Graphic Feedback and Instructions as a "Booster Shot" Following Didactic Parent Training

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GRAPHIC FEEDBACK AND INSTRUCTIONS AS A "BOOSTER SHOT"

FOLLOWING DIDACTIC PARENT TRAINING

A Thesis

Presented to the

Department of Psychology

and the

Faculty of the Graduate College

University of Nebraska

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

University of Nebraska at Omaha

by

Michael R. McDonald

July 1978
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Abstract

This study analyzed the effectiveness of a simple "booster" training procedure for refining a parent's skill in child management following a clinical training package. Initially, a mother was introduced to the procedures of behavior management through individual didactic sessions in her home, in order to help her reduce the oppositional behavior of her Down's Syndrome son. This training resulted in moderate but unstable improvements in the parent's use of child management techniques, and in her child's response to them, with gradual deterioration in parent and child performances over sessions. To refine the parent's skill in child management, a simple "booster" training was introduced sequentially in a multiple-baseline design for two parent skills: (1) following through with instructions, and (2) praise for child compliance. Follow-up data collected up to 4 weeks following training indicated that improvements in parent and child behavior were maintained following treatment.
Training parents in the use of behavior management techniques has been shown to be an effective and efficient means of helping them to deal with the deviant behaviors of their children (see reviews by Berkowitz & Graziano, 1972; Forehand & Atkeson, 1977; Johnson & Katz, 1973; O'Dell, 1974). By practicing relatively simple behavioral procedures, parents have learned to modify a number of their children's behaviors, including noncompliance (e.g., Budd, Green, & Baer, 1976), aggression (e.g., Patterson, 1974a; Patterson, 1974b; Patterson, Cobb, & Ray, 1973; Budd, Pinkston, & Green, Note 1), and oppositional behaviors (Wahler, 1969; Wahler, 1975). Training parents to deal with such behavior problems seems a reasonable treatment strategy if one wishes to decrease the need of parents for continuing professional services. After acquiring a number of useful management skills, it is possible that parents could independently devise new behavioral programs to deal with additional child problems as they arise.

A major goal of parent training programs has been to impart a number of practical child management skills to parents with a minimum of professional time. Existing studies have utilized a number of intervention strategies, including lectures and didactic interaction with the experimenter (e.g., Glogower & Sloop, 1976; Hall, Axelrod, Tyler, Grief, Jones, & Robertson, 1972; Johnson & Brown, 1969; Salzinger, Feldman, & Portnoy, 1970), roleplaying and modeling (in vivo or through videotapes) (Christopherson, Arnold, Hill, & Quilitch, 1972; Johnson & Brown, 1969; Kifer, Lewis, Green, & Phillips, 1974; Peed, Roberts, & Forehand, 1977), cueing and feedback on performance (Budd et al., 1976; Kifer et al., 1974; Zeilberger, Sampen, & Sloan, 1968; Budd et al., Note 1), and self-recording
These types of training may be divided roughly into two broad categories: those that rely primarily on didactic training methods (i.e., reading, lectures, and instructions), and those that concentrate more on parents' actual performance of skills. There is some evidence (e.g., Gardner, 1972; Nay, 1975) that didactic training methods alone teach a verbal understanding of principles while doing little to improve parents' implementation of behavioral procedures. Of the above studies relying primarily on a didactic presentation of information (Glogower & Sloop, 1976; Hall, Axelrod, Tyler, Grief, Jones, & Robertson, 1972; Johnson & Brown, 1969; Salzinger, Feldman, & Portnoy, 1970), all were successful in improving parents' performance. However, since each of these studies augmented the didactic presentation with at least one performance-based training component (e.g., parent data collection, experimenter modeling, and experimenter cueing), the didactic component cannot be evaluated independently.

One possible explanation for the relative ineffectiveness of reading and lectures as primary treatment modes may lie in the fact that such materials often are directed toward a rather broad audience. The information provided may be so global as to preclude an adequate understanding of how to apply the child management skills to one's own child. Even when more individualized training is provided within a didactic format, parents may still encounter difficulty in transferring from the verbal explanation of a procedure to actual performance of the skill in everyday interactions with their children.

Thus, the literature suggests that didactic means of training par-
ents are often insufficient, and are unlikely to produce substantial improvements in child behavior. Rather than forgoing this training approach entirely, however, it might be worthwhile to consider a practical supplement to didactic training that could improve transfer of parent knowledge to actual performance of skills. After all, didactic training has some advantages over performance-oriented training, in that it can be accomplished without the target child's presence and teaches the principles of a skill rather than only how the skill is executed. If didactic training alone is not fully successful for a parent, perhaps a standard "booster" treatment procedure could be devised to refine parents' use of child management skills such that efficient performance of the skills is acquired.

The use of "booster shots" (Patterson, 1974a; Patterson, 1974b; Patterson, Cobb, & Ray, 1973) or "refresher courses" in contingency management (Wahler, 1975) have been suggested as means of helping parents to maintain performance of previously learned behavioral skills. In the Patterson studies, "booster shots" were provided during follow-up observations either at the request of the parent or at the suggestion of the clinician. Wahler's "refresher courses" were provided to parents and teachers following a 3-month summer vacation during which data had not been collected. Unfortunately, neither Patterson nor Wahler specified the exact training components utilized in the "booster" or "refresher" treatments. Herbert and Baer (1972) proposed the use of self-recording as a method of improving the differential attending skills of parents who had completed a behavior modification training program, but whose performance had not yet reached optimum levels. In their study, simply counting the frequency of attending to the appropriate behaviors of their children
led to significant improvements on performance for two mothers. The authors suggested that the immediate feedback on performance may have been the reinforcer responsible for improving performance.

If, as Herbert and Baer suggest, the effectiveness of self-recording is due to its functioning as a feedback mechanism, perhaps other feedback techniques are available that do not require parents to collect data on their own or their children's behavior. Such a procedure might simply involve presenting the parent with a record of his/her performance and then describing how that performance might be improved.

One means of communicating performance quality to parents is through the use of graphs. Graphic representations of performance on any target skills could be used to clearly show parents the improvements they have made, and, if necessary, the further improvements toward which they should strive. Past studies using graphic feedback have focused primarily on its use with teachers (e.g., Horton, 1975; Rule, 1972; Saudargas, 1972), and results have been equivocal. Horton (1975) and Saudargas (1972) suggested that their training techniques were effective, while Rule (1972) found no clear behavioral changes. However, in these studies, graphs were used as a primary component of the initial training package. It is possible that more clear and stable results could be obtained if this technique were used to refine the use of already acquired skills—that is, the effectiveness of graphic feedback might be enhanced if it followed a prerequisite knowledge of behavioral principles.

Although instructions alone have been shown to be relatively ineffective in teaching new skills (e.g., Nay, 1975; Rule, 1972; Schnelle, 1974), they too may be useful in improving the quality of skills that have al-
ready been learned. Instructions have the advantage of being brief, individualized, and informative. They may take the form of a simple reminder, or of a thorough review of a skill and its use. By using a combination of graphs and instructions, a parent could be shown (1) the progress that has been made since baseline, (2) how much progress could yet be made, and (3) how best to make that progress.

The present study investigated a booster training package, consisting of graphic feedback on past performance and instructions to be more consistent, with a parent following didactic parent training. Examinations were made of changes in the parent's use of child management skills, as well as correlated increases in the desired child behaviors.
Method

Subjects

Subjects for this experiment were a mother and her oldest child, Jim. The mother (Mrs. M.) was a housewife in her thirties with a high school education. In addition to Jim, Mrs. M. had a 4-year-old daughter and another infant daughter, both of whom were of normal development and presented no special problems. Mrs. M. had attended several parent training sessions during the previous year with another therapist who had met individually with her on a weekly basis, but failed to complete assignments or finish the training. She requested more intensive individual training after expressing difficulty in controlling Jim's behavior since the arrival of the infant.

Jim was a 7-year-old Down's Syndrome child who had been described by his mother as noncompliant and aggressive. Jim had a history of medical problems, including respiratory and circulatory difficulties, as well as frequent colds and bronchitis. Throughout the study, Jim was enrolled in a special education classroom where his behavior problems were reported to be less severe than those his mother reported at home. Jim's most recent psychological examination indicated severely retarded intellectual development and moderately retarded adaptive behavior, as measured by the Stanford-Binet Intelligence Scale and the Vineland Social Maturity Scale.

Mr. M. lived in the home during the study but worked during the days and did not participate in the study.

Experimental Setting

Data were collected 3 days per week during 40-minute sessions, be-
ginning when Jim arrived home from school at approximately 3:15 p.m. During these observation sessions, the mother and children engaged in their normal daily activities using any materials available in their home. When weather permitted, the mother and children were allowed to interact outdoors. Typically, no other adults or children were present during observation sessions.

**Observation Procedures and Observational Definitions**

An observer with a clipboard and stopwatch recorded the behaviors of Mrs. M. and Jim from the room in which they were interacting. When the mother and child were in different rooms, the observer stayed in the same room with the child and recorded the mother's verbalizations. (During the initial experimental conditions, normative data were collected also on parent-child interactions between Mrs. M. and the 4-year-old daughter to determine whether her behavior problems were severe enough to warrant additional intervention. Due to the daughter's consistently appropriate behavior, this data collection was terminated before the end of the experiment and is not presented here.)

Records of parent and child behaviors were recorded in continuous 10-second intervals, with only one instance of any one behavior recorded in any interval. Because a major concern of the mother was Jim's opposition to instructions, the child's compliance and noncompliance were examined within the framework of instructional trials. Whenever the parent gave a clear instruction to the child, the instruction signified the beginning of an instructional trial. By definition, an instructional trial lasted until (1) the child completed the task, (2) six intervals passed with no further repeat of that instruction, or (3) the instruction was
pre-empted (as described below). With the exception of aggression (which was recorded during all intervals), only child behaviors occurring within instructional trials were considered. The following definitions were used in recording the parent behaviors:

**Ambiguous Instruction:** A demand made by the parent to the child in which an act of compliance is implied, but the behaviors expected of the child are not clearly specified (e.g., "Play nicely," "Help your sister.").

**Clear Instruction:** A demand made by the parent to the child that specifies a physical act of compliance and indicates the behaviors expected of the child, or which clearly specifies a behavior in which the child is not to engage (e.g., "Bring me the truck," "Don't hit your sister.").

**Repeated Instruction:** Any time the parent repeats all or part of a clear instruction before the end of an ongoing instructional trial.

**Physical Guidance:** Any time the parent physically assists the child toward compliance with a clear instruction (e.g., takes the child's hand to lead him toward task materials).

**Pre-empted Instructional Trials:** Any time during an instructional trial when the parent either (1) gives a new clear instruction without requiring the completion of the previous one, (2) completes the task herself, (3) indicates that the child is no longer expected to comply, or (4) asks someone else to complete the task.

**Positive Attention:** Any physical or verbal contact with the child that praises the child or approves of his behavior (e.g., hugs or kisses the child, or says "That's nice," "Good job," etc.). A special symbol was used to denote positive attention contingent on child compliance with
instructions.

**Negative Attention:** Any physical or verbal contact with the child that ridicules, threatens, or punishes the child (e.g., hits or slaps the child or says "That's stupid," "I'm going to spank you," etc.).

**Neutral Attention:** Any physical or verbal contact with the child other than positive or negative attention, instructions, or repeats of instructions (e.g., contact with the child as they sit next to each other, or says "How do you feel?", "What is your sister doing?", etc.).

**Timeout:** Any time the parent makes the child sit in a chair or go to a secluded room as punishment for the preceding child behavior.

The following child behaviors were recorded:

**Compliance:** Any time the child is completing, or making some movement toward completing, any clear instruction (e.g., child manipulates task items as he was told to do).

**Noncompliance:** Any time the child does nothing toward completing, or indicates physically or verbally that he is not going to complete, a clear instruction (e.g., child ignores the parent's instruction or says "No," "I won't do it," etc.).

**Aggression:** A physical attack on another person, self, materials, or animals.

**Reliability Procedures**

Interobserver agreement was analyzed by having a second observer make simultaneous but independent recordings in the home. Agreement was measured by comparing the two observers' records interval by interval for each behavior category. The percentage of agreement between the observers was calculated by dividing the number of agreements by the number of
agreements plus disagreements and multiplying by 100. Reliability checks were conducted at least once during each experimental condition.

**Design**

Initially, comprehensive, didactic training was administered in an A-B design and was not experimentally analyzed. Preliminary examination of the data following this training indicated that three parent behaviors were in need of further training: (1) initiating physical guidance when needed to prompt child compliance, (2) eliminating pre-empting of instructions, and (3) providing frequent praise for child compliance. For simplicity, the first two categories were combined into one training component, called correctly following through with instructions.

Booster training for these behaviors was introduced sequentially in a multiple-baseline-across-behaviors design. By initiating training on only one component at a time, it was possible to determine the functional effect of booster training on individual categories of parent behavior.

**Experimental Conditions**

**Baseline: Sessions 1 to 15:** The experimenter explained that an observer would be present for several sessions to record parent and child behaviors in order to determine what would be helpful to the mother. The mother and children were asked to go about their normal interactions, and to keep visitors and phone calls to a minimum.

**Comprehensive Training through Reading and Didactic Instruction:**

Sessions 16 to 47: Following the collection of baseline data, nine sessions over a 3-week period were devoted to training Mrs. M. in a broad range of behavioral skills intended to improve her interactions with Jim. This training program, which was conducted entirely in the family's home, re-
quired approximately 12 hours of intervention time. Although the training focused on the use of these principles with Jim, the experimenter emphasized the fact that the principles should be just as effective with other children and even adults. During training sessions, Jim was at school and the daughters were in another room. No further interaction data were collected between the end of baseline and the completion of the comprehensive training.

The content of the training included teaching the following skills: pinpointing and defining behaviors, increasing appropriate behaviors through the use of positive attention, using ignoring and timeout to decrease inappropriate behaviors, and increasing compliance through the use of better instruction-giving and following-through techniques. All training sessions were audiotaped to verify the nature of the topics covered. The method of training consisted of regular reading assignments from the book *Behavior Problems* (Baker, Brightman, Heifetz, & Murphy, 1976), each of which was followed by a discussion in which the experimenter clarified principles covered in the reading assignment, answered questions, and explained how the principles could be applied directly to Jim's specific behavior problems. Due to Mrs. M.'s failure to complete written assignments during her past parent training experience, no written exercises were required. Instead, an informal probing procedure was used during discussions to insure that Mrs. M. had an adequate understanding of the day's material before moving on to the next day's assignment.

Following the completion of training, interaction data were again collected to examine the effects of training on Mrs. M.'s performance, and the concurrent changes in Jim's behavior. Mrs. M. was reminded of the
experimental nature of the program and was told that no further information or feedback would be provided during these sessions.

**Booster training on Following Through with Instructions: Sessions 48 to 54:** Booster training consisted of a single session lasting approximately 1 hour in which Mrs. M. was provided graphic feedback on her prior performance and encouraged to consistently use the skill being discussed. She was first shown graphs of her baseline and post-training performances on the target behavior and of Jim's concurrent changes in compliance with instructions. Regression lines were included for all experimental conditions on all graphs to emphasize the behavioral trends during pre- and post-training observations. After carefully explaining to Mrs. M. how to read and analyze the graphs, the experimenter reviewed in detail exactly how to implement the target procedure correctly. During this review, the experimenter presented Mrs. M. with examples of times when she had used the procedure both correctly and incorrectly during pre- and post-training observation sessions. The experimenter then answered any questions and stressed to Mrs. M. that her correct use of the procedure should lead to further improvements in Jim's compliance.

The first behavior to receive booster training was the mother's following through with instructions. Specifically, Mrs. M. was told (1) to always begin to physically guide Jim toward compliance if he had not begun to comply independently within approximately 10-20 seconds of her initial instruction, and (2) to require Jim to complete every instruction she gave him (i.e., never pre-empt any instruction).

After this single booster session, observation of parent and child behaviors was resumed, with no further feedback to the mother on her
Booster Training on Praise for Compliance: Sessions 55-70: The second behavior treated in the above manner was the use of frequent praise contingent on child compliance. After reviewing with the mother the graphs of her praise and Jim's compliance, Mrs. M. was told to praise each instance of Jim's compliance, and to praise about once every 10 seconds if the instruction took more than 10 seconds to complete. As before, the training was provided during a single session, followed by observation of parent-child interactions with no further feedback to the mother.

Follow-up Observations: Sessions 71 and 72: Follow-up data were collected for two sessions at 2-week intervals following the termination of the final treatment condition. Again, no further information was provided during these sessions.
**Results**

The ranges and means of the reliability percentages for defined parent and child behaviors are presented in Table I. Except for negative attention, the mean percentage of agreement across conditions was 75% or better for all behaviors recorded. The lower percentages of agreement obtained for some behaviors were due primarily to low rates of the behaviors, and thus few opportunities to record the behavior. Timeout was never implemented during reliability observations, and is therefore not included in the table.

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**Insert Table 1 about here**

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Daily levels of the two parent behaviors targeted for booster treatment are presented in Figure 1, in the order in which training was applied to them. The top graph presents the daily percentage of instructional trials in which the mother followed through correctly with her instructions to the child. Correct following through entailed two components: (1) the mother did not pre-empt the instruction, and (2) she initiated physical guidance within three 10-second intervals of the instruction if the child had not yet begun to comply. During baseline, the mother was quite variable in following through correctly on her instructions, with an average rate of 71%. Following the application of the initial comprehensive training package, the rate of correct follow throughs increased moderately to 79%, but still remained extremely variable across days, declining nearly to baseline levels by the end of this treatment condition. Since
regression lines were used as a visual aid for the mother rather than as a method of analyzing the data, they are not included here. Following the application of the graphic feedback and instructions booster training, the mother's rate of correctly following through increased dramatically to an average of 96% and remained at a high, stable level throughout the final treatment condition and follow-up observations.

Insert Figure 1 about here

The lower graph of Figure 1 presents the daily levels of parental praise, as a percentage of intervals of child compliance with parental instructions. The rate of praise during baseline was very low, with an average rate of only 9%. Following the initial training package, this rate increased to a mean of 22%, but was relatively unstable. The level of praise was not significantly affected by booster training for correct follow through of instructions, remaining at an average of 26%. The second booster training, aimed directly at accelerating the mother's praise for compliance, led to clear increases in the rate of praise to an average of 46%, and follow-up data indicated that this improvement was maintained after the completion of training.

Figure 2 presents daily levels of Jim's compliance to clear instructions throughout the study. During baseline observations, the average rate of compliance was 43%. Following the introduction of the initial parent training package, there was a sharp increase in compliance to a mean of 63%, but daily rates were extremely variable
and followed a slight downward trend throughout the condition. After the introduction of the first booster treatment, there was another clear increase in compliance to a mean of 82%. The rate of compliance remained high and relatively stable throughout the second booster training and follow-up checks.

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Insert Figure 2 about here

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Additional parent behaviors recorded but not targeted for booster treatment are presented in Figure 3 as bar graphs showing the mean rates of occurrence during the experimental conditions and follow-up observations. The first two graphs on the top half of Figure 3 present the rates of parental ambiguous instructions and repeated instructions as percentages of total instructions (ambiguous or clear), and of instructional trial intervals, respectively. Neither of these behaviors varied significantly across experimental conditions. Although the rate of ambiguous instructions appears quite high, their occurrence appeared to relate to the nature of the ongoing activity (with highest frequency during free play periods when no task requirements were evident), rather than indicating a deficit in parental instruction-giving techniques. Similarly, the frequency of repeated instructions was not of major concern. In many cases, repeats appeared to be functional in initiating child compliance and in redirecting the child toward the task when necessary. Given the high levels of child compliance following the two booster treatments provided, it did not seem necessary to initiate booster training
on either of these two parent behaviors.

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Insert Figure 3 about here

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The third graph on the top half of Figure 3 indicates the total amount of attention (either positive, negative, or neutral) provided to the child as a percentage of total intervals of observation. This graph indicates a moderate increase in the rate of total attention following the initial comprehensive training, with relative stability during the remaining treatment conditions. The dramatic increase in attention during follow-up observation may reflect the nature of the activity in which the mother engaged (reading a book to the children during one of the two follow-up sessions).

Despite the stability in the rate of total attention across the study, the three graphs on the lower half of Figure 3 suggest a qualitative change in the mother's attending during the study. These three graphs present the three types of parental attention (positive, negative, and neutral) as percentages of total intervals in which any attention was provided to the child. The first graph indicates a steady increase in the percentage of positive attention across treatment conditions, with maintenance of this improvement at follow-up observations. After a mean rate of 10% during baseline, negative attention declined to negligible rates during the ensuing treatment conditions, with no occurrences recorded during follow-up observations. The decline in neutral attention, as shown in the last graph, corresponds with the changes observed in the rates of positive and
negative attention.

Although aggression toward his siblings was one of the problem behaviors for which Jim's mother sought assistance, aggressive behaviors were rarely manifested in the experimenter's presence. Since the rate of aggression averaged less than 1% of total intervals during all experimental conditions, no further data on this behavior are presented. Similarly, timeout was utilized only seven times during the experiment, with all episodes occurring during the two booster conditions and follow-up observations.
Discussion

This study demonstrated that a brief, simple booster training procedure led to clear and stable improvements in two components of a mother's response to her son, following moderate and/or transitory changes in those same parent behaviors through didactic parent training. The booster shots, which consisted of graphic feedback on the mother's pre- and post-training performance and instructions on how best to perform the skill, were introduced for two parent behaviors, following through with instructions and providing praise for child compliance. Sequential introduction of booster training across two parent skills in a multiple-baseline-across-behaviors design demonstrated that the booster training was responsible for the improvements observed in parent behaviors. In addition, the mother's improved performance on these child management skills led to concurrent improvements in the rate of the child's compliance with clear instructions. While the quantity of total parental attention to the child did not vary systematically with the treatment conditions, the proportion of that attention that was positive increased with every treatment condition, suggesting an improved quality of parent-child interactions following parent training.

The results of the initial clinical training program tend to support the suggestions of Gardner (1972) and Nay (1975) that didactic training techniques are insufficient in teaching skills to those not professionally trained in behavior management. Although no attempt was made to conduct an experimental analysis of the initial training, only moderate, transitory improvements were observed in the parent
behaviors recorded. Nevertheless, the data do suggest that the didactic training procedure does have some merit. Despite the incomplete nature of the results, the initial post-training data suggest that some child management skills were learned, and that they were accompanied by increases in child compliance. This partial success may be due to the fact that the training, although didactic in nature, was individualized and concentrated primarily on how to perform the skills discussed.

The effectiveness of the graphic feedback and instructions booster treatment in initiating and maintaining successful child management skills indicates a great potential for its use in future parent training programs. Although Wahler (1975) and Patterson and his colleagues (Patterson, 1974a, 1974b; Patterson, Cobb, & Ray, 1973) have reported the use of "refresher courses" and "booster shots", respectively, neither has specified the precise components used, nor conducted an experimental analysis of the effects of retraining parents in the more effective implementation of previously learned skills.

Patterson's booster shots (Patterson et al., 1973) were conducted during follow-up observations with parents after completing a training program relying heavily on parent data collection. The data collection phase was preceded by a comprehensive study of social learning principles via a programmed text. In this study, seven of nine parents completing a 1-year follow-up required some retraining; thus, even after a training program incorporating both didactic and performance components, most parents did not maintain their acquired
skills following treatment. The present study found similar results without requiring data collection by the parent, suggesting that this component may not be essential for successful parent training. Further research is needed to provide comparative data on these training approaches.

It is possible that the booster training used in the present study could be incorporated successfully into a number of other types of parent training programs, both didactic and performance-oriented. While the present training procedure did not include the use of parent data collection (cf., Salzinger et al., 1970), videotape presentation of materials (cf., Glogower & Sloop, 1976), experimenter modeling (cf., Johnson & Brown, 1969), or role-playing (cf., Peed et al., 1977), other experimenters have reported successful parent training using such methods. Research is needed to indicate whether instructions and graphs could be used successfully as a booster shot following any of these types of initial training.

Herbert and Baer (1972) suggested that self-recording was successful in improving the performance of previously learned skills because of its function as feedback on performance. It is likely that the booster training components used in this experiment served the same function while requiring very little of the parent. The booster shots were brief, simple, informative, and very effective. It is possible that parent data collection, self-recording, and other more demanding procedures are unnecessary and inefficient compared with a single session of graphic feedback and instructions from the experimenter.
One drawback of this study is that its design does not allow an analysis of the effect that the initial training had on the success of booster training. That is, would the booster training have been effective without the prior didactic training in behavioral principles? This question might be investigated by providing "booster" training on some parent behaviors to parents who have not had prior training in the principles of behavior management (using graphs of their baseline performance), and then comparing these results with booster training on other parent behaviors provided after more comprehensive training. The results of such an experiment could shed light on the search for ever more efficient training methods.

The results of this study must be interpreted cautiously for a number of reasons. Perhaps most important is the relatively brief follow-up period (4 weeks), which leaves unanswered the question of whether booster training results in long-term improvements in parent and child behaviors. However, the length of the data collection phases following each of the two booster training inputs would indicate that the parent's performance was maintained much longer than the 4-week follow-up period implies. Data were collected over 3- and 6-week intervals following each of the two booster sessions, respectively, with an additional 4 weeks of follow-up data. This indicates that the mother continued to follow through with instructions for up to 13 weeks after the single booster training session (i.e., throughout both booster phases and follow-up), and that praise for compliance was maintained up to 10 weeks (through the final data collection phase and follow-ups). Although more follow-up
data would be desirable, the length of the data collection phases subsequent to each booster training session strengthens the study.

Another potential limiting factor is that all data for this study were collected during sessions immediately after the child's arrival home from school. It is possible that the results were positively biased by not collecting data during what could be more stressful times of the day (e.g., meals, bedtime, etc.). However, by choosing a single consistent time period, it is likely that shifts in performance were due more to experimental manipulations than to environmental variables.

Finally, the booster training approach clearly was successful for the individual parent involved, but replications are needed to determine the effect of this treatment procedure for other parents. If these results generalize to other parents, this procedure may be widely used as an efficient parent training technique.

The strength of this study lies in the simplicity and efficiency of the procedures used to effect dramatic improvements in a mother's use of child management skills. With only approximately 14 hours of professional intervention time (12 hours on comprehensive didactic training and 2 hours in booster training), the mother learned to consistently and effectively use two child management skills to dramatically increase the compliance of her oppositional son. At this time, replications are needed to insure that such booster training will be effective with other parents and other target behaviors.
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Patterson, G. R., Cobb, J. A., & Ray, R. S. A social engineering


Zeilberger, J., Sampen, S. E., & Sloan, H. N. Modification of a
Footnote

1In addition to the behaviors presented, child crying, child inappropriate verbalizations, child appropriate behavior, and negative parental instructions were recorded during the study. These behaviors were not of concern and are not presented.
Table 1

Reliability Percentages

<table>
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<th>Behavior</th>
<th>Range of Mean Reliabilities Within Conditions</th>
<th>Mean Reliability Across All Conditions</th>
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<td>Repeated Instructions</td>
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<tr>
<td>Pre-empts</td>
<td>77 to 100</td>
<td>81</td>
</tr>
<tr>
<td>Any Attention</td>
<td>79 to 83</td>
<td>81</td>
</tr>
<tr>
<td>Positive Attention</td>
<td>75 to 86</td>
<td>78</td>
</tr>
<tr>
<td>Negative Attention</td>
<td>0 to 70</td>
<td>67</td>
</tr>
<tr>
<td>Neutral Attention</td>
<td>69 to 78</td>
<td>75</td>
</tr>
<tr>
<td><strong>Child Behaviors</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance</td>
<td>79 to 92</td>
<td>84</td>
</tr>
<tr>
<td>Aggression</td>
<td>50 to 88</td>
<td>76</td>
</tr>
</tbody>
</table>
Figure 1. Daily percentages of correct follow throughs and praise for compliance across treatment conditions. Asterisks represent follow-up sessions.
CORRECT FOLLOW THROUGHS

BASELINE  AFTER DIDACTIC TRAINING  AFTER BOOSTER TRAINING

% OF INSTRUCTIONAL TRIALS

PRAISE TO COMPLIANCE

% OF INTERVALS OF COMPLIANCE

SESSIONS
Figure Caption

Figure 2. Daily percentages of child compliance across treatment conditions. Asterisks represent follow-up sessions.
CHILD COMPLIANCE

BASELINE

AFTER DIDACTIC TRAINING

AFTER BOOSTER TREATMENTS

% OF INSTRUCTIONAL TRIAL INTERVALS

SESSIONS

0 10 20 30 40 50 60 70 80 90 100

5 10 15 20 25 30 35 40 45 50 55 60 65 70
Figure 3: Condition means and follow-up means of six additional parent behaviors.
AMBIGUOUS INSTRUCTIONS

POSITIVE ATTENTION

NEGATIVE ATTENTION

NEUTRAL ATTENTION

EXPERIMENTAL CONDITIONS