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Teaching General Behavior Modification Performance Skills with Written Instructions

James D. Cowart
Western Michigan University

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TEACHING GENERAL BEHAVIOR MODIFICATION
PERFORMANCE SKILLS WITH WRITTEN INSTRUCTIONS

by

James D. Cowart

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements of the
Degree of Doctor of Philosophy
Department of Psychology

Western Michigan University
Kalamazoo, Michigan
December 1982
Two experiments examined the effects of training with written instructions on trainees' use of general behavior modification performance skills. In Experiment I, the behavior modification skills of two groups of trainees were assessed in scripted roleplay sessions. Each group participated in differing numbers of baseline sessions before training was presented. Training consisted of studying a set of written rules and examples. Only after training did the trainees demonstrate improved skills. Since the "child" behaviors which were presented during roleplay sessions were all different from one another, the trainees' performance demonstrated generality of the effects of training across "child" behaviors. The trainees' improved performance was maintained throughout the 6-week follow-up, demonstrating generality over time.

In Experiment II, three trainee/child pairs served as subjects. The children were severely mentally retarded and exhibited high rates of undesirable behaviors. Each trainee/child pair participated in differing numbers of baseline sessions before training was introduced to the trainee. Training consisted of reading and making written responses to a programmed text. The text included the written rules from Experiment I, along with test questions designed to test memorization and application of the rules. The trainees' performance only improved
after training. In addition, the children's behavior problems decreased after the trainees were trained.

Taken together, the results of the two experiments reveal that written instruction can have a strong facilitative effect on general behavior modification performance skills. The results are discussed in terms of the development of rule-governed behavior.
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Ph.D. 1982

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I want to acknowledge those individuals whose contributions enabled me to carry out this research. First, I want to thank Jack Michael who was never willing to accept my second best efforts but was always willing to assist me in gaining a better understanding of behavior analysis. I want to express my gratitude to Howard Farris for his helpful comments and for his continued encouragement of my research efforts. I want to thank Dick Malott for sharing some of his enthusiasm for and understanding of staff training. I also wish to thank Howard Poole for his consistent support of my efforts in instructional design. I am indebted to Karol Peterson for giving me the opportunity to conduct this research in an educational setting that is supportive of an empirical approach. I want to especially thank Randy Timpson, Ray Bennett, Scott Schrum, and Richard Jackie for their patient and skillful data collection and Holly Poynter and Lauren Schien for their convincing roleplay skills. I also want to express my appreciation to the teachers, parents, and pupils whose cooperation made this research possible. Finally, I want to thank my wife, Lynne, and also my two children for being so patient and supportive during my work on this research.

James D. Cowart
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EXPERIMENT I

INTRODUCTION

Behavior modification skills can be thought of as being made up of a verbal repertoire and a performance repertoire. The verbal repertoire includes skill in defining behavioral principles, and more importantly, recognizing the relevance of the principles in everyday life. In addition, verbal skill includes the ability to develop plans for the rearrangement of contingencies in the environment so as to improve behavior. The performance repertoire includes the ability to behave differentially toward behavior that should be strengthened or weakened by immediately implementing consequences appropriate to the behavior to be modified. In addition, the performance area includes the ability to give instructions, deliver and fade prompts, and raise response requirements so as to teach new skills.

A behavior modification performance repertoire that is limited to a narrow set of stimulus conditions is not very useful unless the relevant environment(s) contain little variation. A general repertoire is more flexible and allows the individual to respond appropriately across many different stimulus conditions.

Three recent reviews have pointed out the importance of research in this area of general behavior modification performance skills. Forehand and Atkeson (1977) reviewed literature on the generality of the effects of parent training and determined that research on the ability of various forms of training to produce generality was a
neglected area. In particular, the authors stated that it is quite unclear if knowledge of behavior principles and concepts increases the generality of the effects of parent training. Kazdin and Moyer (1976) reviewed literature on teacher training and then stated that "additional work needs to be conducted to determine the most efficient training package" (p. 194). Finally, Stokes and Baer (1977) remind us that the development of a technology of generalization "is an important area of unfinished business for applied behavior analysis" (p. 350).

General behavior modification performance skills refer to skills that are not specific to one particular stimulus configuration (e.g., skill in teaching one child to tie his shoes) but instead are demonstrated over one or more stimulus dimensions (e.g., skill in teaching two or more children to clap their hands, dress themselves, brush their teeth, etc.). General behavior modification performance skills can further be divided into two parts: behavioral teaching skills and behavioral management skills. Behavioral teaching skills typically include skill in giving instructions, prompting, shaping, and consequating student responses. These skills are utilized to establish new responses or to establish new stimulus control over responses. Behavioral management skills typically involve discrimination of the type of child behavior that is occurring, followed by the provision of an appropriate and consistent consequence for that behavior, e.g., reinforcement, punishment, or extinction. These skills are utilized to increase or decrease responses that are already in the child's repertoire.

Within the realm of general behavioral teaching skills, three
studies have focused on the development of a component skill: delivering reinforcement. Panyan and Patterson (1974) trained attendants to deliver frequent and contingent reinforcement following resident compliance with nine separate instructions. Experiment I showed that a videotaped model of an experienced trainer correctly reinforcing compliance with the same nine instructions was more effective than written instructions or video playback of the attendants' teaching session. Experiment II demonstrated that a group that saw a live model demonstrating the same skill improved as much as the group that saw the videotaped model.

Gladstone and Spencer (1977) also demonstrated the efficacy of modeling in developing a component of general behavioral teaching skills. These experimenters measured attendants' rates of contingent praise in two separate sessions. After varying numbers of baseline sessions, the experimenters modeled correct praise in the context of the toothbrushing task following the presentation of the model. The attendants' rates of correct praise increased in both the initial toothbrushing session and also in the hand and face washing session which immediately followed. The demonstration of improved attendants' skill in providing praise in the context of a different task, hand and face washing, suggests some generality of the effects of training.

Speidel and Tharp (1978) used a variety of methods to train teachers to increase their rates of praise in their classrooms. Instructional methods included lecture, discrimination training, modeling, guided practice, and feedback. Training was conducted in a special workshop classroom, but the rate of praise increased in the teachers' home classrooms.
Other experimenters have focused on developing a wider range of general behavioral teaching skills. Gardner (1972) trained attendants to use prompting and shaping in teaching simple skills to mentally retarded residents. Measurement of the attendants' performance skills occurred during roleplay sessions. He compared two different teaching methods and found that lectures improved verbal skills but had little effect on performance skills, whereas roleplaying did not improve verbal skills but did produce substantial gains in the attendants' performance skills. However, the question as to the generality of the training is clouded since it is unclear whether the tasks the attendants were assigned to teach in training were different from those used in the assessment sessions.

Gladstone and Sherman (1975) used an instructional package to teach high school students to train retarded children to follow the instruction, "bring ball." The authors' instructional methods included videotape models of correct teaching of the "bring ball" task, rehearsal, and feedback. The high school students acquired the teaching skill and were subsequently able to teach a different retarded child to follow two additional instructions, "sit down" and "come here," demonstrating generality across similar children and tasks.

Cowart (Note 1) successfully trained parents of retarded youngsters to teach a variety of skills to their children. The training was packaged and included written instructions, modeling of teaching skills, roleplay, and feedback. In order to measure generality across tasks, the tasks used during training were different from those used during data collection sessions.

Koegel, Russo, and Rincover (1977) successfully trained teachers to
teach a variety of tasks to several different "autistic" children. The training lasted up to 25 hours and included several methods: written instructions, a videotaped model of correct and incorrect skill use, as well as feedback and brief live modeling. Generality of the effects of training was demonstrated since the children/task combinations used in training were different from those used in assessment.

Koegel, Glahn, and Nieminen (1978) identified the effects of several separate training methods. These experimenters performed two experiments with parents of autistic children. In Experiment I, the authors found that brief demonstrations of the correct teaching skills involved in the training task allowed the parents to skillfully teach that specific task to that specific child; however, the parents were not able to demonstrate the teaching skill with other task/child combinations until a lecture and videotaped presentation was made. The videotape included correct and incorrect examples of teaching skills and did not include tasks or subjects used in assessing the parents' skills. In Experiment II, the authors found that the videotaped presentation alone was sufficient to produce parent teaching scores of approximately 80% correct.

Shultz (Note 3) trained instructional aides to teach retarded students to follow simple instructions. Training included written instructions, then videotaped discrimination training on positive and negative examples of target skills, and then feedback on the aides' performance with retarded students. In order to assess generality across tasks, the tasks demonstrated on the videotape were different from those used in assessment sessions. Shultz found substantial gains
in performance after the videotape discrimination training. Feedback improved performance further.

Several authors have evaluated general behavioral management skills. One author focused on the component skill of presenting reinforcement. Horton (1975) trained fourth grade teachers to increase their rates of behavior-specific praise in certain subject matter areas. Training consisted of discrimination of instances of behavior-specific praise from videotapes, instructions, and audiotape recordings of the teachers' classroom interaction presented as feedback. However, the training did not affect the teachers' behavior-specific praise in other subject matter areas.

The following studies focused on training of a wider range of behavior management skills. Parsonson, Baer, and Baer (1974) successfully trained two classroom aides to apply correct social contingencies to two general classes of child behavior: appropriate and inappropriate. Training consisted of feedback in the aide's classroom. This study demonstrates that feedback alone can be used to develop general skills in one setting. Budd, Green, and Baer (1976) successfully trained a mother to modify five subclasses of her attention to her child's noncompliance. Training included both instructions and daily feedback. Jones and Eimers (1975) used roleplaying to improve teachers' behavior management techniques as measured back in the classroom. Jones, Fremouw, and Carapses (1977) further demonstrated that teachers trained with roleplaying could, in turn, train other teachers with the same method.

A review of the literature described above reveals that certain
independent variables have been identified which produce general behavior modification skills. Both feedback and roleplaying have been demonstrated to produce general behavior management skills. With regard to general behavioral teaching skills, one variable has been isolated as being capable of producing general skills: videotaped examples of correct and incorrect skill use. However, the above studies suggest that numerous other variables may produce general behavior modification skills. Unfortunately, the other variables were introduced as a part of a package or in a sequence of treatments such that unambiguous assessment of their effects is precluded. These additional variables include written instructions, discrimination training of positive and negative examples, videotape and live models of correct examples, guided practice, and videotape feedback sessions.

There may well be many different training methods that can produce general skills (i.e., skills that can be demonstrated across behaviors, settings, and children). Whatever method is selected, the trainee must be trained so that he/she can exhibit the skills in all relevant behavior/setting/child combinations. One obvious but extremely time-consuming method would be to provide training in the natural environment in every relevant behavior/setting/child combination. Trainers could also attempt to simulate relevant combinations in the training setting. Roleplaying or videotape would be two means of accomplishing these simulations. Since there are probably close to an infinite number of possible behavior/setting/child combinations, the actual combinations selected for use in training can only be a limited sample. There is, therefore, much importance attached to the
selection of the actual combinations that will be presented to the trainees during training. Those selected must clearly exemplify the full range of the stimulus class that they represent.

In order to facilitate the generality of the effects of training, trainers could also develop sets of written rules which are general enough to apply to all relevant behavior/setting/child combinations. These rules could then be used alone or as a supplement to other training. Such rules might facilitate generality by providing stimuli in the form of rule statements that the trainees could emit and react to across varied behavior/setting/child combinations.

One additional frame of reference needs to be utilized in the evaluation of the effects of various instructional methods on general behavior modification skills: cost. Some of the above training methods are much more labor intensive and costly than others. For example, feedback and roleplaying, while shown to be effective, require large expenditures of staff time. In addition, the training staff must be highly proficient in behavior modification skills in order for the instruction to be effective. Considering the enormous numbers of parents, teachers, and attendants who need to be trained in general behavior modification skills, methods must be developed which are rapid and economical and which can be easily disseminated.

The present study was designed to be an extension of the above line of research and focuses on instructional methods which are inexpensive, yet may produce general behavior management performance skills.

Initially, two experiments were planned which would have established
baseline performance levels, after the introduction of written rules, and then gone on to evaluate two methods of videotaped instruction (discrimination training [Shook & Cowart, Note 2] and modeling.) Trainees were to be evaluated in roleplay sessions and with children.

Because of the results of the written rules phase in Experiment I, the two experiments were redesigned. Experiment I attempted to determine the immediate and longer term effects of a set of written rules on trainees' performance of general behavior management skills as assessed in roleplay sessions. Experiment II attempted to determine if use of a training manual based on the written rules would result in improved trainee skills when the trainees were placed with children who exhibited high rates of problem behaviors. In addition, Experiment II sought to determine any resultant effects on the children's behavior.
METHOD

Subjects and Setting

Eight practicum students from a Psychology 151 class at Western Michigan University were selected as subjects. All of the 151 students selected had registered for a practicum experience conducted at Croyden Avenue School, a special education facility in Kalamazoo, Michigan. Four of the students had registered for a 12:30 to 1:30 p.m. block, Monday through Friday; the other four had registered for a 1:30 to 2:30 p.m. block.

Eight students in all had registered for the 12:30 to 1:30 p.m. block. All eight were pretested by placing them in a controlled role-play situation and presenting them with 10 separate types of behavior that they had to react to in some way. Data were collected as to the correctness of their reactions. The four with the lowest scores on the roleplay pretest (ranging from 40% to 47% correct, with a mean of 43% correct) were selected.

Five students in all had registered for the 1:30 to 2:30 p.m. block. All five were pretested, and one thereafter elected not to participate further. The four selected had pretest scores ranging from 25% to 42%, with a mean of 35% correct. All trainees gave their informed consent before participating in the study.

All sessions were conducted in a large conference room within Croyden Avenue School. Upon completion of this experiment, all of the subjects were reassigned to specific classrooms within the school.
where they rejoined other Psychology 151 students and participated in
the usual practicum activity, tutoring special education pupils.

Procedures

Experimental Design

Sessions were conducted daily (Monday through Friday). A
multiple-baseline-across-group (trainees) design was employed (Baer,
Wolf, & Risley, 1968). Both groups remained under baseline conditions
until relative stability was achieved in both groups and each single
subject's data. Following baseline, the independent variable was
introduced successively to each of the two groups. After the inter­
vention phase was completed, there were three separate follow-up ses­
sions for each group. Follow-ups were conducted at approximately one
week, three to four weeks, and six weeks after termination of the
intervention phase.

Instructions to Subjects

The subjects (trainees) were told that a roleplayer would play the
role of a handicapped child who exhibited behavior problems. They were
told that they were responsible for managing this "child's" behavior
during a nine-episode session. They were further instructed that the
experimenter would arrange appropriate materials and start and stop
each brief episode and that each episode would consist of the "child"
behavior and their reactions to the behavior. They were told that they
should behave "naturally" but in the best way they knew how in order to
manage the child's behavior. They were also told that they would have
tokens or edible treats to use as rewards. The use of tokens in special education settings was briefly explained. Finally, they were told that data collectors would be present who would collect data on both "child" and trainee behavior.

Control of Sessions

In order to remove bias from the sessions, a script was developed for the roleplayer's use in each session which described the behavior the roleplayer was to present during each of the episodes. The script also described the materials that were present during each episode. The experimenter arranged the materials, cued the roleplayer, and then started and stopped each episode. This set-up time resulted in a 10- to 30-second delay between episodes.

So as to further control bias, a master list of inappropriate, appropriate, and unacceptable child behaviors was generated. Three child behaviors, from each master list of appropriate, inappropriate, and unacceptable behaviors, were randomly assigned to each nine-episode session.

Two young women served as roleplayers on alternate days. They received training prior to the experiment and were given brief practice sessions before many of the sessions with subjects. In addition, the roleplayers were given scripts for each session, along with general instructions.

The roleplayers were instructed to start each episode in a "frozen" position. This procedure was utilized to guard against multiple behaviors being exhibited during an episode. The roleplayers were told to
be dramatic but careful when the script called for them to engage in physical aggression. They were also told how to respond if the script called for noncompliance. In this case, they were instructed to passively wait for the roleplayer to physically guide them to respond. Finally, they were told to take any rewards that the trainees offered them during an episode.

Independent Variable

The independent variable presented to the trainees in this experiment consisted of a set of rules for identifying and then consequating three general types of child behavior: appropriate, inappropriate, and unacceptable. Unacceptable behavior included behavior that was: (a) noncompliant; (b) physically dangerous; (c) destructive of property; or (d) so harmful to others that it could not be ignored. Inappropriate behavior included all behavior that was unpleasant (or harmful) to others but could be ignored. Appropriate behavior included all other behaviors not defined as inappropriate or unacceptable. The class of behavior defined as appropriate was, therefore, large and included behaviors such as compliance with instructions as well as any behaviors not defined as inappropriate or unacceptable. The trainees were also given short lists of examples in order to aid them in learning to recognize new examples of the three categories of behavior.

The rules given to the trainees further specified that appropriate behavior should be followed by reinforcement, inappropriate behavior followed by no reinforcement, and unacceptable behavior followed by punishment. The rules specified critical attributes of correct
consequation within five categories of the adult's consequence: (a) vocalization; (b) eye contact; (c) facial expression; (d) physical contact; and (e) backup. See Table 1 in order to compare the rules for consequating the three types of behavior.

The rules were designed so that, if followed, the trainees would present consequences that would typically function to strengthen appropriate behaviors and to weaken inappropriate and unacceptable behaviors. Even though presentation of vocalizations, eye contact, facial expression, and physical contact might not initially function for each child as effective consequent stimuli, by pairing those stimuli with appropriate backup stimulus events, the stimuli should come to acquire some control over the child's behavior.

One of the basic premises on which the rules were based was that "positive" attention (e.g., "I like the way you combed your hair!") eye contact, smiles, and pats on the back) either already was or should become a conditioned reinforcer for the child. Therefore, the rules were arranged so that these stimuli were to be consistently presented along with a backup reinforcer. If these stimuli were not initially conditioned reinforcers for the child, then the consistent pairing of these stimuli with backup reinforcers should condition these stimuli as conditioned reinforcers. If the stimuli were already functioning as conditioned reinforcers for the child, then arranging for them to be presented along with a backup reinforcer should increase the strength of the total reinforcing consequence.

Likewise, another premise on which the rules were based was that "negative" attention (e.g., "No hitting!") brief eye contact, and
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<td>Appropriate</td>
<td>Inappropriate</td>
<td>Unacceptable</td>
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<tr>
<td>Vocalization</td>
<td>Immediate</td>
<td>None</td>
<td>Immediate</td>
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<tr>
<td></td>
<td>(within 1 second)</td>
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<td>(within 1 second)</td>
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<td></td>
<td>Descriptive praise</td>
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<td>Descriptive reprimand</td>
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<td>No smile or frown</td>
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<td>Physical Contact</td>
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<td>Immediate reward</td>
<td>None</td>
<td>Immediate punishment</td>
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<td>(within 3 seconds)</td>
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abrupt physical contact) either already was or should come to func-
tion as conditioned punishment for the child's behavior. Pairing
these stimuli with a backup punisher should enhance the stimuli's
ability to function as conditioned punishment or enhance the strength
of the total punishing consequence.

Finally, the rules were also based on the premise that "neutral"
attention from an adult tends to be a reinforcer for most children's
behavior. For this reason, the rules specified that inappropriate
behavior is not to be followed by any attention and also specified
certain limitations on the amount of attention that should be a part
of the consequence that follows unacceptable behavior (i.e., limita-
tions on the amount of adult vocal-verbal behavior and on the amount
of adult eye contact).

Included with the rules were examples of correct and incorrect
adult consequences. These examples and nonexamples were designed to
illustrate, for the trainees, the critical attributes of correct con-
seuqation for each of the three types of child behavior. Also included
with the rules was a short list of additional instructions. See
Appendix A for the complete set of rules given to the trainees.

Following the baseline phase for each group, the set of rules was
presented to them; and the trainees were asked to read and study the
rules during the total 1-hour block. During the next 1-hour block, the
trainees reviewed the rules and were free to ask questions about the
rules; then, they took a written test over the rules; and finally,
they were returned to the roleplay sessions. By the beginning of the
fourth session after initial introduction of the rules, each trainee
had passed a retest at 100% correct, demonstrating that each had memorized the rules. In order to further assist the trainees in understanding application of the rules, a set of positive and negative examples was developed and presented to them immediately before Session 23. Immediately before Session 31, the trainees were given several additional written instructions which exhorted them to follow key rules. Immediately before Session 32, they were also tested as to their ability to identify written descriptors of positive and negative examples (similar to those that appear in the supplementary instructions). All trainees passed this test at 100% correct before Session 32 began. A copy of the complete written test can be found in Appendix B. No written rules were present during the follow-up sessions.

Dependent Variable

The set of rules given to the subjects also served as the scoring rules for the data collector(s). After each of the nine episodes in a session, the data collector(s) scored the type of "child" behavior as well as the correctness of the trainee's consequation within each of the five categories: vocalization, eye contact, facial expression, physical contact, and backup. (See Sample Data Sheet, Appendix C.) Data collection during each session generated an overall percentage correct consequation score as well as component scores for correct consequation within each of the five categories of the adult's response following appropriate, inappropriate, or unacceptable "child" behavior. Fifteen component skills could, therefore, be measured for each trainee (e.g., "v+" = vocalization after appropriate "child" behavior; "v-" =
vocalization after unacceptable "child" behavior; "vo" = vocalization after inappropriate "child" behavior, etc.).

Reliability

Three individuals who were naive to the changes in experimental conditions served as data collectors. Prior to the experiment, all were tested on their knowledge of the written rules and then received several hours of training utilizing a videotape training package (Cowart, 1980) designed to teach trainees to accurately identify the three classes of "child" behavior and the correct consequences within the five categories of the adult's response. Two observers independently recorded data from the pretest and from 8 of the 38 daily group sessions in this experiment. If all trainees were present, each of the daily group sessions could contain scores of eight trainees divided into two subgroups of four trainees each. Including the pretest, 264 individual trainee sessions were conducted. Sixty-two of these sessions were reliability sessions. An agreement was scored each time the two observers both scored a category as correct or incorrect. Agreements were divided by agreements plus disagreements and multiplied by 100.

An overall reliability score for each trainee's behavior management skill was calculated by combining the trainee's scores for correct consequence in all five categories (vocalization, eye contact, facial expression, physical contact, and backup) across all nine episodes of the session into one general category. The range of the individual trainee session reliability was 71% to 100%, with a mean of 88%. These
individual reliability scores were then averaged to produce group reliability scores. The range for the daily group sessions reliability for Group 1 was 83\% to 96\%, with a mean of 91\%. Group 2's reliabilities ranged from 83\% to 91\%, with a mean of 88\%. The range of the individual trainee sessions' reliability for ratings of "child" behavior was 78\% to 100\%, with a mean of 96\%. The range for Group 1's ratings of "child" behavior was 86\% to 100\%, with a mean of 97\%. The range for Group 2's ratings of "child" behavior was 78\% to 100\%, with a mean of 96\%.

An overall reliability score for each of the 15 components within the five categories was calculated by summing the observers' scores for each trainee's performance within each component skill in a session. This data is presented in Table 2. Since an error analysis (over each of the 15 component skills) was conducted based on the final three sessions of this experiment, component reliabilities were calculated for one of those three sessions: Session 36. The mean reliability scores for the component skills ranged from 58\% for eye contact after appropriate behavior to 100\% for seven components (i.e., all three vocalization components and also physical contact after appropriate and after inappropriate behavior as well as backup after unacceptable and inappropriate behavior).
Table 2
Interobserver Reliability Scores for 15 Component Skills of the Eight Trainees

<table>
<thead>
<tr>
<th>COMPONENT SKILLS</th>
<th>TRAINEE</th>
<th>RANGE</th>
<th>MEAN PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>v-</td>
<td>2/2</td>
<td>3/3</td>
<td>2/3</td>
</tr>
<tr>
<td>vo</td>
<td>3/3</td>
<td>3/3</td>
<td>3/3</td>
</tr>
<tr>
<td>e+</td>
<td>1/3</td>
<td>1/3</td>
<td>2/3</td>
</tr>
<tr>
<td>e-</td>
<td>2/2</td>
<td>3/3</td>
<td>2/2</td>
</tr>
<tr>
<td>eo</td>
<td>3/3</td>
<td>3/3</td>
<td>2/2</td>
</tr>
<tr>
<td>f-</td>
<td>2/2</td>
<td>3/3</td>
<td>2/2</td>
</tr>
<tr>
<td>fo</td>
<td>2/2</td>
<td>3/3</td>
<td>2/2</td>
</tr>
<tr>
<td>p-</td>
<td>2/2</td>
<td>3/3</td>
<td>1/3</td>
</tr>
<tr>
<td>po</td>
<td>3/3</td>
<td>3/3</td>
<td>2/2</td>
</tr>
<tr>
<td>b+</td>
<td>3/3</td>
<td>3/3</td>
<td>3/3</td>
</tr>
<tr>
<td>b-</td>
<td>2/2</td>
<td>2/2</td>
<td>3/3</td>
</tr>
<tr>
<td>bo</td>
<td>3/3</td>
<td>3/3</td>
<td>2/2</td>
</tr>
<tr>
<td>TOTALS</td>
<td>37/40</td>
<td>42/44</td>
<td>35/39</td>
</tr>
</tbody>
</table>

PERCENTAGES 93% 95% 90% 89% 100% 86% 93% 86%

NOTE: Each score represents the number of agreements over the number of agreements plus disagreements for each of the 15 component skills exhibited by all eight trainees.
RESULTS

As shown in Figure 1, both groups of trainees demonstrated a substantial improvement in their behavior management scores following the introduction of the written rules. Group 1's mean baseline performance was 36% correct. Its mean performance in the written rules phase was 84% correct, and its mean performance in follow-up was 93%. Group 2's mean baseline performance was 32% correct, its mean performance in the written rules phase was 74% correct, and its mean follow-up score was 82% correct.

Figures 2 and 3 illustrate that each of the trainee's mean scores under the three conditions demonstrated the same upward progression. For Group 1, the individual trainee scores were as follows: Trainee 1—32%, 83%, 91%; Trainee 2—40%, 88%, 96%; Trainee 3—38%, 89%, 94%; and Trainee 4—34%, 78%, 87%. The Group 2 individual scores followed the same pattern: Trainee 5—33%, 79%, 92%; Trainee 6—33%, 64%, 70%; Trainee 7—29%, 81%, 91%; and Trainee 8—30%, 72%, 76%.

As noted earlier, each trainee's overall behavior management score for each nine-episode session can be further subdivided into 15 component skill scores. The component skills are identified by the intersections of a matrix formed by the three types of "child" behavior (appropriate, inappropriate, and unacceptable) and the five categories of the trainee's consequences (vocalization, eye contact, facial expression, physical contact, and backup).

In order to determine which component skills the trainees had most difficulty in acquiring, an error analysis was conducted based on the
Figure 1: The Percent of Correct Behavior Management Skills for Groups 1 and 2 before and after Training and at Two-week Intervals in Follow-up. Group 1's Training Sessions Were Terminated after Session 32. Each Session Number Refers to the Same Scripted Session for Each Group.
PERCENT CORRECT BEHAVIOR MANAGEMENT SKILLS

Fig. 1

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Figure 2: The Percent of Correct Behavior Management Skills for Each of the Four Trainees in Group 1 before and after Training and at Two-week Intervals in Follow-up. Group 1's Training Sessions Were Terminated after Session 32.
Fig. 2

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Figure 3: The Percent of Correct Behavior Management Skills for Each of the Four Trainees in Group 2 before and after Training and at Two-week Intervals in Follow-up.
Fig. 3
trainees' scores for the final three sessions. Table 3 identifies the three component skills that had substantially higher error rates during these final three sessions: vocalization after unacceptable "child" behavior (44% incorrect); eye contact after appropriate "child" behavior (30% incorrect); and physical contact after appropriate "child" behavior (27% incorrect).
Table 3

The Number of Errors Made by All 8 Trainees across All 15 Component Skills during Sessions 35, 36, and 37

<table>
<thead>
<tr>
<th>COMPONENT SKILLS</th>
<th>TRAINEE 1</th>
<th>TRAINEE 2</th>
<th>TRAINEE 3</th>
<th>TRAINEE 4</th>
<th>TRAINEE 5</th>
<th>TRAINEE 6</th>
<th>TRAINEE 7</th>
<th>TRAINEE 8</th>
<th>TOTALS</th>
<th>MEAN PERCENT</th>
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<tr>
<td>v+</td>
<td>0/9</td>
<td>0/9</td>
<td>2/10</td>
<td>0/6</td>
<td>1/9</td>
<td>1/9</td>
<td>0/6</td>
<td>4/9</td>
<td>8/67</td>
<td>12%</td>
</tr>
<tr>
<td>v-</td>
<td>2/9</td>
<td>1/9</td>
<td>1/9</td>
<td>3/6</td>
<td>1/9</td>
<td>8/9</td>
<td>4/6</td>
<td>9/9</td>
<td>27/66</td>
<td>44%</td>
</tr>
<tr>
<td>vo</td>
<td>0/9</td>
<td>0/9</td>
<td>0/8</td>
<td>0/6</td>
<td>0/9</td>
<td>1/9</td>
<td>1/6</td>
<td>1/9</td>
<td>3/65</td>
<td>5%</td>
</tr>
<tr>
<td>e+</td>
<td>5/9</td>
<td>5/9</td>
<td>2/10</td>
<td>2/6</td>
<td>1/9</td>
<td>2/9</td>
<td>1/6</td>
<td>2/9</td>
<td>20/67</td>
<td>30%</td>
</tr>
<tr>
<td>e-</td>
<td>1/8</td>
<td>0/9</td>
<td>1/9</td>
<td>1/6</td>
<td>1/9</td>
<td>5/9</td>
<td>0/6</td>
<td>0/9</td>
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<td>14%</td>
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<td>0/6</td>
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<td>2/8</td>
<td>2/64</td>
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<td>0/10</td>
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<td>1/9</td>
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<td>0/6</td>
<td>2/9</td>
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<td>7%</td>
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<td>0/6</td>
<td>0/9</td>
<td>3/9</td>
<td>0/6</td>
<td>0/9</td>
<td>4/65</td>
<td>6%</td>
</tr>
<tr>
<td>fo</td>
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<td>0/8</td>
<td>0/6</td>
<td>0/9</td>
<td>1/9</td>
<td>1/6</td>
<td>0/9</td>
<td>3/66</td>
<td>5%</td>
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<tr>
<td>p+</td>
<td>1/9</td>
<td>0/9</td>
<td>0/10</td>
<td>6/6</td>
<td>2/8</td>
<td>6/9</td>
<td>0/6</td>
<td>3/6</td>
<td>18/66</td>
<td>27%</td>
</tr>
<tr>
<td>p-</td>
<td>1/9</td>
<td>0/9</td>
<td>3/9</td>
<td>0/6</td>
<td>2/9</td>
<td>3/9</td>
<td>1/6</td>
<td>2/9</td>
<td>12/66</td>
<td>18%</td>
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<tr>
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<td>0/6</td>
<td>0/9</td>
<td>0/9</td>
<td>0/6</td>
<td>0/9</td>
<td>0/65</td>
<td>0%</td>
</tr>
<tr>
<td>b+</td>
<td>0/9</td>
<td>0/9</td>
<td>0/10</td>
<td>0/6</td>
<td>1/9</td>
<td>4/9</td>
<td>0/6</td>
<td>1/9</td>
<td>6/67</td>
<td>9%</td>
</tr>
<tr>
<td>b-</td>
<td>0/9</td>
<td>0/9</td>
<td>0/9</td>
<td>0/6</td>
<td>1/9</td>
<td>5/9</td>
<td>0/6</td>
<td>6/9</td>
<td>12/66</td>
<td>18%</td>
</tr>
<tr>
<td>bo</td>
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<td>0/9</td>
<td>0/8</td>
<td>0/6</td>
<td>0/9</td>
<td>0/9</td>
<td>0/6</td>
<td>0/9</td>
<td>0/65</td>
<td>0%</td>
</tr>
</tbody>
</table>

PERCENTAGES 9% 4% 7% 13% 8% 30% 9% 24%

NOTE: Each score represents the sum of the errors made over the sum of the errors plus correct responses in the three sessions. There were typically three opportunities to exhibit a component skill in each session.
DISCUSSION

The error analysis of Sessions 35, 36, and 37 reported earlier identified three primary problem areas: vocalization after unacceptable behavior and eye contact and physical contact after appropriate behavior. It is unclear why trainees had so much difficulty in giving a timely descriptive reprimand after unacceptable behavior. It may be that this type of "child" behavior, since it is by nature probably more aversive to the trainees, temporarily disrupted their vocal-verbal performance. Eye contact after appropriate behavior was also a difficult area for several trainees. However, close observation during the sessions revealed that most of these errors occurred not because of a failure to make eye contact but because the trainees did not hold eye contact for the full 3 seconds or more. It is unlikely that this type of eye contact error is an important error. Physical contact after appropriate behavior also produced a relatively high error rate. Most of the errors in this component skill were made by two trainees. It may be that for these two trainees making positive physical contact (e.g., hugging, patting on back, etc.) was not a behavior at strength in their pretraining repertoires and, thus, could not be produced on demand by rules. Alternatively, these two trainees' conditioning histories may have made it more difficult for them to make positive physical contact with an adult roleplayer than with a child.

As noted in the Introduction, the large increase in trainee performance that followed introduction of the written rules prompted a change in plans. The overall purpose of this research was to identify
and evaluate methods of training that would be economical and effective. Since written rules alone produced such a large increase in behavior management skills, there seemed little reason to go on with the planned comparisons of two methods of videotape training: discrimination training and modeling. Instead, the decision was made to further evaluate the effect of written rules alone. However, the results of Experiment I, while hopeful, still left several unanswered questions.
EXPERIMENT II

INTRODUCTION

The results of Experiment I showed that after the introduction of written rules, trainees could improve their performance of certain behavior management skills as tested in a simulation of a real life situation (i.e., when they were placed with a roleplayer under controlled conditions). However, several questions remained to be answered:

1. Would trainees be able to demonstrate comparable skills when they were faced with an actual child who exhibited high rates of inappropriate and unacceptable behavior?

2. Would the trainee's use of behavior management skills result in an improvement of the child's behavior?

In order for the trainees to successfully manage the behavior of children who exhibit behavior problems, the trainees would have to deal with behavior that is continuously occurring throughout a session and that can quickly shift from appropriate to unacceptable or inappropriate and back again within a few seconds. Since the training materials in Experiment I did not teach a specific punishment technique (with the exception of verbal reprimands and contingent removal of tokens or edibles), a new section was added to the training materials. The new section described the use of a brief exclusive time-out procedure where the child is placed in a chair facing the wall.

The training materials used in Experiment I served as the basis for the revised materials used in Experiment II. In the first experiment, there was little teaching technology used in training the
trainees. Instead, the trainees were simply given the written rules to study and then were repeatedly tested until they had mastered the rules. Before Experiment II began, the rules were used as the basis for development of a programmed text which was designed to teach memorization of the rules and application of the rules to written examples.

The design of the manual used in Experiment II was based on a variety of sources. Objectives were defined (Mager, 1961), and a domain theory (a set of statements that describe the premises and major rules for the unique subject matter to be taught) was established (Gilbert, 1962). Rules were taught as verbal chains similar to how one teaches memorization of a poem (Skinner, 1958). Concepts were identified and arranged in hierarchies (Tiemann & Markle, 1978; Englemann, 1969). Divergent examples of each concept were identified, and then minimally negative examples were matched to each example (Tennyson & Boutwell, 1974; Merrill & Tennyson, 1977). Four choice test frames were utilized to test rule application to different examples and negative examples (Espich & Williams, 1968).

In designing the manual, two revisions were made in the content of the rules used in Experiment I:

1. Trainees were instructed to make eye contact after appropriate child behavior, but no restriction was placed on the length of time for maintaining eye contact.

2. The use of full physical guidance to require compliance with an instruction was taught as a backup rule rather than a physical contact rule.
METHOD

Subjects and Setting

Three part-time staff of Croyden Avenue School were selected as subjects. Prior to their selection, these staff were pretested on their behavior management skills by placing them in a roleplay situation as described in Experiment I. Trainee 1 scored 52% correct, Trainee 2 scored 50% correct, and Trainee 3 scored 32% correct. All three trainees were women in their twenties. Trainee 1 had taken numerous undergraduate courses, Trainee 2 had taken several undergraduate courses, and Trainee 3 was a high school graduate. None of the three had taken courses in behavior modification. Three students who had been previously classified as severely mentally impaired (with IQ scores below 30) were also selected as subjects. The students were ambulatory and quite active and were selected after interviews with their teachers revealed that they exhibited high rates of inappropriate/unacceptable behaviors. During the interviews, the Behavior Category Worksheet shown in Appendix D was used to identify and classify student behavior. The parents of the three students as well as the three trainees all gave their informed consent prior to initiation of the study. Child 1 and 2 were males, aged 13 and 12; Child 3 was a female, aged 6.

All sessions were conducted in a 9' x 9' office at Croyden Avenue School. The office contained a desk, a cabinet, and three chairs. Two of the chairs were positioned facing each other. The third chair
was placed nearby facing the wall.

Procedures

Experimental Design

Sessions were scheduled to occur two to three times per week so as not to interfere with the staff members' work schedule. A multiple baseline across subjects (trainees) design was utilized (Baer, Wolf, & Risley, 1968). Each trainee received a differing number of baseline sessions before the independent variable (the training manual) was introduced.

Instructions to Subjects

Before the first session began, the experimenter gave the trainees general instructions. The trainees were told that during each 10- to 15-minute session they would be responsible for managing the behavior of a child who often exhibited behavior problems. They were told that they had no specific task to work on during the session but rather were responsible for managing the child's behavior. The trainees were told that a box of small toys would be present. They were instructed that they would have small food treats which they could use as rewards, and they were also instructed that the room would contain an extra chair facing the wall which they could use to place the child if misbehavior occurred. They were told that the experimenter would videotape each session from the doorway using a portable videotape recorder. Finally, they were told that a list of instructions would be posted, in view,
and that the experimenter would start a tape recorder at the beginning of the session. The tape recorder would then signal them, once a minute, to give the child the next instruction on the list.

Control of Sessions

Prior to the experiment, the students' teachers were interviewed; and lists of instructions that the student had demonstrated he or she could follow were identified. Five such instructions were selected for each student. Typical instructions were "Stand up," "Sit down," "Touch your head," "Clap," etc. The instructions were numbered, and the five instructions were repeated on the list three times to result in a list of 15 numbered instructions. The list was posted near the trainee's chair. The audio tape signalled the appropriate time for the trainee to give the instruction.

The students' teachers also identified likely reinforcers for each student. Student 1's potential reinforcer was sugared cereal. Student 2's potential reinforcer was raisins, and Student 3's potential reinforcer(s) was bread and water. These items were placed within reach of the trainees before the session began.

During each session, the trainee could interact frequently or infrequently with the student; but the trainee had to, at minimum, interact by giving the student instructions at the rate of one per minute. This control method was utilized to ensure that at least a minimal amount of interaction occurred in each session.
Independent Variable

The independent variable utilized in this experiment was the presentation of a programmed instruction manual designed to teach basic behavior management skills. The manual was divided into 9 units and contained 172 response items. The Table of Contents is reproduced below:

Unit 1: Behavior
Unit 2: Antecedents and Consequences
Unit 3: Three Types of Consequences
Unit 4: Correct Consequences for Appropriate Behavior
Unit 5: Correct Consequences for Inappropriate Behavior
Unit 6: Correct Consequences for Unacceptable Behavior
Unit 7: The Time-out Chair Backup Punishment
Unit 8: How Often Should You Reinforce Appropriate Behavior?
Unit 9: The Comprehensive Contingency Chart

The first nine frames from Unit 6 of the manual, "Correct Consequences for Unacceptable Behavior," are reproduced in Appendix E. Each frame in the manual appeared on a separate page. If the frame contained a question, then the trainee was to record his/her answer in an answer booklet, and then turn to the next page in the manual. The correct answer to each question was presented at the top of the next page of text. The excerpt presented in Appendix E illustrates the general method of frame construction used throughout the manual to teach rule memorization and rule application to different examples.

In addition, after studying the last unit of the manual which deals with Comprehensive Contingency Charts (CCC), each trainee was given a chart which was prepared after interviewing the students'
teachers in order to specify typical child behaviors that the three students emitted. Selected behaviors from the appropriate, inappropriate, and unacceptable categories were listed in the CCC, followed by a brief description of the correct consequence to be provided. The CCC was based on the manual and was designed to provide a quick summary of all major contingencies planned for the three children's behavior. A copy of the CCC used in this experiment can be found in Appendix F.

After each trainee's baseline phase was completed, the trainee was given a written pretest and then was scheduled to work through the manual under supervision. Following completion of the manual, each trainee was given a written posttest and then given the Comprehensive Contingency Chart to study. Each trainee was then returned to the sessions. The experimenter answered any questions the trainees had about the rules and gave each trainee an oral quiz regarding the content of the CCC prior to the third session after training began. The CCC was posted in the training room throughout the course of training. No feedback, modeling, or roleplay training occurred; and after the third training session, the experimenter did not answer any further questions about the rules.

Dependent Variables

The set of data collection rules used in Experiment I was altered slightly (by removal of the time requirement for eye contact after appropriate behavior and the movement of physical guidance after noncompliance from the physical contact category to the backup category)
and then modified for use in the less structured environment required in Experiment II. These modifications to the scoring rules transformed the trial-by-trial data collection system used in Experiment I into a 15-second interval system. The data collectors were instructed to score adult consequation of the worst behavior class (appropriate, inappropriate, or unacceptable) that occurred within the first 10 seconds of the 15-second interval. If the behavior class worsened (i.e., appropriate to inappropriate or unacceptable to inappropriate to unacceptable) in the period between 10 seconds and 15 seconds, then they were instructed to record that new behavior class above the child behavior column for that 15-second interval. (See Appendix G for the complete set of revised scoring rules used in Experiment II.)

Each session was videotaped for later viewing by the data collectors. Each data collector independently scored the type of child behavior and the correctness of the trainee's consequation within each of the five categories: vocalization, eye contact, facial expression, physical contact, and backup. Data collected from each session generated a percentage of intervals score for appropriate, inappropriate, and unacceptable child behavior as well as a percentage correct consequation score for the trainee.

In addition, the trainees' scores on a written pre/posttest represented another measure of their understanding of the rules. The test was the same one utilized in Experiment I.

Reliability

Two observers independently recorded the data from 6 of the 26
sessions in this experiment. The observers were not told of changes in experimental conditions and were shown some videotaped sessions out of sequence in order to control for observer bias. In addition, two intraobserver reliability checks were made over two of these six sessions by arranging for the same observer to score the same tapes on different days. An overall reliability score was calculated for observers' rating of child behavior. An agreement was scored when both observers scored the child behavior the same; a disagreement was scored each time the observers' ratings of child behavior did not match. Agreements were divided by agreements plus disagreements and multiplied by 100.

The mean overall interobserver reliability for ratings of child behavior in each 15-second interval was 82%, with a range of 75% to 86%. The mean overall intraobserver reliability for child behavior was 83%, with a range of 82% to 84%.

An overall reliability score for correct consequation was calculated for observers scoring of the trainees' consequation by collapsing the trainees' scores in all five categories into one general category. The mean overall interobserver reliability was 89%, with a range of 85% to 95%. The mean overall intraobserver reliability score was 94%, with a range of 93% to 94%.

During the interobserver reliability sessions, data was collected in a two-step process. First, the observers viewed the tape and only scored the child behavior. The reliability observers' ratings of child behavior were then used in the second viewing of the tape when both observers scored the trainees' consequation. This two-step method ensured that the data on trainees' consequation would not be lost if
the observers did not initially agree as to the type of child behavior. The intraobserver reliability sessions also served as a check on the reliability of the two-step data collection method versus the usual one-step data collection method.
RESULTS

Trainee 1 correctly answered 97% of the 172 items in the manual and completed the manual in 1 hour, 45 minutes. Trainee 2 correctly answered 88% of the 172 items and took 6 hours to complete the manual. Trainee 3 correctly answered 95% of the items and took 2 hours to complete the manual. The written pretest scores for Trainees 1, 2, and 3 were 45%, 13%, and 16%. The written posttest scores were 97%, 84%, and 83%.

Figure 4 shows that all three trainees' behavior management skills improved after completing the manual. Trainee 1's mean behavior management score for baseline was 54% and for training 83%. Trainee 2's mean scores for the two conditions were 23% and 70%. Trainee 3's mean scores were 31% and 49%. The trainees' scores improved during the training condition. The trainees' mean scores for the last two sessions of the training condition were: Trainee 1, 96%; Trainee 2, 72%; and Trainee 3, 60%.

Figure 4 also shows that the children, who were assigned to the trainees, exhibited less unacceptable behavior after the trainees were trained. Child 1's mean baseline score for unacceptable behavior (the percentage of intervals in which unacceptable behavior occurred) was 44%. Child 1's mean score for unacceptable behavior after training was 24%. Child 2's mean scores for unacceptable behavior in baseline and training were 62% and 32%. Child 3's mean scores for unacceptable behavior in the two conditions were 50% and 37%.

Data were collected on the number of intervals where inappropriate
Figure 4: The Percent of Correct Behavior Management Skills for Three Trainees ($T_1$, $T_2$, and $T_3$) and the Percent of Intervals of Unacceptable Behavior for Three Children ($C_1$, $C_2$, and $C_3$) before and after Training.
PERCENT CORRECT BEHAVIOR MANAGEMENT SKILLS

PERCENT OF 15 SECOND INTERVALS SCORED AS UNACCEPTABLE BEHAVIOR

SESSIONS

Fig. 4

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behavior was the worst behavior class scored in the interval and also on the number of intervals where appropriate behavior was the only behavior scored in the interval. Data were also collected on the number of intervals where the child was in the time-out chair for at least a part of the interval. Table 4 presents the mean data on child behavior and time-out use before and after training.

Table 4

The Mean Percent of 15-second Intervals Scored as Appropriate, Inappropriate, or Unacceptable Child Behavior and the Mean Percent of 15-second Intervals where Time-out Was Scored as Occurring for Three Trainee/Child Pairs, before and after Training

<table>
<thead>
<tr>
<th>Scores</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trainee 1 and Child 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Appropriate Behavior</td>
<td>8%</td>
<td>33%</td>
</tr>
<tr>
<td>Mean Inappropriate Behavior</td>
<td>49%</td>
<td>43%</td>
</tr>
<tr>
<td>Mean Unacceptable Behavior</td>
<td>44%</td>
<td>24%</td>
</tr>
<tr>
<td>Mean Time-out Use</td>
<td>0%</td>
<td>24%</td>
</tr>
<tr>
<td><strong>Trainee 2 and Child 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Appropriate Behavior</td>
<td>13%</td>
<td>20%</td>
</tr>
<tr>
<td>Mean Inappropriate Behavior</td>
<td>25%</td>
<td>48%</td>
</tr>
<tr>
<td>Mean Unacceptable Behavior</td>
<td>62%</td>
<td>32%</td>
</tr>
<tr>
<td>Mean Time-out Use</td>
<td>0%</td>
<td>63%</td>
</tr>
<tr>
<td><strong>Trainee 3 and Child 3</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean Appropriate Behavior</td>
<td>23%</td>
<td>16%</td>
</tr>
<tr>
<td>Mean Inappropriate Behavior</td>
<td>28%</td>
<td>46%</td>
</tr>
<tr>
<td>Mean Unacceptable Behavior</td>
<td>50%</td>
<td>37%</td>
</tr>
<tr>
<td>Mean Time-out Use</td>
<td>46%</td>
<td>43%</td>
</tr>
</tbody>
</table>

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The skill with which the three trainees consequated the "child's" appropriate, inappropriate, and unacceptable behavior in the roleplay pretest can be compared to the skill they exhibited during baseline sessions with an actual child. Trainee 1's scores for these three skills in the roleplay pretest were 70%, 47%, and 33%. Her corresponding mean skill scores for the first two baseline sessions were 78%, 60%, and 37%. Trainee 2's skills at consequating appropriate, inappropriate, and unacceptable behavior in the roleplay pretest were 40%, 67%, and 47%. Her corresponding mean skill scores for the first two baseline sessions were 71%, 23%, and 14%. Trainee 3's skill scores in the roleplay pretest were 45%, 40%, and 32%. There were no opportunities to score her consequation of appropriate behavior in the first two baseline sessions, but her mean scores for consequation of inappropriate and unacceptable behavior were 49% and 18%.
DISCUSSION

The results of this experiment indicate that trainees' performance of behavior management skills with children who engage in high rates of behavior problems did improve as a result of the introduction of the written rules (presented in a programmed instruction manual). The results also indicate that the children's unacceptable behavior decreased once the trainees had mastered the written rules.

The effects on the two other classes of child behavior measured were not as clear. For Child 1, the percent of intervals scored as appropriate increased after the introduction of the written rules. The other two children's scores for appropriate behavior showed little change. The percent of intervals scored as inappropriate for Children 2 and 3 increased (after the introduction of the written rules) and decreased for Child 1. Therefore, the only clear cut and consistent effect across all three children's behavior was the reduction in their unacceptable behavior.

Informal observations by the experimenter suggest that for Child 3 the potential reinforcers used in the sessions did not function as reinforcement. In fact, during many occasions when Trainee 3 presented the water or bread to the child, she did not even take it. In addition, it proved physically difficult for Trainee 3 to place the child in the time-out chair and keep her there for the required time. These two factors probably resulted in less improvement in Child 3's behavior and more difficulty for Trainee 3.

Additional observations by the experimenter during the sessions
revealed several consistent errors. For example, Trainees 2 and 3 did not consistently provide physical guidance following their child's non-compliance. Trainee 2 frequently delivered reinforcement at the end of the time-out in chair sequence if the child had sat appropriately in the chair. Trainee 3 did not consistently ignore the child's behavior when the child was in the time-out chair. These errors prevented these trainees from achieving higher behavior management scores after training. Trainee 1 asked immediately following the first session after training if she was "really supposed to put him (the child) in time-out for putting his hand in his mouth (biting)." She was told, "Yes"; and in the next session, she did consistently place the child in the time-out chair when hand biting occurred. This factor probably accounted for much of the differences in her behavior management scores from the first to the second session after training.
CHAPTER III

GENERAL DISCUSSION

The results of experiments by Gardner (1972) and Sepler and Myers (1978) suggested that the role of verbal instruction was minimal in producing improvement in the performance of hands-on behavior modification skills. However, the results of the two experiments reported here suggest that verbal instruction can have a strong, facilitative effect on general behavior modification performance skills as suggested by Heifetz (1977). Experiment I showed that two groups of trainees could more than double their behavior management scores after the written rules were introduced and mastered by the trainees. No feedback, roleplaying, or other hands-on training was provided to the trainees. Experiment II showed that three trainees whose skills were measured in sessions, with children who had high rates of behavior problems, could substantially improve their percentage correct behavior management scores after the introduction and mastery of the written rules. Experiment II further showed that there were positive effects of the children's percentage of intervals of unacceptable behavior. As in Experiment I, no hands-on training was provided to the trainees.

How do rules facilitate actual performance? Skinner (1969) stated that rules were verbal stimuli where one part of the rule specified relevant antecedent stimuli, one part specified the behavior(s) to be emitted, and one part specified the consequence. The rules used in these two experiments specified relevant antecedent stimuli and also the relevant behaviors to be emitted. The consequence was not stated,
but the trainees likely saw demonstrated competence in the set of behavior management skills taught as a consequence for correct rule-following.

Rules can be seen as a method of transferring or expanding stimulus control over responses that are already in the individual's repertoire to new stimuli. In these two experiments, it is quite likely that most, if not all, of the behaviors that make up the set of behavior management skills were already in the trainees' repertoires. For example, all trainees had probably emitted vocal-verbal behavior in the past of the form, "No hitting," "No biting," etc., and "Very good! You touched your head," etc. Likewise, all trainees had likely made eye contact, smiled, and given treats to others in the past. All trainees had probably refrained from eye contact and talking to others as well. Almost all the behaviors were probably in their repertoires before training. In addition, the behaviors were likely already under verbal control (i.e., if asked to, the trainees could smile, say "Good work," etc.). However, what was lacking was precise and appropriate stimulus control over when the behaviors were to occur. The rules taught during training thus served to transfer or extend stimulus control over these behaviors to the antecedent stimuli specified in the rules. For example, when the child emits appropriate behavior, immediately give descriptive, enthusiastic praise, make eye contact, smile, touch the child, and immediately give a backup treat.

A component analysis of the data from Experiment I revealed that several of the trainees consistently did not provide pleasant physical contact after appropriate child behavior even after the rules were
presented. It may be that these two trainees did not have the relevant behaviors in their pretraining repertoires (patting someone on the back or shoulder).

After Experiment I and II were completed, the trainees were asked to respond to a questionnaire which required them to describe when and if they invoked the rules during the sessions. All 11 trainees reported that they visualized the rules at least some of the time either before each episode in the session or immediately after the roleplayer emitted the behavior that was to be consequated. In addition, five reported they always knew when their behavior matched the rule and was correct; and six reported that they sometimes knew.

It seems likely that when the rules were invoked, they served to transfer or extend stimulus control over the relevant behavior management behaviors. In addition, all trainees reported that they, at least sometimes, realized when they had accurately followed a rule or when they had not. Most trainees reported that they were pleased or displeased with their episode-by-episode performance based on their perceived accuracy in following the rules. It seems likely that the degree of perceived match between their actual performance and the performance specified in the rules could serve as an effective consequence. Each trainee's performance did improve during the course of the written rules phase. Perhaps the hypothesized consequences described above served to differentially reinforce and punish their correct and incorrect behavior management performance.

Another aspect of these experiments seems worthy of note. The roleplay pretest scores of the three trainees in Experiment II in
several cases closely paralleled their scores when they were placed with children. These data suggest that it may be possible to accurately assess a trainee's behavior management skills by arranging a roleplay assessment session. One weakness of the reported roleplay assessments was that the trainee was only faced with one behavior during each episode. If a roleplay session could be arranged so that multiple "child" behaviors were scheduled to occur in each episode, then the trainees' scores would probably be a more accurate representation of their skill with real children. Increasing the number of episodes in the assessment session would probably also contribute to a more accurate assessment. A major advantage of using roleplay sessions to assess behavior management skills is that a wide range of "child" behavior can be arranged to occur under controlled conditions in a relatively short session. The data from such sessions could be used to pinpoint specific skill deficiencies for remediation. If this course of action proved fruitful, then other skill areas (e.g., interviewing skills) could be assessed in a similar manner.

The results of these two experiments seem promising. It seems that behavior management skills can be greatly improved with an intervention as inexpensive as providing trainees with a set of rules that are general enough to cover the domain but specific in that they identify in detail the behavior to be emitted. As noted in the Introduction, there are large numbers of individuals who could benefit from training in behavior management skills. However, costly and labor intensive methods of training can probably never be made available to most of those individuals. Written rules can be developed and used when
training these individuals. If possible, the rules can be taught through methods that are based on programmed instruction and concept learning. In any case, appropriate rules, when mastered, do seem capable of improving performance.

Although all trainees' performance improved after the introduction of the rules, several trainees' performance was not proficient at the end of the study. These data suggest that written rules might be seen as a first and important step in training. After the rules were introduced, trainees' performance could be assessed; and those who were deficient in one or more component skill areas could be singled out for training on those component skills, using feedback or roleplay with feedback. This method of training would limit the expensive and labor intensive types of training to only those trainees and targeted skills that required them.

Further research is needed to replicate the results found here and to expand the results to other skill areas. In addition, further research is needed to validate the effectiveness of these training methods with large groups of trainees who are deficit in behavior management skills. However, at this point, the data from these two experiments strongly suggest that written rules can facilitate the acquisition of general behavior modification performance skills as demonstrated across multiple child behaviors.
APPENDIX A

EXPERIMENT I RULES: BEHAVIOR MANAGEMENT TRAINING

Introduction

These instructions are designed to teach you how to recognize three types of child behavior and how to correctly consequate each type. At the end of each episode, the type of child behavior as well as all five categories of adult behavior will be scored by the data collectors. A category will be scored as correct ("+"") only if all criteria within the category are attained during the entire episode. For example, in scoring facial expression (after an appropriate [+]) child behavior), if the adult smiles, then 5" later frowns, facial expression will be scored as incorrect ("-") for that episode.

Presented below are the three general types of child behavior and the three general consequences that should follow those behaviors:

<table>
<thead>
<tr>
<th>Child Behavior</th>
<th>Adult Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>(+) appropriate</td>
<td>reinforcement</td>
</tr>
<tr>
<td>(o) inappropriate</td>
<td>no reinforcement</td>
</tr>
<tr>
<td>(-) unacceptable</td>
<td>punishment</td>
</tr>
</tbody>
</table>

Appropriate Child Behavior (+)

For a child, appropriate behavior includes behavior that is helpful to others or the child as well as behaviors that are not unacceptable or inappropriate.

Example: Mom tells Tommy to close the door. He closes the door.
Example: Barry is working at his desk.
Example: Sally draws a picture during art class.
Example: Cindy closes the door within 5" of Mom's instructions.
Example: Molly sits in a chair after a hard ball game.

Non-example: Tommy whines for a toy.
Non-example: Mike stares out the window during music class.
Non-example: Mary takes Susie's toy.
Adult Consequence following Appropriate Behavior

I. Vocalization.
   A. Scored "+' if vocalization is:
      1. Descriptive praise without criticism.
      2. Enthusiastic (no monotone; volume above other adult vocals in the episode).
      3. Immediate (vocal behavior should occur within 1" of termination of behavior or during behavior if behavior is ongoing).
   B. Scored "-" if any of the above rules are violated.

II. Eye contact (looking at face).
   A. Scored "+' if 3" or more of eye contact occurs.
   B. Scored "-" if less than 3" eye contact occurs.

III. Facial expression.
   A. Scored "+' if smile occurs (no frown).
   B. Scored "-" if no smile occurs or if frown occurs.

IV. Physical contact.
   A. Scored "+' if only pleasant physical contact occurs.
   B. Scored "-" if any unpleasant physical contact occurs.
   C. Scored "-" if no physical contact occurs.

V. Backup.
   A. Scored "+' if listed backup is presented within 3" of termination of behavior or during behavior.
   B. Scored "-" if listed backup is presented more than 3" after termination.
   C. Scored "-" if no listed backup is presented.

Inappropriate Child Behavior (o)

For a child, inappropriate behavior is that behavior that is mildly unpleasant to others but can be ignored. Inappropriate behavior is not "good," but it is not as "bad" as unacceptable behavior.

Example: Ellen drops pieces of paper (nonbreakable items) on the floor.
Example: Tommy is whining.
Example: Sonny is picking his nose.
Example: During math time, Tim is looking out the window.
Example: During task time, Sally looks around the room.

Non-example: Tommy throws a dish.
Non-example: Sonny is sitting in a chair.
Non-example: Johnny refuses to come in when called.
Adult Consequence following Inappropriate Child Behavior

I. Vocalization.
   A. Scored "+" if none occurs.
   B. Scored "-" if any vocalization occurs (including sighs, hisses, squeals, etc.).

II. Eye contact (looking at face).
   A. Scored "+" if none occurs.
   B. Scored "-" if any eye contact occurs.

III. Facial expression.
    A. Scored "+" if no change in facial expression occurs (e.g., no smile or frown occurs).
    B. Scored "-" if change occurs (e.g., smile or frown occurs).

IV. Physical contact.
   A. Scored "+" if no physical contact occurs.
   B. Scored "-" if any physical contact occurs.

V. Backup.
   A. Scored "+" if no listed backup is presented.
   B. Scored "-" if any listed backup is presented.

Unacceptable Child Behavior (-)

For a child, unacceptable behavior is that behavior that is:

1. Dangerous to the child or others.
2. Destructive of property.
3. Harmful to others.
4. Noncompliant (when a child does not begin to follow an adult's understandable instructions within 5" of the instruction).

NOTE: Behavior that is simply annoying is not unacceptable.

Example: Running into a busy street.
Example: Throwing rocks at a window.
Example: Screaming while baby is sleeping.

Non-example: Running in back yard.
Non-example: Coming in when called but complaining.
Non-example: Screaming when a run scores at a baseball game.
Adult Consequence following Unacceptable Behavior

I. Vocalization.
   A. Scored "+" if vocalization is:
      1. Descriptive of misbehavior (or correct behavior without personal derogatory statements).
      2. Immediate (vocal should occur within 1" or less of termination of behavior or during behavior if behavior is ongoing).
      3. Brief (no more than 5 words).
   B. Scored "-" if any of the above rules are violated.

II. Eye contact (looking at face).
   A. Scored "+" if less than 3" of eye contact occurs.
   B. Scored "-" if 3" or more of eye contact occurs.

III. Facial expression.
   A. Scored "+" if no smile occurs.
   B. Scored "-" if smile occurs.

IV. Physical contact.
   A. Scored "+" if no physical contact occurs.
   B. Scored "+" if only abrupt or firm physical contact occurs.
   C. Scored "-" if any pleasant physical contact occurs.
   D. EXCEPTION: If the unacceptable behavior is noncompliance:
      1. Scored "+" if physically guided compliance occurs during the noncompliance.
      2. Scored "-" if physically guided compliance does not occur.

V. Backup.
   A. Scored "+" if listed backup is presented within 3" of termination or during the behavior.
   B. Scored "-" if listed backup is presented more than 3" after termination of the behavior; also score "-" if listed backup for appropriate behavior is presented.
   C. Scored "-" if no listed backup is presented.

Backup Consequences

For Appropriate Behavior
   1. Token.
   2. Edible.
   3. Toy.
   4. Privilege.

For Unacceptable Behavior
   1. Token loss.
   2. Time-out.
Examples of Correct and Incorrect Consequences

**3. Overcorrection.**
**4. Privilege loss.**
**5. Hand slap.**
**6. Spanking.**
**7. Toy loss.**

**Examples of Correct and Incorrect Consequences**

**Adult's Response following Appropriate Behavior**

**Vocalization after Appropriate Behavior:** "v+

**Example of Descriptive** (correct)
1. "I liked the way you (washed your hands, sat down, etc.)."
2. "That was good (building, cleaning, sitting, etc.)."
3. "You (picked up, put away toys, etc.) very well."

**Non-example of Descriptive** (error)
1. "That was good."
2. "Good job."
3. "Good boy."

**Example of Enthusiastic** (correct)
1. "Pick up the spoon." (Compliance) "Good, you picked up the spoon!"
2. Child puts away puzzle. "Fantastic! You put away the puzzle."

**Non-example of Enthusiastic** (error)
1. "Pick up the cup." (Compliance) Then, drone in a quiet voice, "Good, you picked up the cup."
2. Child builds tower of blocks. Then quietly, without enthusiasm, you say, "Okay, good block building."

**Example of Immediate** (correct)
1. Child puts away toy. One second later, you say, "Good, you put away the toy!"
2. Child cleans the table top. You say, while he's cleaning, "Dynamite! You are doing a great job of cleaning!"

**Non-example of Immediate** (error)
1. Child puts away cups. Two seconds later, you say, "Good job, you put away the cups."
Eye Contact after Appropriate Behavior: "e+

Example (correct)
2. Child follows your instruction. You look at child for 3-5 seconds.

Non-example (error)
1. Child follows your instruction. You glance at child for 1 or 2 seconds.

Facial Expression after Appropriate Behavior: "f+

Example (correct)

Non-example (error)

Physical Contact after Appropriate Behavior: "p+

Example (correct)
2. Child follows instruction. You gently rub child's arm.

Non-example (error)
2. Child follows instruction. You don't touch child.

Backup Rewards after Appropriate Behavior: "b+

Example (correct)
1. Child plays nicely with toy. You give token or juice within 3 seconds.
2. Child follows instruction. One second later, you give candy, token, or juice.

Non-example (error)
1. Child ties shoe. You don't give token, juice, or candy.
2. Child follows instruction. Four seconds later, you give token.
Adult's Response following Unacceptable Behavior

Vocalization after Unacceptable Behavior: "v-

Example of Descriptive (correct)
1. "No, don't hit."
2. "Don't hurt yourself!"
3. Child does not follow instruction. You say, "No, come here!"

Non-example of Descriptive (error)
1. "That's bad."
2. "You're bad."
3. "That's not good."
4. "That's wrong."

Example of Immediate (correct)
1. Child hits you. One-half second later, you say, "No hitting!"

Non-example of Immediate (error)
1. Child throws glass. Two or three seconds later, you say, "No, don't throw glasses!"

Example of brief (correct)
1. "No throwing!"
2. "Don't hit."

Non-example of Brief (error)
1. "No, I've asked you not to hit. Don't hit me."
2. "That's not right. You threw the ash tray."

Eye Contact after Unacceptable Behavior: "e-

Example (correct)
1. Child hits you. You briefly look at child for 1 or 2 seconds.

Non-example (error)
Facial Expression after Unacceptable Behavior: "f-

Example (correct)
2. Child hits you. You frown (or don't smile).

Non-example (error)

Physical Contact after Unacceptable Behavior: "p-

Example (correct)
1. Child hits his head. You quickly and firmly move his hand to his lap, then release his hand.
2. Child throws object. You don't touch the child.
3. Child hits you. You don't touch the child.
5. Child doesn't follow instruction. You quickly and firmly guide him to do it.

Non-example (error)
1. Child hits himself. You hold his hand and then continue to gently hold it.
3. Child doesn't follow instruction. You hold his arm but don't make him follow the instruction.

Backup Punishment after Unacceptable Behavior: "b-

Example (correct)
1. Child hits you. One or two seconds later, you take away token.
2. Child doesn't follow instruction. Two or three seconds later, you take away token, juice, or candy.

Non-example (error)
1. Child throws glass. You don't take away juice, token, or candy.
2. Child hits himself. Four seconds later, you take away token.
3. Child doesn't follow instruction. You don't take away token, juice, or candy.
Adult's Response following Inappropriate Behavior:
"vo," "eo," "fo," "po," "bo"

Example (correct)
1. Child with task in lap. Child doesn't work. You don't look at, smile, touch, or talk to child and no backup.
2. Child says, "I want cookie, I want cookie, etc." You don't attend to child (don't look at, touch, talk to, or smile).

Non-example (error)
1. Child with task to perform isn't working. You say, "Why aren't you working?"
3. Child says, "Gimme candy, gimme candy, etc." You give juice.

Additional Instructions
1. Some of you may have difficulty in giving the roleplayer pleasant physical contact after appropriate behavior. You may not be used to doing this, and you may be hesitant to do this in the artificial role-play situation. However, it is an important skill to have in the classroom; and you are urged to try and provide pleasant physical contact after the roleplayer's appropriate behavior.

2. Remember to give a backup (token, juice, or candy) when the roleplayer behaves appropriately. Remember to take away a backup (token, juice, or candy) when the roleplayer behaves unacceptably.

3. Remember to look at the roleplayer for more than 3 seconds when appropriate behavior occurs. Remember to avoid looking at the roleplayer too long when unacceptable behavior occurs (look less than 3 seconds).

4. Try your best to follow the rules that you have studied during the roleplay episodes.
APPENDIX B

TEST QUESTIONS FOR WRITTEN RULES

1. Sandy (4) begins playing with a knife. What kind of behavior is this?

2. Sissy asked for a coloring book 11 times during a shopping trip. What kind of behavior is this?

3. Tammy (5) gets building blocks for a present and builds an elaborate miniature log cabin. What kind of behavior is this?

4. Mom tells Johnny, "Come here." Johnny continues to look out the window for 7 seconds. What kind of child behavior is this?

5. Sally drops little pieces of paper on the floor. What kind of behavior is this?

6. Tommy drops several glasses on the floor. What kind of behavior is this?

7. Cindy is sitting in the living room looking out the window. What kind of behavior is this?

8. List the three kinds of child behavior and the matching three consequences.

9. What are the five categories of adult behavior described in the rules?
10. Given that inappropriate child behavior has occurred, describe what the correct adult response would be within each of the five categories.

11. Given that unacceptable child behavior has occurred, describe what the correct adult response would be within each of the five categories. (NOTE: The child behavior is noncompliance.)

12. Given that appropriate child behavior has occurred, describe what the correct adult response would be within each of the five categories.

Adult's response following appropriate behavior:

(Indicate whether the following examples are correct [C] or errors [E].)

13. Vocalization (descriptive):
   ___ a. "That was good."
   ___ b. "You did a good job of cleaning your room."
   ___ c. "Fine job."

14. Vocalization (enthusiastic):
   ___ a. "What a fantastic job you did on this math!" (said loudly).
   ___ b. "Good, you put away the dishes" (said quietly).

15. Vocalization (immediate):
   ___ a. Child gives you your coat. One minute later, you say, "Thank you for getting my coat!"
   ___ b. Child builds a model. Four minutes later, you say, "Fantastic model building!"

16. Facial expression:
   ___ c. Child says new word. You don't smile.

17. Physical contact:
   ___ b. Child cleans table. You don't touch child.
18. Backup:
   a. Child follows instructions. Four minutes later, you give juice.
   b. Child follows instructions. Two minutes later, you give token.
   c. Child washes his hands. You don't give token, juice, or candy.

Adult's response following inappropriate behavior:

19. a. Child is off task. Mom doesn't look at, touch, smile at, or attend to child.
    b. Child is off task. Dad says, "Get to work right now!"

Adult's response following unacceptable behavior:

20. Vocalization (descriptive):
    a. "No! Come here!"
    b. "No throwing!"
    c. "That's bad!"

21. Vocalization (immediate):
    a. Child runs into street. Two minutes later, Mom says, "No, don't run into the street."
    b. Child hits head. Thirty seconds later, Mom says, "No hitting."

22. Vocalization (brief):
    a. "That's wrong. I've told you not to throw things."
    b. "No throwing."

23. Eye contact:
    b. Child breaks toy. Mom looks for two seconds.

24. Facial expression:

25. Physical contact:
    a. Child hits head. Mom quickly and firmly pulls his hands down.
    b. Child doesn't follow instruction. Mom physically guides him to follow the instruction.
    c. Child doesn't sit down when told to. Dad doesn't touch him.
26. Backup:

- a. Child breaks dish. Dad takes away juice.
- b. Child hits Mom. Mom doesn't take away token or juice.
- c. Child hits Dad. Dad takes away token four seconds later.
APPENDIX C
SAMPLE DATA SHEET

Observer: ___________________ Subject: ___________________ Date: __________

<table>
<thead>
<tr>
<th>Episode</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<th>12</th>
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<th>14</th>
<th>15</th>
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<tbody>
<tr>
<td>Child Behavior</td>
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| Consequence | | | | | | | | | | | | | | | |
| Vocalization | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Eye Contact | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Facial | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Physical | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Backup | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

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| Consequence | | | | | | | | | | | | | | | |
| Vocalization | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Eye Contact | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Facial | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Physical | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |
| Backup | + | + | + | + | + | + | + | + | + | + | + | + | + | + | + |

Comments: ____________________

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APPENDIX D

BEHAVIOR CATEGORY WORKSHEET

For: ___________________________ Date: ___________________________

Appropriate

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10.

Inappropriate

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10.

Unacceptable

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10.

NOTE: "Appropriate" includes those newly emerging, desirable behaviors that should be strengthened as well as other desirable behavior and at minimum, any behavior that is not inappropriate or unacceptable. "Inappropriate" includes those behaviors that are not appropriate or unacceptable and will simply not be reinforced. "Unacceptable" includes behaviors that are dangerous, destructive of property, or noncompliant. Also included are those behaviors that were earlier placed in the inappropriate category but proved resistant to change and were, therefore, reclassified into the unacceptable category. All behavior in the unacceptable category is consequated with a form of punishment.
NOTE: In the manual, each frame appeared on a separate page.

Frame 1

We will now describe the correct adult consequence following unacceptable child behavior.

1. Vocalization.

   a. Immediate. It shall occur during the child behavior or within one second of the termination of the behavior.

   Following are correct and incorrect examples of immediate vocalizations:

   Correct: Johnny is choking his brother. Mom says, "No choking." (within 1 second)
   Incorrect: Johnny is choking his brother. Mom waits until he stops. Then, 2 seconds later, says, "No choking." (not within 1 second)

   Correct: Tammy has a tantrum and knocks the lamp off the table. One second later, Mom says, "Don't break things!" (within 1 second)
   Incorrect: Tommy has a tantrum, too, and breaks an ash tray. Two seconds later, Mom says, "Don't break things!" (not within 1 second)

Frame 2

Following unacceptable child behavior, the adult's vocalization should conform to the following rules:

1. Vocalization.

   a. Immediate.

   b. Descriptive reprimand. The unacceptable behavior should be described; or if the unacceptable behavior is noncompliance, the instruction should be repeated once. No personal criticism should occur.
Following are correct and incorrect examples of descriptive reprimands:

Correct: "No hitting!" (descriptive reprimand)
Incorrect: "That's not right." (not descriptive)

Correct: "Don't play with matches!" (descriptive reprimand)
Incorrect: "Don't play with matches. You're bad!" (personal criticism)

Correct: Child doesn't sit down when told to do so. Mom says again, "Sit down," while guiding the child to a chair. (descriptive reprimand)
Incorrect: Child does not sit down when told to. Mom says, "That's bad." (not descriptive)

Frame 3

Following unacceptable child behavior, the adult's vocalization should conform to the following rules:

1. Vocalization.
   a. Immediate.
   b. Descriptive reprimand.
   c. Brief. The vocalization should contain no more than five words.

Following are correct and incorrect examples of brief vocalization:

Correct: "No fighting!" (brief)
Incorrect: "I've told you not to fight." (more than five words)

Correct: "Don't break things." (brief)
Incorrect: "Breaking things is bad; don't do it again." (more than five words)

Frame 4

1. Following unacceptable child behavior, the adult's vocalization should be:
   a. I __________________
   b. D __________________ r __________________
   c. B __________________
Frame 5

Answer: (a) Immediate; (b) Descriptive reprimand; (c) Brief.

2. Which is the correct vocalization following unacceptable child behavior?
   a. Johnny pinches his sister. One second later, Mom says, "That's not good."
   b. Sally pulls Timmy's hair. One second later, Mom says, "Let's go to the store."

Frame 6

Answer: (a) Is not correct; Mom was not descriptive, (b) Is not correct; Mom did not give a descriptive reprimand.

3. Following unacceptable child behavior, the adult's vocalization should be:
   a. ____________________
   b. ____________________
   c. ____________________

Frame 7

Answer: (a) Immediate; (b) Descriptive reprimand; (c) Brief.

4. Which is the correct vocalization following unacceptable child behavior?
   a. Teacher says, "Come here." Johnny refuses. Within one-half second, teacher says, "No."

Frame 8

Answer: (a) Is not correct; it was not a descriptive reprimand. (b) Is correct; it was a descriptive reprimand.
5. Which is the correct vocalization following unacceptable child behavior?

a. Sally (4) puts her hand near the gas burner. Within 1 second Dad says, "No. You'll burn yourself."

b. Tommy refuses to go to his room when told to by Mom. Immediately after he refuses, Mom repeats, "Go to your room," while guiding him to his room.

Frame 9

Answer: (a) Is correct; it was an immediate, descriptive reprimand and was brief. (b) Is correct; it was immediate, descriptive reprimand, and brief.

6. Which is the correct vocalization following unacceptable child behavior?

a. Johnny (5) has been swearing in the home for several months. Mom and Dad have ignored the swearing for a month while they paid extra attention to Johnny's appropriate behavior. This time, when Johnny swears, Mom says within one second, "No swearing. I am really concerned about this!"

b. Sally bites her hand until it bleeds. This time when Sally bites, 2 1/2 seconds later, Dad says, "No biting."

Answer: (a) Is not correct; it was not brief. (b) Is not correct; it was not immediate.
## APPENDIX F

### COMPREHENSIVE CONTINGENCY CHART (CCC)

<table>
<thead>
<tr>
<th>Child Behavior: Appropriate</th>
<th>Adult Consequence: Reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sitting quietly in chair (playing quietly).</td>
<td>1. Praise, attention, and food treat every 1 minute.</td>
</tr>
<tr>
<td>2. Making eye contact.</td>
<td>2. Praise and attention every time.</td>
</tr>
<tr>
<td>3. Following instructions.</td>
<td>3. Praise, attention, and food treat every time.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Child Behavior: Inappropriate</th>
<th>Adult Consequence: Nonreinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Rocking.</td>
<td>1. No attention.</td>
</tr>
<tr>
<td>2. Head waving.</td>
<td>2. No attention.</td>
</tr>
<tr>
<td>3. Pulling his/her own ears.</td>
<td>3. No attention.</td>
</tr>
<tr>
<td>4. Giggling.</td>
<td>4. No attention.</td>
</tr>
<tr>
<td>5. Looking away.</td>
<td>5. No attention.</td>
</tr>
<tr>
<td>7. Blowing.</td>
<td>7. No attention.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Child Behavior: Unacceptable</th>
<th>Adult Consequence: Punishment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Not following instructions (within 5 seconds).</td>
<td>1. Repeat instruction one time only and give firm physical guidance to make sure he/she follows the instruction.</td>
</tr>
</tbody>
</table>

2. Physical aggression.
   a. Kicking: foot brought into contact with another person.
   2.a. Say "No ________!" and immediately place in time-out chair for 1 minute and 15 seconds of "good behavior."
   2.b. Same as 2.a. above.
   2.c. Same as 2.a. above.
   2.d. Same as 2.a. above.
   2.e. Same as 2.a. above.
   2.f. Same as 2.a. above.

b. Hitting: hands strike another person.
   2.b. Same as 2.a. above.

   c. Grabbing or scratching: open hands paw at another person.
   2.c. Same as 2.a. above.

   d. Pulling hair.
   2.d. Same as 2.a. above.

   e. Biting others.
   2.e. Same as 2.a. above.

   f. Choking others.
   2.f. Same as 2.a. above.

3. Taking off clothes.
   3. Say "No ________!" and immediately place in time-out chair for 1 minute and 15 seconds of "good behavior"; then, replace clothes with little attention.
   3.a. Say "No ________!" and immediately place in time-out chair for 1 minute and 15 seconds of "good behavior."

4. Destruction of property: throwing or striking breakable objects.
   4. Say "No ________!" and immediately place in time-out chair for 1 minute and 15 seconds of "good behavior."

5. Self-abuse.
   a. Biting self.
   5.a. Say "No ________!" and immediately place in time-out chair for 1 minute and 15 seconds of "good behavior."

   b. Hitting self.
   6.b. Same as 5.a. above.
You now know there are three basic types of child behavior:

Appropriate
Inappropriate
Unacceptable

You must show the child that there are large differences in your consequences for those three types of behavior. That is:

1. **When appropriate behavior occurs**, give a lot of praise, attention, and food treats (reinforcers). *Catch them being good!*

2. **When inappropriate behavior occurs**, do not give any attention, praise, or treats. Just *look away from the child and ignore.*

3. **When unacceptable behavior occurs**, quickly and firmly punish the behavior and give little attention in the process. *Do not let the child get away with any of the unacceptable behavior without punishment.*
APPENDIX G

EXPERIMENT II SCORING RULES

Introduction

1. Score adult consequence of the worst behavior class (appropriate, inappropriate, or unacceptable) that occurs within the first 10 seconds of the 15-second interval. If the behavior class worsens (i.e., "+" to "0" or "-" or "0" to "-") in the period between 10 seconds and 15 seconds, then record that new behavior class above the child behavior column for that 15-second interval.

2. If compliance with an instruction is the type of child behavior that occurs, then record a "c" over the "+." If noncompliance occurs, then record an "n" over the "+."

3. Each interval should be scored independently of other intervals.

4. Following are listed backup consequences:

<table>
<thead>
<tr>
<th>Rewards for Appropriate Behavior</th>
<th>Punishments for Unacceptable Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Token</td>
<td>Edible loss</td>
</tr>
<tr>
<td>Edible</td>
<td>Time-out in chair</td>
</tr>
<tr>
<td>Toy</td>
<td>Privilege loss</td>
</tr>
<tr>
<td>Privilege</td>
<td>Toy loss</td>
</tr>
<tr>
<td></td>
<td>Full physical guide</td>
</tr>
</tbody>
</table>

5. Definitions of physical contact:

a. Unpleasant physical contact. Any contact not included in full physical guidance that is rapid and firm contact. (Score full physical guide as a backup not as physical contact.)

b. Pleasant physical contact is all other contact.

c. Do not score a brief one-handed touch involved in giving or taking away an object as physical contact.

6. Full physical guide is complete molding of response throughout entire typography.

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Appropriate Child Behavior (+)

Appropriate behavior is that behavior that is helpful to others or to the child as well as behaviors that are not inappropriate or unacceptable.

Scored: + = specified appropriate behaviors
c = compliance

Adult Consequence following Appropriate Behavior

I. Vocalization.
   A. Scored "+" if vocalization is:
      1. Descriptive praise without criticism.
      2. Enthusiastic (no monotone; volume above other adult vocals in episode). Do not use if there are no other vocals to compare with.
      3. Immediate (vocal behavior should occur within one second of termination of behavior or during behavior if behavior is ongoing).
   B. Scored "-" if any of the above rules are violated.

II. Eye Contact (looking at face).
   A. Scored "+" if eye contact occurs.
   B. Scored "-" if eye contact does not occur.

III. Facial Expression.
   A. Scored "+" if smile occurs (no frown).
   B. Scored "-" if no smile occurs or if frown occurs.

IV. Physical Contact.
   A. Scored "+" if only pleasant physical contact occurs.
   B. Scored "-" if any unpleasant physical contact occurs or if none occurs.

V. Backup Consequence.
   A. Scored "+" if listed backup reward is presented within 3 seconds of termination of behavior or during baseline.
   B. Scored "-" if listed backup reward is presented more than 3 seconds after termination or not at all.

Inappropriate Child Behavior (o)

Inappropriate child behavior is that behavior that is unpleasant or annoying to others but is not unacceptable.
Adult Consequence following Inappropriate Child Behavior

I. Vocalization.
   A. Scored "+" if none occurs.
   B. Scored "-" if any vocalization occurs (including sighs, hisses, squeals, etc.).

II. Eye Contact (looking at face).
   A. Scored "+" if none occurs.
   B. Scored "-" if any eye contact occurs.

III. Facial Expression.
   A. Scored "+" if no smile or frown occurs.
   B. Scored "-" if either smile or frown occurs.

IV. Physical Contact.
   A. Scored "+" if no physical contact occurs.
   B. Scored "-" if any physical contact occurs.

V. Backup Consequence.
   A. Scored "+" if no listed backup is presented.
   B. Scored "-" if any listed backup is presented.

Unacceptable Child Behavior (-)

Unacceptable behavior is that behavior that is:

1. Dangerous to the child or others.
2. Destructive of property.
3. Noncompliant (when a child does not begin to follow an adult's understandable instruction within 5 seconds of instruction or when the adult begins full physical guide, whichever comes first).

Scored:  n = noncompliance
         - = other unacceptable behavior

Adult Consequence following Unacceptable Behavior

I. Vocalization.
   A. Scored "+" if vocalization is:
      1. Descriptive of misbehavior (or correct behavior) without personal derogatory statements.
      2. Within 1 second or less of termination of behavior (or during behavior if behavior is ongoing).
      3. No more than five words.
   B. Scored "-" if any of the above rules are violated.
II. **Eye Contact (looking at face).**
   A. Scored "+" if none occurs or less than 3 seconds of eye contact occurs.
   B. Scored "-" if 3 seconds or more occurs.

III. **Facial Expression.**
   A. Scored "+" if no smile occurs.
   B. Scored "-" if smile occurs.

IV. **Physical Contact.**
   A. Scored "+" if only unpleasant physical contact occurs or none occurs.
   B. Scored "-" if any pleasant physical contact occurs.

V. **Backup Consequence.**
   A. Scored "+" if listed backup punishment is presented within 3 seconds of termination or during the behavior.
   B. Scored "-" if listed backup punishment is presented more than 3 seconds after termination of the behavior or not at all.
   C. EXCEPTION: If the unacceptable behavior is noncompliance:
      1. Scored "+" if fully physically guided compliance occurs during the noncompliance.
      2. Scored "-" if physically guided compliance does not occur.

**Scoring Rules when Child Is in Time-out Chair**

When child is initially placed in time-out chair, record "T.O." over the appropriate backup score of "+" or "-".

Thereafter, as long as the child is in the chair, record "T.O." over the relevant type of child behavior.

1. When child is sitting in chair without resisting or leaving chair and without engaging in inappropriate or unacceptable behavior, then record "T.O." over the "+" for appropriate child behavior but score the adult's consequences as if the child behavior was inappropriate.
2. When child struggles to leave chair or leaves chair, record "T.O." over the "-" for unacceptable behavior and score consequences accordingly.
3. When child sits in chair but engages in other inappropriate behaviors, record "T.O." over "o" for inappropriate child behavior and score consequences accordingly.

**Behaviors One or More Target Children Have Exhibited**

**Inappropriate**

1. Whining.
2. Dropping nonbreakable items.
3. Getting out of chair without permission (score in first inter-val only).
4. Repetitive behaviors (rocking, hand or head waving, ear pulling, giggling, loud blowing, etc.).
5. Leaning over edge of chair.

Unacceptable

1. Physical aggression.
   a. Kicking (foot brought into contact with another).
   b. Hitting (hands strike another).
   c. Grabbing or scratching (open hands paw at another, not including hugging initiated by adult).
   d. Pulling hair (hands grasp another's hair).
   e. Biting others (mouth in contact with another).
   f. Choking (hands around other's throat).
2. Self-abuse.
   a. Biting self (teeth in contact with own skin).
   b. Hitting self (hands strike self).
3. Destruction of property (throwing or striking breakable objects or tearing up books, not including tearing up pieces of paper or dropping nonbreakable items).
4. Noncompliance (not beginning to follow an instruction within 5 seconds).
5. Taking off clothes (removal of any clothing item).
REFERENCE NOTES


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Panyan, M. C., & Patterson, E. T. Teaching attendants the applied aspects of behavior modification. Mental Retardation, 1974, 12, 30-32.


