

*EFFECTS OF THREE-STEP PROMPTING ON COMPLIANCE WITH
CAREGIVER REQUESTS*

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Three-step prompting is a procedure commonly used in behavioral assessments and interventions; however, little research has evaluated the effects of this procedure on increasing children's compliance with caregiver requests. In this study, caregivers of children who demonstrated low levels of compliance were trained to use three-step prompting when presenting task requests to their children. Results indicated that training caregivers to implement this procedure decreased the frequency of caregiver-delivered prompts and increased compliance by the children.

DESCRIPTORS: caregiver training, compliance, prompting

Prompts are supplementary stimuli used to increase correct responding in the presence of discriminative stimuli that are intended to eventually control the behavior (Billingsley & Romer, 1983). Guidelines for using prompting procedures have been well documented, and three key aspects are consistently outlined in the literature: (a) Present the discriminative stimulus, (b) prompt the correct response, and (c) reinforce the correct behavior, whether prompted or unprompted (Miltenberger, 2001).

Three-step prompting (also referred to as least-to-most prompting) is a particular type of prompting procedure that consists of moving progressively through a vocal prompt, model prompt, and physical guidance (Miltenberger, 2001). This procedure is often used in behavioral assessments (e.g., Iwata, Dorsey, Slifer, Bauman, & Richman, 1982/1994) and interventions (e.g., Horner & Keilitz, 1975;

Tucker & Berry, 1980); however, little research has focused on its effectiveness in enhancing compliance (Iwata, Pace, Kalsher, Cowdery, & Cataldo, 1990). The purpose of the current investigation was to evaluate the effects of training caregivers to implement three-step prompting on frequency of caregiver-delivered prompts and, in turn, children's compliance.

METHOD

A multiple baseline design across dyads (with an imbedded within-subject design across caregivers) was implemented to evaluate the effects of training caregivers to implement three-step prompting on children's compliance and the frequency of caregiver prompts. All sessions were 5 min in duration.

Participants and Setting

Ned, an 8-year-old boy who had been diagnosed with autism, participated in Dyad 1 (with his teacher), Dyad 2 (with another teacher), and Dyad 3 (with his teacher's aide). Joe, a 6-year-old boy who had been diagnosed with attention deficit hyperactivity disorder, participated in Dyad 4 (with his mother). Ed, a 7-year-old boy who had been diagnosed with Asperger syndrome, participated in Dyad 5 (with his mother). All sessions for Dyads 1, 2,

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and 3 were conducted in a school classroom, and all sessions for Dyads 4 and 5 were conducted in the participants' homes.

Response Measurement and Interobserver Agreement

Data were collected by the experimenter using a handheld computer with the Observe[©] data-collection program. A prompt was scored (a) the first time the caregiver delivered a verbal instruction (i.e., when a trial was initiated), (b) when a verbal instruction (or equivalent request) was repeated prior to the initiation of a new instruction, (c) when the instructor modeled the instructed response, and (d) when the instructor physically guided completion of the task. For example, if the three-prompt sequence was implemented correctly and completely (i.e., the child did not comply with the request independently), the caregiver's initial instruction, modeled prompt, and physical guidance all were scored. *Compliance* was defined as completion of a request following either the first verbal prompt or the model prompt (i.e., prior to the use of a physical prompt). *Correct implementation* was defined as implementing each step correctly (verbal, model, physical) without providing additional prompts. Correct implementation was scored if the prompting sequence was terminated contingent on compliance. *Incorrect implementation* was defined as providing any additional prompts or omitting any step.

Treatment integrity was assessed for 100% of sessions on the total number of trials with correct implementation. Integrity was assessed by dividing the number of correct trials by the total number of correct and incorrect instances and multiplying the result by 100%. Percentages of trials with integrity were 98% (range, 97% to 99%), 96% (range, 94% to 98%), 98% (range, 97% to 99%), 97% (range, 94% to 98%), and 99% (range, 98% to 100%) for Dyads 1, 2, 3, 4, and 5, respectively, after training. It should be noted that the caregivers did not use three-step prompting prior to

training; therefore, we did not calculate treatment integrity during baseline.

Interobserver agreement was assessed for 32% of the sessions. Agreement was calculated by dividing the number of agreements during 10-s intervals by the number of agreements plus disagreements and multiplying the result by 100%. Agreement for compliance was 92% (range, 90% to 95%), 90% (range, 88% to 90%), 93% (range, 91% to 95%), 89% (range, 85% to 93%), and 97% (range, 96% to 99%) for Dyads 1, 2, 3, 4, and 5, respectively. Agreement for prompts was 91% (range, 89% to 94%), 91% (range, 89% to 91%), 91% (range, 90% to 94%), 89% (range, 85% to 93%), and 98% (range, 97% to 100%) for Dyads 1, 2, 3, 4, and 5, respectively.

Procedure

Baseline. A list of 10 tasks was provided to the caregiver. The list was generated from caregiver reports of instructions that consistently occasioned noncompliance and included tasks such as writing, dressing, self-care skills, and room organization. The caregiver was told to "provide these instructions to your child as you typically would." The experimenter did not interact with the dyad during the session.

Training. Caregiver training consisted of three steps: (a) Caregivers were given a written description of the three-step procedure (available from the first author), (b) a model was provided to the caregiver wherein the experimenter and a trained data collector role-played variations of the procedure (e.g., progression through all three prompts, termination of the sequence, and delivery of reinforcement contingent on compliance with either the first or second prompt), and (c) role-playing sessions in which the caregiver delivered prompts and the experimenter provided feedback. Training was terminated when the caregiver implemented the three-step prompting procedure with 90% accuracy across three consecutive 10-trial sessions.

Posttraining, generalization, and follow-up. Posttraining and generalization were identical

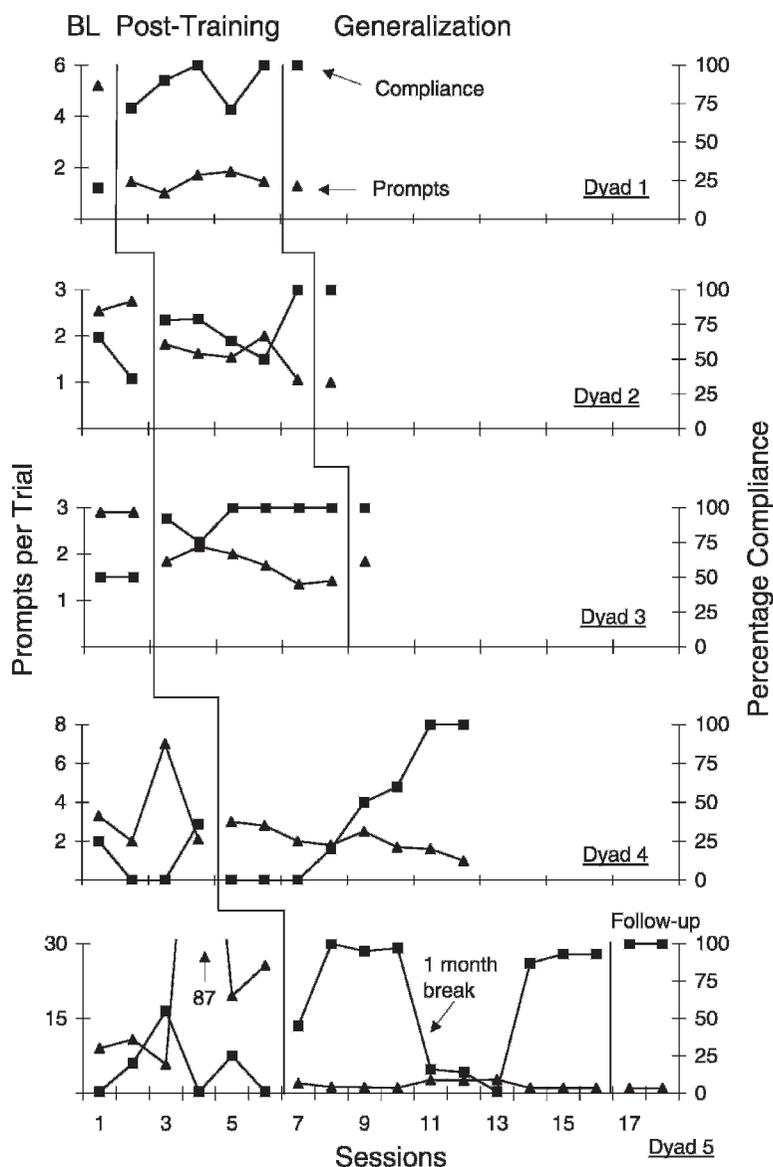


Figure 1. Percentages of trials with compliance and prompts per trial across all five dyads.

to baseline except that, during generalization, 10 new tasks were used. Follow-up sessions were identical to the posttraining condition, but sessions were conducted 1 year after the original training.

RESULTS AND DISCUSSION

The percentages of trials with compliance and prompts per trial across all five dyads are

depicted in Figure 1. During baseline the caregivers provided several prompts per trial ($M = 5.2, 2.6, 2.9, 3.6, 26.2$) and the children displayed very little compliance ($M = 20\%, 51\%, 50\%, 15\%, 17\%$) across the five dyads, respectively. Following caregiver training, prompts per trial decreased ($M = 1.28, 1.6, 1.7, 2.0, 2.5$) and compliance increased ($M = 87\%, 74\%, 94\%, 41\%, 64\%$) across dyads, respectively, with Dyads 2 and 4 demonstrating

100% compliance for the final two sessions. Follow-up data were collected for Dyad 5 1 year later, and treatment gains were maintained ($M = 1$ prompt per trial and $M = 100\%$ compliance). Generalization was tested for three dyads and, in each case, effects generalized to novel responses. For Dyads 1, 2, and 3, the average number of prompts per trial was 1.2, 1.0 and 1.8, respectively, and compliance remained at 100%. Generalization results must be tempered in that, although compliance occurred at high levels with tasks that had been reported to occasion noncompliance, no baseline data were collected to measure pretraining levels of noncompliance.

After caregivers were trained in three-step prompting, compliance increased to 100% for all dyads within 35 min of session time. In addition, the number of caregiver prompts per trial significantly decreased within 5 min post-training for four of the five dyads, and physical guidance was necessary for only a limited number of trials ($M = 29\%$). These results indicate that training was effective in teaching caregivers to apply three-step prompting and that the procedure was an efficient method to increase compliance by these children.

There are a number of limitations to the current investigation. First, guidelines for implementing three-step prompting in the existing literature specify not only manipulation of antecedents (i.e., prompts) but also the delivery of reinforcing consequences for task completion (Miltenberger, 2001). Therefore, caregivers in the current study were trained to implement both antecedent (prompts) and consequent (praise for task completion) procedures. Thus, the relative contributions of these procedures remain unclear; however, it should be noted that, except for Dyad 3, compliance increased significantly during the first session following

caregiver training. If reinforcement of compliance alone was responsible for this change, a slower improvement (as was seen in Dyad 3) would be expected. Future research should be conducted to clarify the effects of these intervention components.

A second limitation is that, when individuals are highly verbal or tasks are not manual in nature (e.g., providing vocal answers to spelling questions), three-step prompting may be inappropriate or impossible to implement. Future research should continue to evaluate effective prompting procedures in cases in which three-step prompting cannot be used.

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