

In some instances it may be more efficient to teach the learner a more explicit form of leave-taking. For example, consider a learner who wants to escape from an activity in which he or she currently is engaged (e.g., math homework) to do some other more highly preferred activity (e.g., going outside for recess or completing science homework). In these situations, a request alternative activity intervention may be most efficacious because the learner can escape from a nonpreferred activity as well as request an alternative.

Request alternative activity. A request alternative activity intervention is similar in many respects to the leave-taking intervention because they both permit escape from an activity in which the learner is participating. However, rather than teaching the learner to request leave of a nonpreferred situation, the interventionist teaches the learner to request an alternative activity (Wacker et al., 1990). Consider, for example, Ann, who frequently engaged in escape-motivated challenging behavior after participating in an activity for a period of time (e.g., 10 minutes). Ann's escape-motivated challenging behavior consisted of screaming and/or crying. Her interventionist decided to teach Ann a more socially appropriate means of requesting an alternative activity. In order to accomplish this, the interventionist identified activities that Ann typically satiated on and alternative activities that were preferred by her. For this intervention it was necessary to identify preferred alternative activities appropriate for Ann to request and then to arrange these alternatives to increase the probability that she would realize that they were available if she requested them. The alternative activities included playing with a preferred toy and engaging in a social interaction with a peer or teacher. The activities that Ann often enjoyed but quickly lost interest in included coloring, swinging, and looking at books. After these activities had been identified, the interventionist observed Ann to determine the shortest amount of time that she typically would engage

in these activities before becoming satiated and demonstrating challenging behaviors. Observation revealed that Ann remained in the identified activities for a minimum of 8 minutes before engaging in the escape-motivated challenging behavior (critical time period). Subsequently, during the identified activities, the interventionist prompted Ann to request an alternative activity (e.g., to play with a preferred toy or to engage in a social interaction with a peer or teacher) immediately before the critical time period elapsed. For Ann, the requesting alternative activity response entailed touching a black-and-white symbol representing the desired alternative activity. Over time, the prompt delivered by the interventionist to escape the current activity and to request the alternative activity was phased out.

In addition to teaching this intervention independently from others, the request alternative activity also can be implemented concurrently with a leave-taking intervention. In other words, a learner can be taught to use a leave-taking response (e.g., to escape from an activity that is already in progress) with a request alternative activity response. Another intervention that may be appropriate for situations in which escape is permissible is a requesting assistance intervention.

Requesting assistance. In some instances, a learner may emit escape-motivated challenging behavior because of the difficulty of the task or the difficulty of one particular component of the task. If this is the case, then a requesting assistance intervention may be the most appropriate (Carr & Durand, 1985; Horner & Day, 1991; Horner, Sprague, O'Brien, & Heathfield, 1990). A requesting assistance response provides the learner with a socially acceptable means of indicating that, in order to remain actively engaged in a specific activity, he or she needs assistance. To implement this, the interventionist identifies activities with which the learner needs assistance to successfully complete them. These activities already may be a part of the learner's daily routine (e.g., fastening a coat), or they may be "created" by the interventionist (e.g., deliberately screwing the lid of a paint jar on too tight for the learner to loosen). In addition to identifying situations in which the learner needs to request assistance, the interventionist also should identify situations in which the learner does not need to request it. Doing this will ensure that the learner discriminates between situations in which assistance should and should not be obtained.

Teaching a request assistance response involves prompting the learner to emit the response at predictable steps of a task that are too difficult for the learner to execute independently. These steps can be identified during baseline by observing the learner as he or she engages in the identified activity and recording the point(s) at which he or she has difficulty. As discussed previously, if the response is verbal and the learner is imitative, the interventionist initially might model the correct response and say: "Tell me 'help.'" After the learner acquires the response, the interventionist can fade the prompt by using a time-delay prompting procedure. In other words, the interventionist can wait increasingly longer periods of time before prompting the response. If the request assistance response is gestural or graphic (e.g., sign "help" or pointing to symbol representing "help"), the interventionist may choose to physically prompt the response and then gradually diminish the prompt and/or increase the time delay between the presentation of the nonpreferred items and the delivery of the prompt. In addition to decreasing the occurrence of challenging behavior by teaching the learner a communicative request assistance response, frequent assistance is likely to result in mastery of the skill. Thus, over time the learner's need to request assistance should decrease.

In addition to interventions that are designed to lessen escape-motivated challenging behavior, a number of interventions are designed to decrease challenging behavior engaged in to obtain access to desired objects, activities, or attention.

INTERVENTIONS TO DECELERATE CHALLENGING BEHAVIOR THAT IS DISPLAYED TO OBTAIN ACCESS TO DESIRED OBJECTS, ACTIVITIES, OR ATTENTION

A number of interventions may be appropriate for individuals who engage in challenging behavior to obtain something desired, such as items, activities, or attention. Some of these interventions are most appropriate when the learner can be allowed immediate access to the thing desired (e.g., requesting or independent retrieval). Alternatively, other interventions may be most appropriate when the learner cannot obtain immediate access to whatever is desired (e.g., safety signal). As was the case with the escape-motivated interventions discussed previously, the following discussion is not intended to be an exhaustive delineation of intervention procedures, but a plausible means of addressing each of these situations.

Interventions Addressing Situations in Which Immediate Access Is Permissible

Requesting. An intervention implemented to decrease access-motivated challenging behavior when immediate access is permissible involves teaching a requesting response (Carr & Durand, 1985; Wacker et al., 1990). A requesting response, outlined in Appendix D, is a communicative behavior displayed by a learner in order to obtain objects, activities, or attention. Consider a learner named Sam, who frequently engaged in challenging behavior to get desired objects. When Sam wanted something, he would kick others. The interventionist decided to teach Sam a more socially appropriate way to request objects. Following the procedures outlined in Appendix D, the interventionist identified objects that would be the target of intervention. For Sam, the objects included preferred snack items and toys. Then, the interventionist presented the desired objects and prompted a request response from Sam. For Sam, the request response entailed touching a graphic symbol representing the desired

object. However, for other learners, the request might entail a gestural or verbal response. Over time, the prompt that was delivered by the interventionist to request desired objects was eliminated.

In addition to deciding on the mode of the learner's requesting response (e.g., graphic, gestural, or verbal), the interventionist also must decide on the use of general or explicit vocabulary to represent the objects/activities being requested. With some learners, it may be most efficient to teach the use of a general symbol to request a wide variety of items or events (e.g., to touch a "want" symbol). This is particularly advantageous for a learner with a limited communicative repertoire because it provides him or her with the ability to request a number of items through only one response. However, a disadvantage to the use of general vocabulary is that it may be difficult for a listener to understand which of many potential items are being requested. If this is the case, then more explicit vocabulary may be warranted.

The use of a requesting response is most appropriate when a learner requires the mediation of another person for a desired object or activity (e.g., when a desired toy is out of reach). In other situations, a learner may be able to get what he or she desires independently, in which case, a different intervention can be considered.

Independently retrieve desired items. In some instances, it may be efficacious to teach a learner to independently obtain desired objects or activities (e.g., readily accessible art materials). Additionally, in some situations it may be efficacious to use a requesting intervention concurrently with an independent retrieval intervention. In other words, both interventions could be used simultaneously so that the learner is taught to distinguish between situations in which he or she can independently obtain something desired and those in which he or she must request it. Consider the following example of a 10-year-old named Kevin. A functional assessment revealed that Kevin engaged in challenging behavior (screaming) if his requests for desired items (e.g., paper or pencils) were not immediately honored. His teacher specified journal-writing time as the situation in which Kevin typically requested paper and pencils. Additionally, the teacher stated that these objects were easily accessible. In order to implement the independent retrieval intervention, the teacher identified items that would be the target of intervention (paper and pencils) and prompted Kevin to get them. Over time, the prompt delivered by the interventionist to get objects was eliminated.

Intervention When Immediate Access Is Not Available

Safety signal for access-motivated challenging behavior. In some situations, it may not be feasible to allow a learner immediate access to the items, activities, or attention that he or she is requesting. Consider a learner who requests to play outside when it is not time for recess. In situations such as this, the use of a safety signal for access-motivated challenging behavior (Shriner, Reichle, Carver, & Merth, 1992) may be warranted. A safety signal for access-motivated challenging behavior is a cue (e.g., "just a minute") delivered by the interventionist that indicates that a request is about to be honored contingent on socially acceptable behaviors during the brief interval of time between the delivery of the safety signal and the provision of the desired item. This safety signal teaches a learner to wait for a short time without engaging in challenging behavior. Appendix B presents the steps involved in implementing a safety signal intervention strategy for challenging behavior displayed to obtain something desired.

Consider an intervention designed for a 5-year-old preschooler named Stacy. A functional assessment revealed that Stacy engaged in challenging behavior (hitting) if her requests for desired items were not honored immediately. Her teacher identified group circle time and snack time as the situations in which Stacy typically hit others to get what she wanted. After identifying these specific situations, it was necessary to determine the length of time that Stacy waited before engaging in challenging behavior (critical time period). This was achieved by starting a stopwatch when Stacy requested something and then stopping the stopwatch when Stacy demonstrated challenging behavior. The time periods that Stacy waited ranged from 10 to 30 seconds, with a critical time period (the shortest amount of time that Stacy would wait before engaging in challenging behavior) of 10 seconds. The interventionist then chose a safety signal: "Just a minute." When Stacy made the initial request, the interventionist delivered the safety signal statement and provided access to the desired object immediately prior to the elapse of the critical time period (e.g., 10 seconds). When Stacy consistently waited during the critical time period without engaging in challenging behavior, the interventionist gradually increased the amount of time that elapsed between delivering the safety signal and providing the desired object. Thus, Stacy waited for increasingly longer periods of time before obtaining what she wanted. Because Stacy had socially acceptable requesting skills prior to the safety signal intervention, it was not necessary to work on her manner of communication. However, some learners may not have a socially acceptable way of requesting. If this is the case, the interventionist may choose to teach him or her a requesting response (using the procedures discussed previously) concurrent with safety signal intervention.

CONCLUSION

Challenging behaviors by students may serve a variety of social and communicative functions. These functions include (a) avoiding or escaping nonpreferred objects and activities, and (b) getting desired objects, activities, and attention. Prior to selecting an intervention procedure(s) to decrease challenging behavior, it is necessary to conduct assessment to determine the function of it. This assessment will help the interventionist to determine the function of the challenging behavior as well as to provide information on socially acceptable alternatives to it. Additionally, the information obtained during the assessment will help the interventionist to determine whether one intervention might be more advantageous than another.

Intervention technology focuses on replacing socially motivated challenging behavior with functional alternatives. A major category of functional alternatives involves establishing a repertoire of efficient communicative functions. Although a number of empirically validated procedures are beginning to emerge, few speech-language pathologists and educators have had significant experience in implementing them (Reichle & McEvoy, 1991). Usually, establishing a functional alternative to challenging behavior gives the learner a socially acceptable strategy that corresponds to his or her motivation for displaying this behavior. Although it is empowering to provide a person who engages in challenging behavior with the opportunity to make choices, in some situations his or her choice cannot always be honored. In these situations, it may be necessary to develop intervention strategies that teach learner self-regulatory skills that enable him or her to successfully negotiate problem situations, even though the outcome may not directly correspond with his or her original motivation. It is vitally important that in the future applied researchers work closely with service delivery systems to develop a continuum of pre-service and in-service activities that prepare educators and professionals in related disciplines to design and implement assessment/intervention procedures in a transdisciplinary fashion. These collaborative systemic approaches will provide the basis for continuing development and validation of intervention procedures that meet rigorous standards of social validity.

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APPENDIX A

HIGH-PROBABILITY REQUEST SEQUENCE TO DECREASE ESCAPE-MOTIVATED CHALLENGING BEHAVIOR

Step 1: Identify high-probability task requests. Identify a set of requests with which the learner typically will comply. High-probability requests have been defined as those with which the learner complies at least 70% of the time.

Step 2: Identify low-probability task requests. Identify a set of task requests with which the learner often will not comply.Low-probability task requests have been defined as those with which the learner complies less than 40% of the time.

Step 3: Implement the high-probability request sequence. Deliver three to four of the high-probability task requests, and provide verbal praise for the learner's compliance with each. Immediately after the delivery of the high-probability task requests, deliver the low-probability task request.

APPENDIX B

SAFETY SIGNAL INTERVENTION TO DECREASE ESCAPE-MOTIVATED CHALLENGING BEHAVIOR AND ACCESS-MOTIVATED CHALLENGING BEHAVIOR

Safety signal for escape-motivated behaviors

Step 1: Identify situations. Identify situations in which the learner seems to be motivated to escape after a brief period of positive engagement.

Step 2: Determine the critical time period. For each identified situation, determine the average amount of time that the learner will participate in the nonpreferred activity before he or she engages in challenging behavior.

Step 3: Choose a safety signal. Choose an appropriate safety signal to indicate that the activity is almost over (e.g., say "We are almost done").

Step 4: Deliver the safety signal. Once the learner participates in the activity, deliver the safety signal immediately prior to the elapse of the critical time period (identified in Step 2).

Step 5: Release the learner from the activity. Immediately after the safety signal is delivered, release the learner from the activity (assuming that he or she is not engaging in challenging behavior).

Step 6: Gradually increase the time spent on task. When the learner consistently participates in the activity for the critical time period without displaying challenging behavior, gradually increase the time spent on task.

Safety signal for access-motivated behaviors

Step 1: Identify situations. Identify situations in which the learner displays challenging behavior if his or her requests to obtain objects/activities/attention are not honored.

Step 2: Determine the critical time period. For each identified situation, determine the average amount of time that the learner will wait before he or she engages in challenging behavior.

Step 3: Choose a safety signal. Choose an appropriate safety signal to indicate that the learner's request is about to be honored (e.g., "Just a second").

Step 4: Deliver the safety signal. Deliver the safety signal immediately after the learner makes the request.

Step 5: Allow access to the desired object/activity/attention. Following the delivery of the safety signal, allow the critical time period to elapse prior to allowing the learner to access the desired object/activity/attention (assuming that the learner is not engaging in challenging behavior).

Step 6: Gradually increase the time spent waiting. When the learner consistently waits for the critical time period without demonstrating challenging behavior, gradually increase the amount of time that the learner waits before obtaining the requested object/activity/attention.

APPENDIX C

A REJECTING INTERVENTION AND A LEAVE-TAKING INTERVENTION TO DECREASE ESCAPE-MOTIVATED CHALLENGING BEHAVIOR

Rejecting

Step 1: Identify nonpreferred objects/activities. Interviews and direct observation may be helpful in identifying nonpreferred objects/activities. Additionally, the interventionist may present potential items to the learner in order to determine if they are nonpreferred.

Step 2: Present the nonpreferred objects/activities. Offer the nonpreferred objects/activities to the learner.

Step 3: Prompt the rejecting response. The rejecting response may be prompted verbally or gesturally, depending on the needs of the learner, as well as on the mode of the response (e.g., gestural, verbal, graphic). Be sure to prompt the response prior to the challenging behavior.

Step 4: Fade the prompt for the rejecting response. Over time, the interventionist's prompt for the learner to emit the rejecting response should be phased out.

Leave-Taking

Step 1: Identify activities. Identify activities that the learner will probably want to terminate after a brief period of positive engagement.

Step 2: Determine the shortest amount of time that the learner will engage in the activities. Observe the learner engaging in the activities on multiple occasions. Identify the shortest amount of time that the learner will engage in the activities before demonstrating challenging behavior (critical time period).

Step 3: Prompt the leave-taking response. Immediately prior to the elapse of the critical time period, prompt the learner to emit the leave-taking response.

Step 4: Release the learner from the activity. After the leave-taking response, allow the learner to escape the activity.

Step 5: Gradually phase out the prompt. Over time, the interventionist's prompt for the learner to emit the leave-taking response should be phased out.

APPENDIX D

A REQUESTING INTERVENTION TO DECREASE ACCESS-MOTIVATED CHALLENGING BEHAVIOR

Step 1: Identify preferred objects/activities. Interviews and direct observation may be helpful in identifying preferred objects/activities. Additionally, the interventionist may present potential items to the learner to determine if they are preferred.

Step 2: Arrange the environment to encourage requesting response. Arrange the environment in such a way that it increases the probability that the learner will request the desired objects/activities.

Step 3: Prompt the requesting response. The requesting response may be prompted verbally and/or gesturally, depending on the needs of the learner as well as on the mode of the response (e.g., gestural, verbal, graphic).

Step 4: Fade the prompt for the requesting response. Over time, the interventionist's prompt for the learner to emit the requesting response should be phased out.