When the Toddler Takes Over:

Changing Challenging Routines Into Conduits for Communication

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The applicability of teaching communication replacement behavior for challenging behavior has not been fully recognized by early interventionists working with young children in their natural environments. This article describes how challenging routines for families can be converted into opportunities to teach communication skills and increase participation in family activities. A case description is presented to illustrate how routines-based intervention can extend the process and procedures of functional assessment and positive behavior support interventions to ongoing early intervention that facilitates increasingly more sophisticated communication skills. We demonstrate how communication skills can be targeted in an individualized fashion first as a replacement behavior serving the same function as the challenging behavior for the child and second to correspond to the interests and concerns of the family and child. This approach offers flexibility in applying a variety of effective intervention strategies within a family-guided process.

Children with apparent social, language, and behavior problems are likely candidates for Individuals with Disabilities Education Act (IDEA) Part C early intervention services. It is not necessary for children to receive a diagnosis such as autism spectrum disorder (ASD) prior to intervention, as early intervention has been effective for many children with developmental delays that result in challenging behaviors (Dawson & Osterling, 1997; Kaiser, Hancock, & Neitfeld, 2000; McGee, Morrier, & Daly, 1999). However, when families' daily routines are dictated by or modified to accommodate difficulties and to avoid potential embarrassment associated with toddlers' problem behaviors, early interventionists should be prepared to act. The following case study illustrates such a problem.

Meet Kelly

Kelly greets the new early interventionist (EI) with a high-pitched squeal; runs through the kitchen, around the dining room, and back to the door; and tries to climb up Mom's leg while continuing her loud yell. Kelly's mom explains that it is breakfast time and it is imperative to feed Kelly without further interruption or else she will refuse to eat and will throw tantrums all day. The EI, expecting to go to Kelly's high chair or the dining room table, is surprised to find Mom serving Kelly toast squares and cheese chunks on a paper towel while sitting in front of the refrigerator on the floor. Mom offers her some milk from a blue cup, and Kelly throws herself backwards, hitting her head on the floor. She cries, kicks, and rolls on the floor. Mom quietly offers her an identical cup with orange juice and explains to the EI that Kelly likes juice, but her physician thought she needed more milk so she tries to offer it with the hope that Kelly will drink some before she realizes that it is not what she wants. Kelly drinks some juice, eats her toast, and then waits. Mom feeds her a piece of cheese and explains that Kelly does not seem to like the way certain foods, including cheese, feel when she touches them, but she will eat them if Mom feeds her. Kelly shows Mom she is done by spitting the last bit of cheese on the floor. She catapults into the family room, where Mom helps her turn on her favorite video. Mom explains that Kelly enjoys watching videos and will walk around the living room watching them for the rest of the morning, stopping only to watch the parts with music and dancing. In fact, Dad copied 2 hours of her favorite videos with music onto a long tape, giving Mom the time she needs to complete her housekeeping chores without interruptions from Kelly's demanding squeals.

Once Kelly is settled, Mom returns to the kitchen and leans against the kitchen sink to finish her breakfast. When asked by the EI to describe other mealtimes, Mom explains that lunch is a duplication of breakfast and that the family also eats dinner in the kitchen because Kelly likes it. Mom and Dad stand and older brother Kevin joins Kelly on the floor, allowing them to have a family meal in the evenings when everyone is home. On weekends, when Kevin can stay up later, they may wait to have their meal until after Kelly goes to bed so they can sit in the dining room and relax.

When asked to identify times during the day that are challenging for the family, Kelly's mom does not specifically mention mealtime. Although the scenario described may not reflect the typical family meal, the family has created a context that is working for them with Kelly. Mom is more concerned about the times during the day when Kelly does nothing but make noises or wander

around. She reports that Kelly does not play with toys or with Kevin when he comes home from school. After further consideration, she says the family would like to be able to include Kelly in more activities, such as meals and evening relaxation, but it is hard because they have to "follow her rules."

During the functional assessment process, the family members identify juice, toast, music, and dancing alone or with Kevin as Kelly's preferred foods and activities and say that they use them to coax her good behavior. Mom states that times when Kelly needs to communicate with someone are likely to be a challenge because she does not use any words; she only squeals, spits, and throws herself on the floor when angry. Consequently, the family tries to avoid situations in which Kelly will become frustrated. To the surprise of the family, the EI observes that Kelly uses different vocalizations to indicate pleasure and to gain attention. She increases the volume of her squeal as her level of frustration increases. She occasionally reaches for an object as a request and looks at an object to indicate her preference when given a choice. However, these communication attempts are rarely noticed, and Kelly does not have any strategies to clarify her initiations beyond her screams and tantrums.

Initiating the Change Process

Communication intervention begins with the family identifying what Kelly's most challenging behaviors are for them, when they are and are not likely to occur, what the family does to prevent or to respond to the behaviors, and how Kelly responds to their interactions. Although the questions and observations that are part of the functional assessment process vary among children, describing the challenging behavior is the first step of the problem-solving process (Dunlap & Fox, 1999; Lucyshyn, Kayser, Irvin, & Blumberg, 2002; Schwartz, Boulware, McBride, & Sandall, 2001). These descriptions are used to develop hypotheses to explain the function of the behavior. These functions include gaining attention, indicating pain or frustration, avoiding a nonpreferred activity or event, and gaining sensory input. Each hypothesis is examined to identify communication replacement behavior(s) and the most appropriate intervention strategies for the development of a support plan for that child and family (Fox, Benito, & Dunlap, 2002; Wickstrom-Kane & Goldstein, 1999).

Intervention approaches to enhance social communication and language vary greatly, and specific approaches advocated may appear diametrically opposed. EIs trained to work with children with communication delays and challenging behaviors are expected to be knowledgeable about and competent in the implementation of many of the various intervention approaches; however, family members and early childcare and education personnel are not (Domingue, Cutler, & McTarnaghan, 2000). It becomes the responsibility of the EI to describe the possibilities, share examples of the evidence supporting various strategies, demonstrate implementation, and discuss with families how strategies might be implemented within their routines, activities, and environments. To illustrate some available options to the family, it may be useful to characterize the active ingredients of treatment approaches along a continuum from traditional discrete trial approaches to more contemporary behavioral approaches that use naturalistic language teaching techniques to developmentally oriented approaches (Anderson & Romanczyk, 1999; Prizant & Rubin, 1999; Prizant & Wetherby, 1998). Explanations need to be in everyday, nontechnical language; include realistic illustrations and demonstrations; and specify how approaches are likely to affect the family. This step is fundamental to the development of a contextual fit with the family's values, strengths, available resources, adaptability, and social supports. Although the technical soundness of the intervention is important, the contextual fit is essential for the family's acceptance and successful implementation of the approach (Horner, Albin, Sprague, & Todd, 2000). Without the family's commitment, the intensity of the service delivery is reduced to the one or two home visits per week traditional to Part C early intervention services, which greatly reduces the prospect for children's acquisition of communication skills.

EIs have the opportunity (and thus the responsibility) to individualize the communication interventions to match the needs of children and their families within their daily routines and environments. Choosing the approach requires a careful examination of the challenging behaviors and their functions, the outcomes to achieve, the child and family characteristics and priorities, the knowledge and skill of caregivers, the environments for intervention, and the consistency and coordination of the team. There is now a large body of empirical support for more contemporary behavioral approaches using naturalistic teaching strategies that demonstrate efficacy for teaching not only speech and language skills but also social communication. Naturalistic behavioral strategies include natural language paradigm (R. Koegel, O'Dell, & Koegel, 1987), incidental teaching (Hart, 1985; McGee, Krantz, & McClannahan, 1985; McGee, Morrier, & Daly, 1999), time-delay and milieu intervention (Charlop, Schreibman, & Thibodeau, 1985; Charlop & Trasowech, 1991; Hwang & Hughes, 2000; Kaiser, 1993), and pivotal response training (L. Koegel, 1995; R. Koegel, Camarata, Koegel, Ben-Tall, & Smith, 1998). These approaches use systematic teaching trials that have the following common active ingredients that increase their utility for embedding intervention within daily routines: They are initiated by the child and focused on the child's interest, are interspersed within and embedded throughout the child's daily activities and in various natural settings, and use natural reinforcers that correspond to what the child is trying to communicate. There are only a few empirical studies, all using single-subject designs, that have compared traditional discrete trial with naturalistic behavioral ap-

proaches. These studies have reported that naturalistic approaches are more effective at facilitating generalization of language gains to natural contexts (R. Koegel et al., 1998; McGee et al., 1985).

Numerous intervention approaches based on a developmental framework are published in the literature (e.g., Greenspan & Wieder, 1997; Klinger & Dawson, 1992; Prizant & Wetherby, 1998; Wetherby & Prizant, 1999). A common feature of developmental approaches is that they are child directed. The environment is arranged to provide opportunities for communication, the child initiates the interaction or teaching episode, and the family member follows the child's lead by being responsive to the child's intentions and imitating or expanding on the child's behavior. Although the empirical support for developmental approaches is more limited than for behavioral approaches, empirical support for using a developmental approach has been provided by several treatment studies (Hwang & Hughes, 2000; Lewy & Dawson, 1992; Rogers & DiLalla, 1991; Rogers & Lewis, 1989) as well as many case studies (see Greenspan & Wieder, 1997, for a review). Furthermore, developmental approaches share many common active ingredients with contemporary naturalistic behavioral approaches and are compatible along most dimensions (Hepting & Goldstein, 1996; Prizant & Wetherby, 1998). For example, the use of environmental arrangements to increase communication opportunities is a hallmark of an effective positive behavior support plan (Boulware, Schwartz, & McBride, 1999). Multicomponent and coordinated intervention plans developed and implemented across providers and disciplines and guided by the family's decisions provide effective means of supporting families' efforts to enhance their children's learning.

Implementing Communication Interventions in Routines

Meals are a problematic routine for Kelly and her family. Kelly needs functional communication skills that will give her some control of her environment. These conventional communication skills will need to be at least as effective and efficient as throwing herself back on the floor or spitting out food to ensure that she will use her new skills. Our hypothesis is that Kelly throws herself back to avoid drinking milk (which she doesn't like) and to get orange juice (which she does like). A first step in the process is to teach Kelly to make choices between milk and juice by offering her both drinks in her favorite cups, asking her to choose with the verbal prompt, "What do you want to drink, Kelly?" Kelly gets her drink (probably the juice), the exact outcome she desires, and she receives social reinforcement from Mom. Choosing between two objects is a functional skill that results in meaningful outcomes in many routines and settings. For example, Kelly can use appropriate choice-making skills to identify the video she wants to watch, the doll to take to bed, and the swing outside to share with Kevin. Each successful opportunity increases the likelihood that she will continue to make requests using her gestures and gaze in both preferred and problematic routines. Kelly's conventional forms of communication, a reach and a gaze to request, are easy for the family to respond to and even more expeditious for her than a tantrum. Not only does she learn to communicate using replacement behavior within the routine that is problematic, she also begins to generalize use to other routines such as dressing, outdoor play, bedtime, getting into the car seat, feeding the pets, reading stories, and even watching videos with Grandma.

This case description illustrates the potential for embedding effective early intervention into families' everyday routines. The literature includes a number of descriptions of effective embedded intervention approaches, for example, embedded learning opportunities (Horn, Lieber, Sandall, & Schwartz, 2001), activity-based intervention (Bricker & Cripe, 1992; Bricker, Pretti-Frontczak, & McComas, 1998), and enhanced milieu therapy (Kaiser, Hancock, & Neitfeld, 2000). We prefer to call the intervention approach described *routines-based intervention* (RBI), not to confuse matters or to be different but to provide an easy-to-understand term for families. Family members are familiar with "daily routines," the many activities that occur repeatedly within their day and across the various settings where their child learns, socializes, and plays. Although few families with toddlers who have challenging behaviors would describe any day as "normal," they can identify caregiving, play, and community activities that either occur with the cooperation of their child or are challenging. A further justification for implementing this RBI approach is that it is consistent with our obligation to serve children with special needs in natural environments, according to federal IDEA guidelines (Walsh, Rous, & Lutzer, 2000). Moreover, we believe that RBI extends the process and procedures of functional assessment and positive behavior support interventions (Dunlap & Fox, 1999) to ongoing early intervention that facilitates increasingly more sophisticated communication skills. Once communication replacement behaviors have been established and challenging behaviors decreased, the implementation of the intervention within a variety of daily routines continues with the objective of developing new outcomes and skills.

We believe that the implementation of RBI should be conceptualized as a family-guided process. The selection of daily routines is necessarily dictated by the family. One cannot predetermine what routines or activities are good candidates for embedded interventions. Families naturally differ in their daily routines. Even if there are commonalities in routines across families, they may be perceived differently in terms of structure, expectations, importance, time allotments, and so forth. Consequently, the routines selected for embedding intervention are guided by family priorities and preferences. For young children with ASD or with challenging behaviors, routines that families have come to avoid or to alter, sometimes in strange ways, are likely to receive high priority for implementing embedded intervention. A major advantage of RBI is that it provides a framework for embedding treatment into the routines in which it is needed most, as well as those that are the most

motivating and preferred by the children and their families.

Communication skills should be individualized (a) as a replacement behavior serving the same function as the challenging behavior for the child and (b) for the interests and concerns of the family and child. In this way, intervention can be linked directly to assessment, as functional and meaningful target behaviors are embedded into daily routines. When households find daily routines and activities disrupted because of toddler behavior, a traditional goal would be to modify the toddler's behavior. For Kelly, that might consist of creating a goal to decrease her screaming or throwing herself on the floor, perhaps by using a time-out procedure. This goal focuses on *what* Kelly is doing but not *why* or, more specifically, on the *form* but not the *function*. The intervention Kelly's mom was using (and it was working some of the time) was to prevent any frustration and let Kelly leave meals when she was ready. Punishing screaming and tantrums may still allow Kelly to avoid the task (drinking or eating) and not teach Kelly any new or more appropriate skills that would alleviate continued disruptions to family life. Early interventionists need to try to break the cycle, which can lead to idiosyncratic routines and unhealthy social relationships. The literature on treatments for challenging behavior has demonstrated remarkable results by interrupting this negative cycle while substituting a positive alternative. Indeed, even with a child who is not yet talking, one should seek ways to teach the child appropriate ways to communicate needs and wants. The applicability of teaching communication replacement behavior for challenging behavior has not been fully recognized by EIs working with young children in their natural environments.

Daily routines and activities serve as flexible and useful contexts for embedding instruction for several reasons. Daily routines are by their nature repeated on a regular basis. Consequently, one can count on available teaching opportunities with repetition available to reinforce learning. Most routines inherently consist of a predictable sequence, and additional consistency can be imposed to de-

marcate beginnings and endings as well as intermediate steps more clearly. Thus, the child learns to anticipate and predict actions that are meaningful and outcome oriented. Typically, children and caregivers are motivated to have the routine reach a reinforcing conclusion. Predictability of actions can be used to embed task demands. For example, a pause before an anticipated step in the routine works much like a time-delay procedure to provide a stimulus for communicating what should be happening. Task demands can become increasingly more sophisticated as the child's skills increase and the caregiver prompts the child to provide longer or clearer communicative responses. Also, it may be possible to target multiple outcomes or skills within a single routine. This important feature of routines as an instructional framework allows one to adjust the treatment objectives as the child and caregiver develop their skills while maintaining the continuity of the routine.

RBI has a number of practical advantages. Because the routines are already common occurrences in parents' lives, they do not have to allocate additional time to teach identified objectives during their day (Woods Cripe & Venn, 1997). They do not have to invest in additional teaching supplies because common everyday materials are the basis for routines and activities. It is important to recognize that routines are not, and should not be, bound to specific times, places, materials, people, and contexts. The natural variation in routines, such as eating different foods for breakfast and watching different television programs, contributes to generalization programming. Stokes and Baer (1977) might conceive of this as "loose training." Variations in the stimulus conditions and exact response requirements are helpful for maximizing the likelihood of generalization. This may not always be sufficient, but the use of natural routines should help avoid the common problem of having to program generalization from a training situation to everyday life situations.

There are a number of potential pitfalls that early interventionists should strive to avoid in this approach. First, routines can become so predictable that they are more

like rituals. Too much consistency in time, place, and materials is likely to impede generalization and maintenance. Second, the EI should help the caregiver avoid complacency around the implementation of RBI. Once the routine is no longer a challenge and is flowing smoothly, the caregiver may forget to continue to expect more from his or her child. On the other hand, if expectations are raised too quickly or inconsistently, challenging behavior may be more likely to recur. Complacency might be evident if the caregiver has learned a number of strategies to facilitate elaborated communication and social behavior, but limit use of those strategies to the particular context for which it was originally identified. Third, it is important to remember that not all routines are created equal. It is essential that the child is actively engaged in the routine. If the child is highly motivated to participate in the routine, teaching opportunities may abound. However, some routines may be brief or infrequent, albeit highly motivating. If the teaching opportunities are too dispersed, the speed of skill acquisition will suffer.

Supporting Families in Early Intervention

Parents may be included in intervention programs in a variety of ways. Traditionally, they have been asked to deliver predefined child interventions that they learn through participation in parent training classes or through observations of their children in classrooms or clinics (National Research Council, 2001). However, individualization of services and supports based on the priorities and interests of the family are becoming recognized as essential, especially for families dealing with behavioral challenges and emotional stress (Dunlap & Fox, 1999). For families of children with ASD, competence and confidence in their ability to guide the team and make informed decisions are likely to be affected by the age of identification and the degree of behavioral concerns. Both formal and informal supports may be required to provide families with information, guidance,

and assistance in gaining access to services, respite, or financial resources (Turnbull & Ruef, 1996).

Routines support interaction between the child and the caregiver by providing clear roles and responsibilities that can be learned to increase engagement, communication, and social interaction, the core deficits associated with ASD (Bruner, 1975). Examples abound in the literature for preschool program scripts and activities (e.g., Goldstein & Kaczmarek, 1992; McGee, Morrier, & Daly, 1999; Strain, McGee, & Kohler, 2001). For caregiver-implemented interventions with younger children, however, the procedures should be embedded into the preferred routines identified by the family. For example, Kelly's getting a drink is a routine that provides a framework for embedding meaningful targets such as requesting help with vocalizations, gestures, or words; making choices between milk or juice; showing an empty cup to request more drink; smiling and looking toward the communication partner as a social exchange; or placing the empty cup on the kitchen counter to indicate satisfaction. RBI is designed to emphasize reciprocity and turn taking within consistent patterns of interaction. The adult responds to the child's signal that initiates the routine by imitating the child's request or modeling a more sophisticated communication target and then signaling the child to respond. In this way, the child learns how a drink is obtained at home and when motivated by thirst is likely to request again. The adult's turn presents a choice of available drink options for the child and another opportunity for the child to communicate in the interaction. This routine provides materials that can be used to evoke the child's responses and an opportunity to increase the child's social engagement. The cup can be identified as the symbol for a drink. It can be used initially to gain the child's attention and then to shift attention to the interaction as the caregiver holds the cup by her face. The child may respond with a gaze directed to the adult's face. The adult may use exaggerated facial expressions or comments to share enjoyment with the child's response. The child is following the adult's

actions that are integral to the routine and not simply establishing eye contact in response to the mand, "Look at me" (McGee, Morrier, & Daly, 1999). The consistent sequence of the routine and familiarity with the materials provide a natural scaffold to support the family's implementation of the intervention. They can predict when the next opportunity for communication or social interaction will occur in the routine and be prepared to prompt or reinforce their child's response. These everyday experiences also make intervention more meaningful and consistent with their priorities.

Extending the Success of RBI

Kelly now uses a variety of gestures and vocalizations to make requests for attention and objects and to share her frustration when she needs to do something she would rather avoid. She chooses her favorite video after she drinks a glass of milk and watches short segments while playing with toys and looking at books during the morning while Mom does chores. She is learning to use simple signs to make requests and share ideas. Kelly joins her mom in some housekeeping tasks by picking up her books and putting them in her toy box. She sits at the table for dinner with the family for part of the meal and requests to leave by signing "All done." She shakes her head "no" and pushes the milk glass away rather than throwing it when she is asked if she wants more. By Kelly's bed is a picture schedule illustrating the steps of Kelly's bedtime routine, starting with undressing, then putting on pajamas, reading a short story, kissing Mom goodnight, and turning out the lights. Kelly can monitor the completion of each step and point to the next picture to help her move through the tasks without a tantrum. Kelly still keeps her family busy, but now her routines are opportunities to use communication and to practice new skills, not times of frustration, fear, and failure for the family.

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