

# Teaching a Young Child With Autism to Request Assistance Conditionally: A Preliminary Study

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**Purpose:** Investigators taught a 5-year-old boy with autistic disorder and severe language delay to conditionally use requests for assistance.

**Method:** A within-participant multiple-probe design across 3 functional tasks was implemented in order to evaluate the child's acquisition and conditional use of requests for assistance during intervention with each task.

**Results:** Results indicated initial acquisition of requests for assistance followed by a brief period of overgeneralization. As independence in completing a task increased, requests for assistance

correspondingly decreased. The participant's conditional use of requests for assistance and independent task completion were sustained across time.

**Conclusion:** This study highlights the need to assess conditional use of newly taught communicative behavior.

**Key Words:** autism, children, intervention, communication, conditional discrimination, generalized requesting

Many young children with autism experience significant communicative delays. Investigators have described children with autism who learn new communicative behavior but subsequently fail to use it conditionally (Sigafoos, O'Reilly, Drasgow, & Reichle, 2002). Conditional use requires that the learner have two or more responses that could be used in a given situation. Each response option matches best with a different context. For example, when a student encounters a math problem that she is competent to solve, it should be solved independently. On the other hand, if she cannot solve a difficult one, requesting assistance may represent a more efficient response option. Response efficiency is associated with the reinforcement value of each response option (Hernstein, 1961; R. Horner & Day, 1991; R. H. Horner, Sprague, O'Brien, & Heathfield, 1990; Richman, Wacker, & Winborn, 2001). In some instances, individuals with significant developmental disabilities may find a socially unacceptable response option more reinforcing than a more conventional option. For example, a child may request assistance when he really does not need help because doing so will require less effort than independently performing the task (Reichle, Freeman,

Davis, & Horner, 1999; Sigafoos et al., 2002). In other instances, the learner may not have sufficient teaching examples during initial discrimination training to know when and when not to use a particular response option (O'Neill & Reichle, 1993).

Interventionists can enhance the discriminability between new and existing less socially acceptable communicative forms by decreasing the reinforcement value associated with less desirable forms while providing reinforcement for socially acceptable approximations (Kelly, Lerman, & Van Camp, 2002; Shirley, Iwata, Kahng, Mazaleski, & Lerman, 1997; Wacker et al., 1990; and numerous others). Matching law explains conditional use of behavior. It suggests that when two behaviors are part of the same response class, responses can be allocated to the behavior with the most attractive reinforcement history (Davison & McCarthy, 1988; Herrnstein, 1961). For example, Worsdell, Iwata, Hanley, Thompson, and Kahng (2000) identified attention as the variable maintaining challenging behavior for each of their 5 participants' use of self-injury and aggression. When reinforcement for the behavior to be decelerated was made more intermittent, the alternative behavior being taught continued to be reinforced

on a continuous schedule. One participant's problem behavior decreased, and the new, socially acceptable alternative increased. The remaining participants allocated a greater proportion of responses to the alternative as the schedule of reinforcement began to favor the alternative response. Other investigators have replicated the application of similar procedures (Richman et al., 2001; Winborn, Wacker, Richman, Asmus, & Geier, 2002).

In addition to ensuring that the learner chooses a socially acceptable communicative alternative over one less acceptable, it is important to establish well-generalized use of new communicative acts in situations associated with a less conventional alternative. Drasgow, Halle, and Ostrosky (1998) demonstrated that failure to generalize may be related to response efficiency. They taught each of 3 young children with severe language delays to request food, toys, and events. During baseline, each child requested by reaching, grabbing, and leading his communicative partner. Subsequently, at school, each was taught to use a more conventional request. After acquisition, generalization probes implemented at home elicited almost exclusive use of the old requesting forms. Subsequently, extinction of the old forms and reinforcement of the more conventional request was implemented at home. Two of the children substantially increased their use of the new communicative form, and the remaining learner showed a moderate increase. These findings suggested that unless a superior reinforcer is available for the desired response option, generalization may be less likely to occur.

Conditional use of the communicative behavior requires that a child use a newly taught communicative behavior when it is needed but refrain from using it when it is not necessary or would not conform to social conventions. Sigafoos (1998) taught a 6-year-old boy with autism and significant communication impairment to touch a request symbol ("WANT") to request preferred items that were out of reach. Results indicated that when preferred items were within the child's grasp, rather than reaching for them, the child frequently pointed to the "WANT" symbol instead. In a subsequent study, Lim, Browder, and Sigafoos (1998) described a strategy to establish the conditional use of new communicative behavior with a child who experienced significant developmental disabilities. Using a variation of this strategy, Reichle and Johnston (1999) taught 2 boys with severe developmental disabilities to conditionally request desired snack items. When items were nearby, children were taught to self-select them. Alternatively, when items were distant, children were taught to produce a request. When items were near, the children engaged in a self-selecting response. Conditional use of each behavior was established quickly. Both children generalized their conditional use to other classroom contexts.

Communicative functions such as requesting assistance can present a formidable challenge in establishing the conditional use. The goal of the interventionist (i.e., parent, speech-language pathologist, teacher, or paraprofessional) involves teaching requesting when the learner encounters difficult tasks that he cannot complete while independently completing less difficult tasks. This can be challenging because positive teaching examples for requesting assistance eventually become negative teaching examples. That is, whenever a

learner requests assistance, a natural consequence is the delivery of prompted assistance. Across teaching opportunities, this affords the interventionist an opportunity to fade the level of prompt. Eventually, as the learner becomes independent, the need for an assistance request should be eliminated. Few investigations have directly examined this area of conditional use involving communication skills.

Reichle and McComas (2004) taught assistance requests to a 12-year-old boy with a behavior disorder who had difficulty with math. After acquisition, they demonstrated that the learner could accurately request assistance with difficult problems and, concurrently, independently solve easy problems on a worksheet containing validated problems of both types. Results suggested that for a newly acquired assistance request to be used conditionally, the individual must (a) discriminate difficult from easy problems, (b) learn to request assistance with a range of difficult problems, (c) be reinforced for independently completing easy problems, and (d) have contingencies arranged so the reinforcement value is greater for an independent response than for a request for assistance.

To date, few investigations have examined establishment of conditional use of early communicative acts among young children with autism. The purpose of the current investigation was to examine aspects of the conditional use of newly established requests for assistance. Can a learner be taught to use requests for assistance in a difficult task and subsequently learn to use this skill conditionally as he becomes increasingly competent in performing the task originally associated with the request for assistance?

## Method

### *Participant*

Peter (a pseudonym), a 5-year-old boy with a diagnosis of autism and global developmental delay, participated. He was diagnosed with autism at 3 years, 8 months. In the month prior to study entry, Peter was reevaluated by a licensed clinical psychologist through a local autism center. Formal assessment outcomes for Peter are displayed in Table 1.

Functionally, Peter used some gestures and spoken single-word approximations to communicate. His spontaneous utterances primarily functioned to request highly preferred items. He usually produced and understood spoken words representing familiar objects in the context of structured interventionist-directed opportunities. Peter followed routine one- and two-step directions. Clinical and parent report indicated that he readily participated in both motor and verbal imitation tasks. His parents reported that he participated in play activities, including block building and completing simple puzzles, although, when left alone, he primarily engaged in repetitive stereotyped behaviors. Recently, Peter had begun to initiate interactions with peers (e.g., hugging peers).

Peter received approximately 30 hr per week of home-based intervention services. Additionally, he attended a center-based early childhood special education program three mornings weekly. His home-based program combined discrete trial with natural teaching opportunities. Peter's current intervention goals included expanding his range of

**TABLE 1. Participant characteristics.**

Variable	Characteristic
Age	5 years
Diagnosis	Disorder and global developmental delay <i>DSM-IV</i> (American Psychiatric Association, 1994)
Age of diagnosis	3 years, 8 months
Autism Diagnostic Observation Schedule—Module 1 (Lord et al., 2000)	Communication score = 5
Mullen Scales of Early Learning (Mullen, 1997)	Social interaction score = 10
Vineland Adaptive Behavior Scale (Sparrow, Balla, & Cicchetti, 1984)	Early learning composite standard score = 49
Preschool Language Scale—4th edition (Zimmerman, Steiner, & Pond, 2002)	Adaptive behavior composite = 51
	Auditory comprehension age equivalence = 1 year, 11 months; Expressive language = 1 year, 11 months (standard scores = 50)

communicative functions and increasing spontaneity of communicative acts. He was learning to comprehend and produce action vocabulary, categorize objects, and identify objects by function. Increasing the complexity and duration of play and other leisure activities was another instructional objective. At school, he was learning to imitate actions to familiar songs and finger plays, make choices, use a picture schedule, greet adults and peers, and engage in parallel play with peers.

### **Activities and Setting**

All sessions occurred in Peter's home. Peter's mother, younger sibling, and one or two staff persons moved freely in and out of this area during intervention sessions. Teaching requests for assistance occurred across three different functional activities that included opening a jar (Activity 1), opening a wrapper (Activity 2), and unfastening his pants (Activity 3). Peter's parents and intervention team identified these as activities that he could not perform independently. Interventionists implemented baseline and intervention procedures for the first two activities at a child's table or on the family room floor. The third activity was baselined and subsequently taught during routine toileting activity.

### **Materials and Reinforcers**

A transparent jam jar was used in the first activity. Materials used in the second activity included miniature candy bars and fruit snack packs. For the third activity, two types of blue jeans (pants with snaps and pants with clasps) that Peter routinely wore made up the teaching materials. Natural reinforcement for the first two activities (opening a jar and opening a wrapper) enabled Peter to consume the contents. For the third activity (unfastening pants), reinforcers validated with daily objective preference assessment, as part of home therapy, were used.

### **Experimental Design**

A within-participant multiple-probe design (R. D. Horner & Baer, 1978) across each of three functional tasks was implemented. A baseline and intervention phase to teach a request for assistance was implemented in opening a jar (Leg 1). Once independent requests for assistance were established in

opening a jar, fading of physical assistance to perform the task was initiated in this activity, and intervention was initiated opening a wrapper (Leg 2). Intervention during the third activity, unfastening his pants (Leg 3), was similarly lagged behind intervention implemented in the second activity. Maintenance probes ensured that Peter's performance was sustained across time. Additionally, probes were implemented to evaluate use of requests for assistance with novel stimuli and activities.

### **Independent Variables**

Teaching procedures for requesting assistance constituted one independent variable. Interventionists, including in-home paraprofessionals and an applied behavior analysis therapist, implemented a most-to-least prompting hierarchy to teach requesting assistance. A spoken model was used initially. Contingent on Peter's spoken approximation of "help," the interventionist delivered assistance to complete the task.

Teaching Peter to complete a task independently constituted the second independent variable. In later phases of the first two activities (opening a jar and opening a wrapper), teaching strategies involved (a) using a most-to-least prompting hierarchy and (b) initially altering the stimulus properties of the task to decrease task difficulty. Decreasing task difficulty in teaching Peter to open a jar was operationalized as loosely affixing the lid to the jar (i.e., approximately one quarter turn). Decreasing task difficulty in the second task was operationalized as partially tearing the wrapper so that its contents were just visible. Teaching Peter to unfasten his pants involved (a) using a most-to-least prompting hierarchy and (b) teaching him first to unfasten his pants while they were off his body. Contingent on completion of the task, Peter either consumed the contents of the jar or wrapper or gained access to the reinforcer identified for unfastening his pants.

### **Dependent Variables**

Requests for assistance and task completion at the prescribed prompting levels served as dependent variables. A request for assistance was defined as an instance of a spoken approximation for "help." Task completion for the three activities was defined as follows: (a) opening the jar required

turning and removing its lid, (b) opening a wrapper required ripping the package and removing its contents, and (c) unfastening pants required completely unclasping or unsnapping pants. Interventionists scored each of the two dependent variables for each teaching opportunity by counting the number of correctly produced requests and tasks completed.

Interventionists scored both dependent variables on each teaching opportunity. The interventionist recorded on a data sheet (a) whether Peter produced a request for assistance given the current prompting level and (b) whether he completed the task given the prescribed level of assistance. For each task, data were displayed using cumulative recording methods for both dependent variables.

## Reliability

Throughout the study, both response and procedural reliability (Schlosser, 2002) was evaluated.

**Response reliability.** To assess interobserver response agreement, an independent observer (second, third, or fourth author) scored a subset of teaching opportunities for baseline, intervention, and maintenance for each of the three tasks. Agreement for each of the primary dependent variables was computed as follows: (number of agreements/total opportunities)  $\times$  100. Observer agreement was computed for an average 27.7% of opportunities across phases. Observer agreement for requests for assistance was 94.6% (range = 89.7%–100%). Observer agreement for task completion was 95.83% (range = 90.9%–100%).

**Procedural reliability.** The third and fourth authors monitored the staff's implementation of intervention procedures weekly. Experimenters conducted procedural reliability, including response and stimulus prompt level for requests for assistance and task completion, providing assistance, and delivery of reinforcement. The interventionist and a research assistant independently recorded whether each step was correctly implemented. Procedural reliability (opportunities

with correct implementation/total opportunities  $\times$  100) was 98.2% (range = 94.8%–100%).

## Baseline Procedures

Across several days, interventionists provided Peter with four separate opportunities to request assistance or complete each task in order to assess his performance. During each unprompted opportunity for opening the jar and opening the wrapper, a therapist placed the jar or package on the table directly in front of Peter. The interventionist waited 30 s for Peter to request assistance or to complete the task. Baseline opportunities for unfastening pants were provided during routine toileting activity. The interventionist waited 30 s for Peter to request assistance or to undo his pants before completing the task for him. During intervention for the first activity, the interventionist continued implementing periodic probes on the two activities that remained in baseline by using baseline procedures.

## Intervention Procedures

For each of the three activities, intervention consisted of two phases: (a) teaching Peter to request assistance followed by (b) teaching him to complete the task independently. Interventionists utilized a most-to-least response prompt hierarchy in both phases. Additionally, stimulus prompts in the form of modified task difficulty were used to teach opening a jar and opening a wrapper. Table 2 provides a description of the prompting hierarchies used for each task.

Teaching sessions were conducted 4 to 5 days per week. Staff implemented an average of seven teaching opportunities per day.

**Phase I: Teaching request for assistance.** For the first two activities, teaching opportunities occurred while Peter was seated at the work table or on the floor. The interventionist gave Peter the jar or package and said, "If you need help, tell

**TABLE 2. Prompt levels used to teach request for "help" and task completion.**

Phase	Open jar	Open wrapper	Unfasten pants
1: Teach request for help Response prompts (assisting learner to produce correct response)	Verbal prompt (Tell me "help") ↓ Time delay (5 s) (wait 5 s for Peter to open jar before delivering verbal prompt)	Verbal prompt ↓ Time delay (5 s)	Verbal prompt ↓ Time delay (5 s)
2: Teach task Stimulus prompts (manipulation of materials to enhance the probability of a correct response) Response prompts	One half turn lid ↓ Full turn lid Hand-over-hand ↓ Partial physical ↓ Time delay (5 s)	Partly torn package ↓ Sealed package Time delay (5 s)	Hand-over-hand ↓ Time delay (5 s)

*Note.* Arrows depict progression in fading prompts.

me, but give it a try.” Subsequently, the interventionist’s actions were guided by the current phase of the most-to-least prompting hierarchy to encourage Peter to verbally request “help” (see Table 2). Contingent on Peter’s production of a spoken request, the interventionist provided immediate hand-over-hand assistance to successfully complete the task. Requesting assistance teaching opportunities for the third activity occurred during a toileting break. For the most part, typically, during toileting Peter pulled down his pants over his hips without unfastening them; however, he could not pull them back up independently without unfastening them. To teach requests for assistance, the interventionist said, “Put on pants” followed by “Tell me if you need help.” After providing this cue, the interventionist’s actions were directed by the current phase of the most-to-least prompting hierarchy (see Table 2). Contingent on his spoken approximation of “help,” immediate hand-over-hand assistance to unfasten his pants was provided.

*Phase II: Teaching independent task completion.* Once Peter reliably produced independent requests during Phase I, the interventionist implemented Phase II to teach independent task completion. The interventionist used stimulus and response prompts described in Table 2 in teaching the three tasks.

Initially, for opening a jar and opening a wrapper, the stimulus prompts served to decrease task difficulty. Across teaching opportunities, the interventionist increased task difficulty systematically. For each level of task difficulty, a most-to-least response prompt hierarchy was employed to complete the task (see Table 2).

Prior to initiating Phase II intervention with pants unfastening (Activity 3), the interventionist conducted a separate session to teach him to unfasten his pants while they were off his body. Opportunities consisted of laying a pair of pants with snaps on the floor directly in front of Peter and instructing him to “unsnap pants.” Following this cue, the interventionist provided immediate hand-over-hand assistance. Prompts were faded using a most-to-least prompting hierarchy across 29 total teaching opportunities.

After establishing independence in unsnapping pants off the body, Phase II intervention procedures to teach independent pants unsnapping during the toileting activity occurred. Teaching opportunities for this activity followed the basic procedures previously described.

Troubleshooting was required midway through Phase II when it became apparent that Peter requested “help” immediately following the cue “unsnap pants” without attempting

to engage in the task. To encourage task engagement, a verbal reminder, “you need to try it,” occurred immediately following the cue to “unsnap pants.” This reminder was employed for several teaching opportunities and then faded. To maximize Peter’s independent toileting, the interventionist instituted a least-to-most-prompting hierarchy (time delay, point prompt, verbal prompt) to fade the “unsnap pants” prompt during the final 13 teaching opportunities.

*Probes for conditional use of requests for assistance.* A series of probes to examine Peter’s conditional use of requests for assistance were conducted for each activity. Table 3 provides a description of these probes for each activity during both Phase I (teaching request for assistance) and Phase II (teaching the task).

During Phase I intervention for the first activity (opening a jar), teaching opportunities required an assistance request contingent on the presentation of a difficult task (tightened lid). To examine conditional use of requests for assistance during this phase, the interventionist presented periodic opportunities for Peter to refrain from requesting assistance and instead complete the activity independently. During this phase, the antecedent events for conditional use probes involved the presentation of an “easy” variation of the activity. A loose jar lid required approximately a quarter turn to open it. Easy tasks were determined by verifying that Peter could successfully engage prior to the study.

During Phase II, Peter learned to open a jar. Teaching opportunities utilized stimulus prompts that initially decreased task difficulty (see Table 2). For the first activity, opening a jar, the initial stimulus prompt consisted of the lid affixed so that removing it required approximately a half turn. Once Peter learned to open the jar at this level of difficulty, task difficulty was increased. During these teaching opportunities, a correct response was to attempt to perform the task without requesting. To examine conditional use of requests for assistance during this phase, periodic probes presented a “difficult” variation of the activity. A correct response required Peter to request assistance.

Conditional use probes for opening a wrapper followed a similar logic (see Table 3). During Phase I teaching requests for assistance, opportunity consisted of presenting to Peter a package with the wrapper fully sealed (difficult). Conditional use probes, for which the appropriate response would be to refrain from requesting assistance and to attempt to complete the task, were periodically conducted using an “easy” variation (wrapper with contents visible) of the activity. During Phase II, an appropriate response would

**TABLE 3. Probes for conditional use of request for assistance during Phase I (teaching request for assistance) and Phase II (teaching task).**

Phase	Open jar	Open wrapper	Unfasten pants
1: Teach request for help “Easy” probes	Lid loosely affixed to jar (approximately one quarter turn)	Partially torn package with contents visible	N/A
Appropriate response	Refrain from requesting assistance	Refrain from requesting assistance	
2: Teach task “Difficult” probes	Lid tightly affixed to jar	Sealed package	Pants with clasps
Appropriate response	Request assistance	Request assistance	Request assistance



be for Peter to refrain from requesting assistance and to try to open the package (see Table 3). During this phase, the interventionist implemented conditional use opportunities using the “difficult” variation of the task (i.e., wrapper fully sealed). For these probes, requesting assistance was a correct response.

As Peter became more competent with opening wrappers, it became apparent that some wrappers were more difficult to open. Subsequently, conditional use of requests for assistance was operationalized to try to open the wrapper first and, if unsuccessful, to request assistance. Thus, if Peter tried for at least 5 s to open the wrapper, the opportunity was defined as a “difficult” opportunity for which an appropriate response would be to request assistance.

During Phase I for the third activity, an “easy” variation of unfastening pants, one that Peter could perform without help, could not be contrived (consequently, no conditional use probes were conducted during Phase I for the third activity). During Phase II of this activity, as Peter became increasingly competent, a variation in the type of pants he wore provided natural opportunities for evaluating the conditional use of requests. Peter learned to unfasten pants with snaps but had difficulty unfastening pants with clasps. Thus, pants with clasps constituted “difficult” conditional use probes for which requests for assistance would be appropriate.

**Maintenance probes.** Maintenance probes for assistance requests and independent task completion for the first two activities were implemented. During the first 3 months following intervention, interventionists implemented 24 probes, 12 each with difficult and easy variations of both opening a jar and opening a wrapper. A final maintenance probe for easy and difficult variations of both activities occurred approximately 7 months after intervention. For unfastening pants, 6 maintenance probes, 3 each with difficult (clasp pants) and easy (snap pants) versions of the task, were implemented approximately 6 months (range of 5 to 7 months) postintervention.

**Generalization probes.** Two types of generalization probes were implemented with the first two activities. We implemented probes for the conditional use of requests for assistance with untaught stimuli for the first two tasks during free play or snack (novel settings). Materials included eight different packages or containers of different types, sizes, and contents (e.g., bin of beads, tub of Play-Doh, package of cookies, ice cream bar). Easy and difficult variations of these activities were consistent with those presented during intervention sessions (i.e., lid loose or tight; package torn or sealed). Interventionists implemented 2 difficult probes following the 1st month of the study. Concurrent with these probes, Phase I (teaching the request for assistance) had been completed in the first two activities, and Phase II (teaching task completion) was well under way in the first activity and would subsequently begin in the second activity. Interventionists implemented the remaining 14 probes for generalization (7 difficult, 7 easy) during the 2 months following the conclusion of intervention.

The second type of generalization probe consisted of baiting requests for assistance during activities in which requests for assistance would be appropriate (e.g., asking Peter to get socks from a shelf he could not reach). Interventionists delivered seven generalization probes of this type during the

3 months following the completion of intervention. Baiting probes were not conducted prior to intervention (although parents reported that, prior to intervention, he did not request assistance in any of the probes used). Consequently, results cannot definitively address generalization across activities.

### ***Treatment Acceptability***

After mastery, Peter’s mother was asked to complete a shortened version of the Treatment Acceptability Rating Form—Revised (Reimers & Wacker, 1988). The form asks parents to respond to a series of questions regarding their perceptions of intervention effectiveness (e.g., “How likely is it that this intervention made permanent improvements in your child’s behavior?”), acceptability (e.g., “How acceptable did you find the intervention?”), and any associated negative side effects (e.g., “How well did carrying out intervention fit into family routine?”). Parents respond to each question using a 7-point Likert scale. For example, in response to the question “How likely is it that this intervention made permanent improvements in your child’s behavior?” ratings ranged from 1 (*unlikely*) to 7 (*very likely*).

## **Results**

### ***Overview***

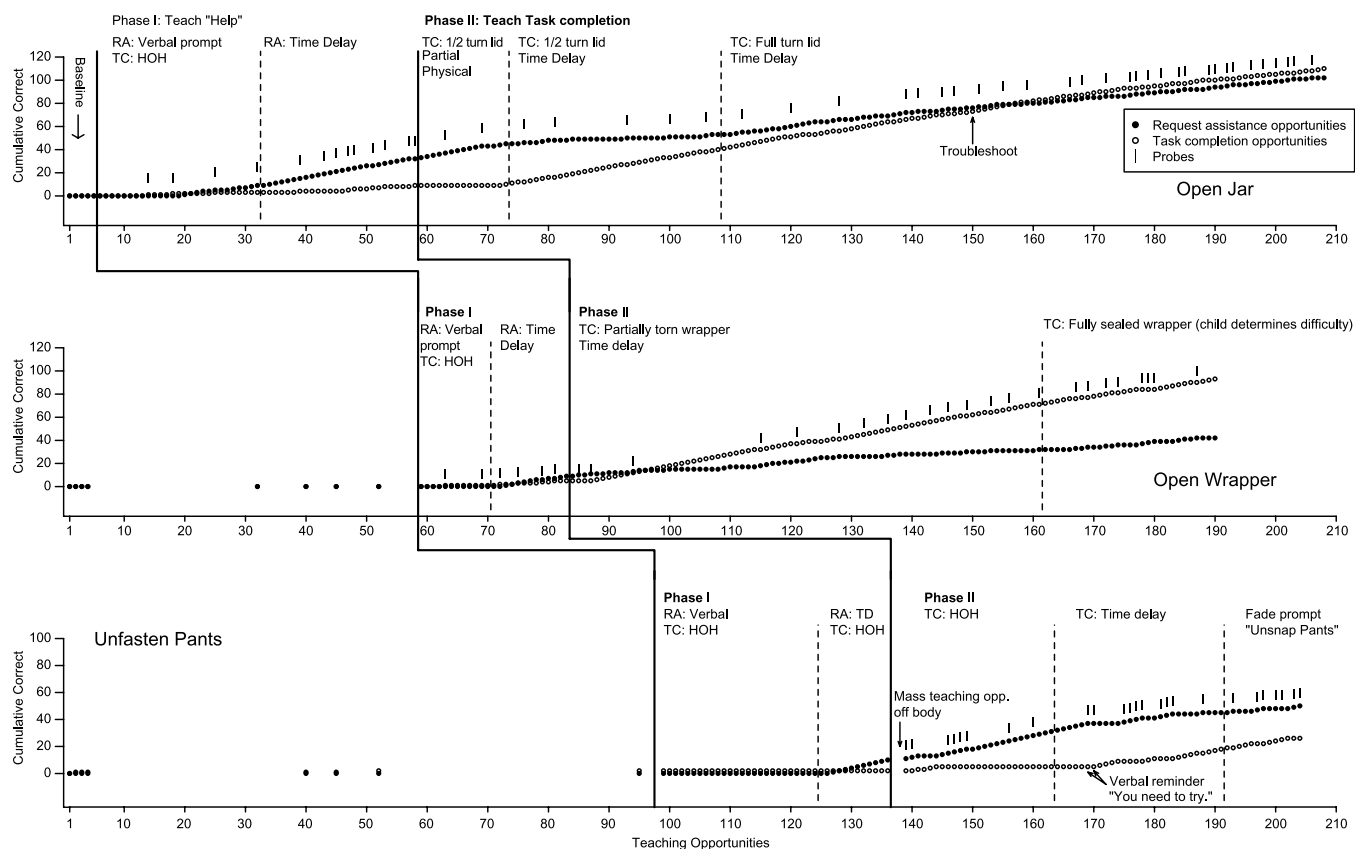
Results are presented as a cumulative recording for each leg (open jar, open wrapper, unfasten pants) of the multiple-probe design (see Figure 1). For each activity, results for request for assistance during Phase I are presented first, followed by data for acquisition of independent task completion together with conditional use of requests for assistance during Phase II. Tick marks indicate when probes were implemented. Probes for conditional use are displayed in Figure 2 across each leg of the multiple-probe design. In this figure, probe trials are displayed consecutively in a cumulative recording. In both figures, the abscissa represents each opportunity (instructional in Figure 1) and (probe in Figure 2). Both ordinates display instances of cumulative correct responses. Findings indicated that Peter learned to request assistance conditionally and to complete each of the three tasks independently. Finally, data on treatment acceptability suggested that, from a parent’s perspective, the intervention was socially valid.

### ***Requesting Assistance to Open Jar***

Peter did not produce a request for assistance or open the jar during 5 baseline opportunities. His first request for assistance occurred during Opportunity 20 (12th difficult teaching opportunity). Subsequently, he continued to produce a request for assistance on the next “easy” conditional use probe (3 incorrect productions to this point). When a time delay for prompting requests was instituted, Peter produced an independent request for assistance during 16 of 17 difficult teaching opportunities (94.1%). However, he overgeneralized his newly acquired request during 8 of 10 “easy” conditional use probes (80%).

During Phase II, initial prompt levels comprising a half turn of the lid and partial physical assistance, respectively,

**FIGURE 1. Performance in learning to conditionally produce requests for assistance and independently complete each of three functional tasks implemented in a multiple-probe design. RA = requests for assistance; TC = task completion; HOH = hand over hand.**



resulted in Peter opening the jar during 11 (92%) of 12 opportunities and requesting during 10 of the 12 teaching opportunities (83.3%). During conditional use probes (tight lid), he requested assistance correctly.

Next, when a time delay was instituted, Peter opened the jar during 30 of 31 opportunities. He also refrained from requesting assistance during 26 opportunities (83.9%). Subsequently, he both requested assistance and opened the jar. Peter requested during 4 of 5 "difficult" conditional use probes during this subphase.

During the final subphase, task difficulty was increased so that opening the jar required a full turn; Peter initiated requests in half of the opportunities. However, task completion indicated that he needed no assistance. He independently opened the jar on 14 of 17 opportunities during which he requested assistance. Consequently, troubleshooting in which the interventionist presented the jar and then either moved away or diverted her attention was implemented. Subsequently, Peter independently opened the jar on 36 of 37 opportunities (97.3%), and he refrained from requesting during 32 of 37 opportunities (86.5%). He requested assistance on 27 of 29 (93.1%) difficult conditional use probes (tight lid) presented during this subphase.

Maintenance probes indicated that Peter's performance was sustained across time. He made no errors during easy or

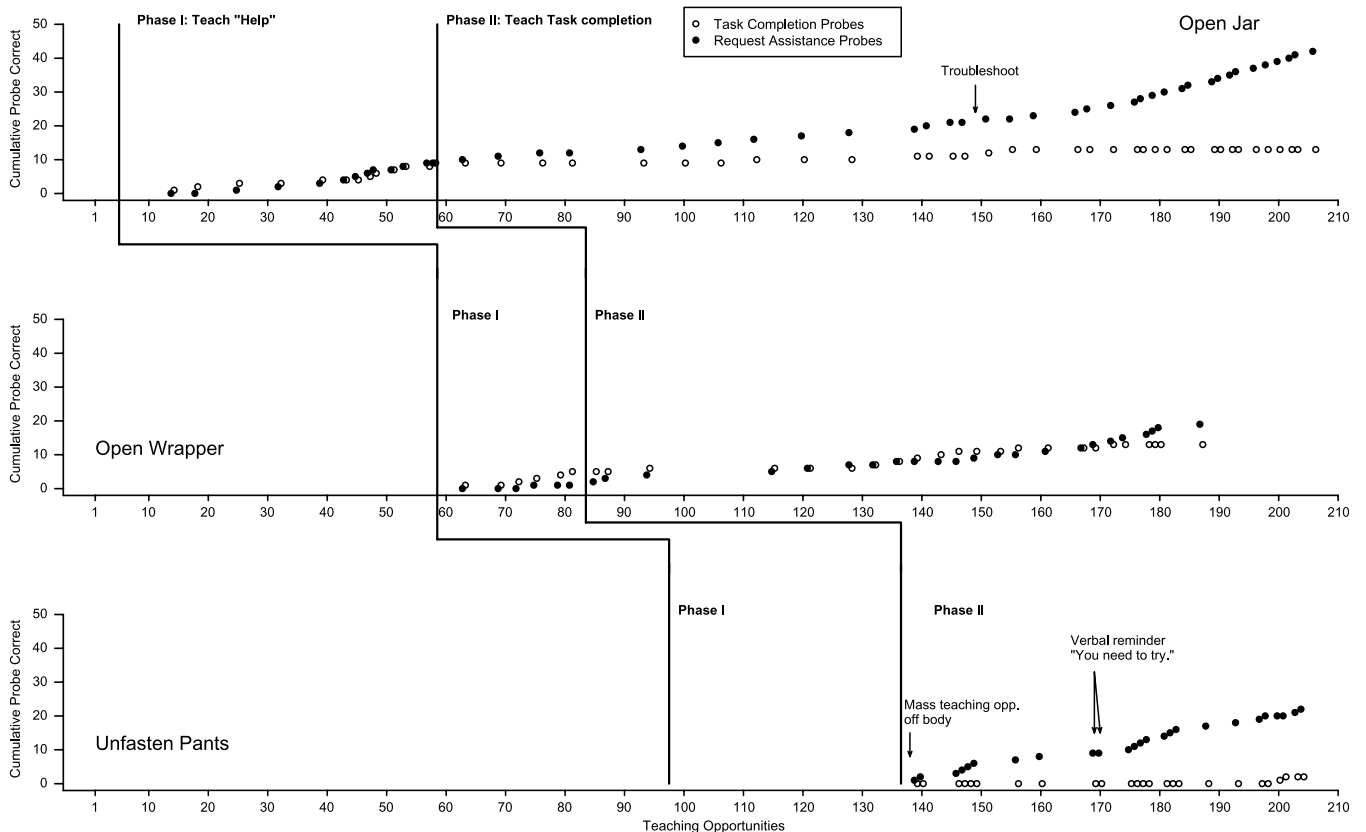
difficult probes in the first 3 months following intervention. A final probe conducted 7 months postintervention also produced correct conditional requests and independent jar opening.

### *Requesting Assistance to Open Wrapper*

Peter did not produce a request during any of the eight baseline probes nor did he independently open a wrapper. When a time delay for request prompting was instituted (Subphase 2), Peter produced an independent request for assistance during 100% of the eight "difficult" teaching opportunities, but he overgeneralized requests during the first two "easy" conditional use probes. Subsequently, however, he was correct on the next two "easy" probes (see Figure 2).

Initially, during teaching task completion, Peter did not request and independently opened the wrapper during 53 of 67 (79.1%) opportunities (package with a partially torn wrapper—"easy" opportunities). He requested assistance during 14 opportunities (20.9%). On 7 of these 14 opportunities, he requested and opened the wrapper independently; on the others, he required assistance to open the wrapper. During conditional use of request probes (wrapper fully sealed—"difficult" probes), Peter requested on 10 of 15 opportunities (66.7%). On 5 probes, he completed the task (see Figure 2).

**FIGURE 2. Independent performance on “easy” and “difficult” probe opportunities.**



Peter independently opened fully sealed packages during 33% of “difficult” probes during this subphase. During the final subphase, difficult opportunities were defined as attempting to open the package for at least 5 s prior to initiating a request. Peter did not request and performed independently during 16 of 18 opportunities (88.9%). On the remaining 8 difficult opportunities, he attempted to open the package (often for 15–20 s) prior to requesting.

Maintenance for conditional requests and independent performance conducted in the first 3 months following intervention (and probed again at 7 months) resulted in no errors during 26 opportunities.

### ***Requesting Assistance to Unfasten Pants***

No requests occurred during baseline. He was able to unfasten his pants during toileting during 25% of baseline opportunities. During initial requesting intervention, Peter produced prompted requests on 27 of 28 opportunities (96.4%). When a time delay was implemented (Subphase 2), independent requests occurred during all 10 opportunities. Peter successfully unfastened his pants on 100% of opportunities with full physical prompting during Phase I.

Once Peter had learned to independently unfasten pants while they were off his body, the interventionist initiated Phase II using snap pants (easy variation) during routine

toileting activity. Initially, he requested on 13 of 17 opportunities (76.5%). Hand-over-hand assistance occurred on 16 of 17 opportunities to complete the task (94.1%). During this subphase, Peter also appropriately generalized requests for assistance during all 8 opportunities (100%) with clasp pants (difficult variation).

Implementing a time delay for assistance with task completion resulted in requests on the first five teaching opportunities even though he independently completed the task prior to assistance on two of these opportunities.

In the final subphase (time delay for task completion), Peter initiated a request on each of the next 5 opportunities. On 2 of these 5 opportunities, he successfully completed the task prior to interventionist assistance. Subsequently, a verbal reminder was added (during the next two opportunities) of “you need to try” immediately following the cue to “unfasten pants.” After delaying the troubleshooting on the third opportunity, Peter independently unfastened his pants without a request. Performance was errorless for the remaining 18 teaching opportunities (100%).

During conditional use probes in this subphase, Peter appropriately requested assistance on 13 of 15 opportunities (86.7%). On the remaining 2 opportunities, he independently performed and refrained from requesting assistance.

To increase Peter’s independence during toileting, a least-to-most fading strategy was implemented during Opportunity



100 to reduce his dependence on the prompt “unsnap pants.” Prompts were eliminated after 8 opportunities with independent bathroom performance on the last 5 teaching opportunities of Phase II.

Conditional use of requests for assistance and independent pants unfastening during maintenance was errorless through 6 months after intervention.

During the 2nd month of the investigation, interventionists implemented two “difficult” generalization probes. At this time, Peter was independently producing requests for assistance when presented with the difficult tasks in the two first two legs of the intervention. However, he did not yet generalize to novel stimuli. Given a Play-Doh tub (tight lid), Peter attempted to open it by biting the lid and banging it on the table with no request for assistance. When presented with a plastic bag containing puzzle pieces, he shook it and turned it upside down but, again, did not produce a request for assistance.

Following intervention, Peter conditionally produced requests for assistance during generalization probes requiring that he open seven different containers or packages (different types, sizes, contents) not taught during intervention phases. Difficult and easy variations for each of the seven novel stimuli were consistent with those used during intervention (e.g., tight/loose lid, sealed/torn wrapper) and were implemented during either free play or snack time. He appropriately produced requests for assistance on all seven “difficult” probes and refrained from requesting on all seven “easy” probes. Peter also appropriately produced requests during difficult activities not associated with intervention during five of five probes.

### ***Treatment Acceptability Ratings***

Overall, Peter’s mother rated intervention procedures as acceptable, effective, and unlikely to disrupt family routines. The mean overall rating was 6.33 (range = 5–7) on a 7-point Likert scale.

### **Discussion**

A young child with autism can be taught to use requests for assistance conditionally. Peter’s mother rated overall intervention effectiveness and acceptability as high. Results suggest that an interventionist cannot assume that a child’s obligatory use of requesting assistance will result in correct conditional use. During Phase I, overgeneralization of requests for assistance was common without additional intervention. Only after Peter had acquired some initial skill in completing the task being taught did conditional use of requests occur.

Evidence obtained in the current investigation supports results from previous investigations indicating that interventionists may need to attend to response effort required to achieve conditional use of assistance requests. Peter demonstrated conditional use of requests for assistance during Phase II when presented with a jar requiring less than a full lid turn. However, initially, when task difficulty increased (requiring a full turn of the lid), his performance decreased even though his task completion skills indicated that assistance was not required.

Teaching requests for assistance may naturally result in increasing skill competency. In teaching Peter to open a wrapper, interventionists presented a package with a partially torn wrapper during teaching opportunities with concurrent probes for requests (fully sealed wrappers). During these probes, Peter requested during two out of three of the opportunities. Refraining from requesting assistance and independently opening sealed wrappers during the remaining opportunities likely reflected Peter’s increasing skill level with the task; it illustrates how previously presented positive teaching exemplars may eventually become negative teaching exemplars when the interventionist responds to requests for assistance during intervention.

Newly acquired requests did not generalize across activities. Although this is important for maintaining the integrity of the experimental design, it also indicates the need to teach multiple exemplars to achieve generalization. However, two probes conducted with difficult novel stimuli after establishing requests in the first two activities did not result in generalization of requests. However, subsequent to establishing conditional use, Peter was errorless for appropriate responses across a variety of novel items and/or activities. Because we did not conduct generalization probes at the outset of the study, we cannot unequivocally draw definitive conclusions regarding generalization. Future studies should pursue generalized conditional uses of beginning communicative behavior.

It also remains unclear whether teaching exemplars involving only access to preferred items will be sufficient to produce generalization with tasks associated with escape. Reichle, Drager, and Davis (2002) indicated that requests for assistance taught as an alternative to escape-maintained challenging behavior did not generalize to conditions when they resulted in gaining access to positive reinforcement.

Our findings demonstrate the functional relationship between one package of intervention procedures used to concurrently teach requests for assistance and independent task completion for three functional tasks with a young boy with autism. However, it is important to note that Peter entered the study with some communicative ability. Future work should explore conditional use with students who have even less sophisticated communicative repertoires.

Given the high maternal ratings of intervention acceptability and effectiveness, parents may find the procedures employed in teaching conditional discrimination of requests and independent task completion to be practical. Although intervention procedures resulted in conditional use of requests for assistance that were maintained over time, replication with other children will be important in establishing the robustness of the findings.

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