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TEACHING BEHAVIOR MODIFICATION
TO EXPECTANT PARENTS

A thesis
Presented to
the Graduate Faculty of the
University of the Pacific

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Dudley D. Blake

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This thesis, written and submitted by

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Finally, my deepest thanks go to my mother, Jo Anne Blake. Her encouragement and personal support were essential in my making it to and through the UOP graduate program in Psychology.

ABSTRACT

Numerous studies have demonstrated the efficacy of teaching parents behavior modification in order to manage and prevent child-related problems. The present study investigated a preventive parent training program using a multiple baseline design by teaching expectant parents behavior modification principles and applications. Three expectant mothers received individualized home training and "hands-on" training at a nursery school. Each expectant mother also received videotaped feedback on instructions and differential attention and praise she provided to a pre-selected child-participant while at the nursery school. After training began, the expectant mothers increased their use of praise to the child's cooperative behavior and their use of statements of a contingency and two behavior reduction procedures when the child was behaving oppositionally. The results indicate that expectant parents can successfully be taught effective child management skills before they have their children.

In its broadest sense, parent education refers to the "...learning activity of parents who are attempting to change the method of interaction with their children for the purpose of encouraging positive behavior" (Croake & Glover, 1977, p. 151). Teaching parents to become effective in their child rearing skills is not a new practice. In fact, the first record of an effort to educate parents in America dates back to the 17th century when government-appointed "tithingmen" were assigned to oversee parents in the home (Lewis, 1978). In recent times, this parental "learning activity" has been manifested in a variety of different approaches to child rearing.

One of the more popular approaches is that of Benjamin Spock, the author of several influential books on child rearing (Spock, 1945, 1974). Spock emphasizes the importance of parents encouraging their children to meet high standards and advocates, as indicated in the subtitle of one of his more recent books, "...a philosophy of parental leadership and high ideals" (Spock, 1974). Although this aim sought by Spock is probably good for parents and children, in a recent overview of the literature, the present author found only one empirical investigation pertaining to any component of Spock's "philosophy" (Barnard, Christopherson, & Wolf,

1977). Given the paucity of research literature regarding Spock's proposals, the greater part of his work remains empirically untested and, therefore, its effectiveness is questionable.

Another popular child rearing approach is that of Parent Effectiveness Training (PET). This approach is based on the teachings of Carl Rogers and includes concepts such as "active listening," "I-messages," and the "no-lose" method of conflict resolution. In the 1960's PET had reportedly been taught to over 250,000 parents in workshops across the country (Gordon, 1970). In an overview of the literature, Lewis (1978) cited nine studies showing parental attitude change after completing PET. Of the nine studies listed by Lewis, only one included results in which observable behavior change had been demonstrated. In contrast, the recent movement in parent training toward a behavior modification approach is both based on empirically derived theory and is assessed on the basis of experimentally demonstrated behavior change.

The behavior modification approach¹ entails teaching the parents methods of arranging antecedent and consequent events in the child's social environment to promote the child's performance of desirable behavior. By increasing the child's desirable behaviors, the parents

maximize the amount of positive reinforcement the child receives, while decreasing the amount of aversive consequences (Ryback & Staats, 1970). A good deal of literature on training parents as behavior modifiers of their own children has been generated (Bornstein, 1974; Brown, 1971; Moore & Claerhout, 1977). Numerous research reviews have discussed the efficacy of using parents as behavior change agents (Berkowitz & Graziano, 1972; Gelfand & Hartmann, 1968; Johnson & Katz, 1973; O'Dell, 1974; Reisinger, Ora, & Frangia, 1976). An overview of several recent articles on teaching behavior modification to parents of retarded (Heifetz, 1977; Rose, 1974), brain-injured (Salzinger, Feldman, & Portnoy, 1970), and autistic children (Lovaas, Koegal, Simmons, & Long, 1973) attests to the appreciable success demonstrated by using parents as the behavior modifiers of their own children. Equally impressive results have been achieved by parents in modifying their "normal" children's behavior, including academic problems (Koven & Lebow, 1973), non-compliance (Forehand, Cheney, & Yoder, 1974; Peed, Roberts, & Forehand, 1977), shopping behavior (Barnard, Christopherson, & Wolf, 1977), weight reduction (Aragona, Cassady, & Drabman, 1975), and toileting (Barrett, 1969).

Research on teaching parents behavior modification to manage their children has not only demonstrated the

feasibility of the parent-as-change-agent role, but has served another practical function as well. Several do-it-yourself behavior management manuals for parents have been published as an outcome of this research (e.g., Becker, 1971; Morris, 1976; Patterson, 1977). In addition, other investigators have outlined recommended guidelines for instructing parents in behavior modification (Benassi & Benassi, 1973; Brockway, 1974; Evans, 1977).

To summarize, in the last several decades an impressive number of studies demonstrating the viability of teaching behavior modification to parents have appeared in the literature. Out of these have come several empirically based packages for handling problem behaviors exhibited by children.

There are several similarities and distinctions between the behavior modification model of parent training and the models mentioned previously (i.e., Spock and PET). A basic characteristic that all of the approaches share is that they all advise what to do once the child's behavior becomes a problem, whether the advice be "I-messages" or "differential reinforcement of other behaviors." One major difference between the approaches is that PET and Spock have outlined guidelines for how the parents should behave whether

the child is a problem or not, while the behavior modification approach does not specifically include teaching the parents the skills necessary for preventing future child-related problems. However, two recent articles are worth commenting on in regard to teaching parents preventive skills.

In 1974, Brockway described a behavioral parent training program based on a prevention-oriented model. Four major components of the model include: (a) problem detection, (b) program design, (c) program implementation, and (d) program evaluation. The training focused on teaching parents to respond effectively to a variety of child management problems in an effort to modify presenting problems before they become severe. Although problem-oriented in nature, the model is innovative in its preventive stance.

A second study has provided a partial test of the proposal for teaching parents preventive behavior management skills. Reisinger, Ora, and Hoffman (1976) report some impressive results in their work with "toddler management training." In their study, six mothers of preschool children (2-4 years old) received training in behavior modification with their own children in a clinic setting. Their results indicate that parents can be taught to apply differential social reinforce-

ment to the oppositional and cooperative behaviors displayed by their young children. As Reisinger, et al. point out, this tactic may provide a means for preventing behavior problems that parents often encounter as their child becomes older. Therefore, the younger the child, the more beneficial parental use of behavior modification becomes. Carried to its logical extreme, the preventive model should also entail instructing prospective and pre-parents in behavior modification before they have their first child.

In a recent study, Beebe (1978) described an "Expectant Parent Program" aimed at preventing mental health problems of young children resulting from inadequate parenting. This primary-prevention program included educating the expectant parents on infant and child development and care. Although the program did not include training in behavior management, it is an illustrative example of a training program for teaching parents essential skills before they have their children.

Valentine-Dunham and Gipson (1980) designed a training package for teaching high school students specific family conflict-resolution skills based on behavioral principles. The investigators reported that the pre-parent high school students increased their know-

ledge of family relationship skills as measured by a pre-test/post-test questionnaire. Their results indicate that pre-parent populations can be taught behavioral skills for use in the family social environment. The results from the two studies just described raise the question of whether expectant parents can learn and apply behavioral skills (i.e., behavior modification principles) for use in rearranging their child's social environment.

The present study was designed to assess the efficacy and viability of training expectant parents in behavior modification. The expectant parent training consisted of the following components: (a) four 1½-hr individualized training and discussion sessions detailing both general and specific behavior management techniques, (b) assigned readings from Patterson's programmed text on parenting, Living With Children, and (c) "hands-on" training with videotaped feedback on their interaction with a pre-selected "child-participant" at a local nursery school.

It was hypothesized that as a result of training the expectant mothers would increase the amount of positive social reinforcement of the child-participant's cooperative behavior and the amount of negative consequence (i.e., ignoring and correcting) of the child's

oppositional behavior. Additionally, changes in the parents' use of "if-then" statements of a contingency were expected.

Method

Participants

Before the program began, the purpose and details of the program were explained to five Stockton day-care center and nursery school directors who were asked to allow their facility to be used for the hands-on portion of the study. Two nursery schools agreed to participate.² Each of the three selected participants worked at either a center separate from the other participants or at the same facility on separate days and/or times.

The director of each facility selected the child her staff reported to have the most behavior problems and require the most supervision. After each nursery school director selected a child, the child's parents were informed of the program and asked to allow their child to serve as a "child-participant" in the study. Once the parents agreed to involve their child, they signed a description/consent form and returned the document to the nursery school director (Appendix A).

Three married females expecting their first child within 3 to 6 mo participated in the training pro-

gram. In recruiting and selecting the expectant mothers, obstetricians and gynecologists in the Stockton area were informed that a project was underway through the University of the Pacific aimed at educating expectant parents in infant/child management techniques. The physicians received copies of a one-page description of the expectant parent training program informing the potential participants of the benefits of participating in the program (i.e., free training and a \$50 U.S. Savings Bond) and of the time requirements of the training (Appendix B). The physicians were asked to provide a copy of the program description to all clients expecting their first child within 3 to 6 mo. Additionally, several newspapers in the Stockton area printed a news article which described the program and advised interested persons who were eligible for the training to contact the author. The original news release sent to the various publication offices is shown in Appendix C.

Of the 27 women who inquired about the program, 13 were able to attend the instructional meetings and practicum visits. The first three persons in this sub-set of eligible participants were chosen to begin the program, while the remaining 10 persons were notified that their names were placed on an alternate list. Each of

the three was sent a letter/contract to read and sign as a written agreement about her participation in the program (Appendix D). Three expectant mothers declined to sign the written contract; however, three persons from the alternate list did sign.

Participant A was a 5-mo pregnant, 28-year-old part-time nurse. Her husband, a 39-year-old construction contractor, declined to participate in the home training. The child-participant was a 4½-year-old male whom the nursery school staff had referred to the program because of his high level of activity and occasional disruptiveness at the school. Participant A began the home training after three baseline visits to the nursery school.

Participant B was a 5½-mo pregnant, 21-year-old housewife. Her husband, a 22-year-old carpenter employed in the Stockton area, also attended the home training sessions. The child-participant assigned to Participant B was a 2½-year-old male. The nursery school staff reported that the child was more active than the other children at the school and was occasionally disruptive.

The baseline no-treatment period for Participant B lasted for five sessions at the nursery school. After the initial five visits, the expectant mother partici-

pated in the training. During this phase, seven interaction sessions were scheduled and videotaped; however, due to a malfunction within the videotape camera/microphone, Sessions 11 and 12 were recorded without sound. Consequently, on only five hands-on sessions was the participant given visual feedback on her interaction with the child following the initial baseline sessions.

Participant C was a 6-mo pregnant, 29-year-old full-time manicurist/beautician. Her husband was a 28-year-old businessman employed in the Stockton area who also participated in the home training. The child assigned to work with Participant C was a 3-year-old male reported to be extremely active and frequently disruptive. The training phase for Participant C began after seven sessions at the nursery school.

Experimental Design

A multiple baseline across subjects design was used to assess the effects of the expectant parent training program. The three participants were randomly assigned to each leg of the multiple baseline.

The multiple baseline was chosen for this study for two reasons. First, the effects of training on human participants are not easily reversed, making a reversal or withdrawal design impractical. Second, the external validity of designs depends on the subsequent replica-

tion of research, and the multiple baseline across subjects design accomplishes this.

Dependent Measure

The effects of the expectant parent training were assessed by recording changes in the participants' behavior observed from their videotaped interaction with the nursery school child. An interval behavior recording sheet (Appendix G) was used to take data from a 10-min videotape of each session at the nursery school. The recording sheet consisted of 40 10-sec observation intervals, each followed by a 5-sec recording period.

For each interval designated on the recording sheet, an "I/C," "LP," "Pr," or "SC" was circled by the videotape observer to record whether the participant ignored or attempted to correct, gave labeled and unlabeled praise, or issued a stated contingency to the child (respectively). Instances of follow-through of a stated contingency were recorded by placing a slash (/) across the circled category, SC. Additionally, the recording sheet was used to record whether the child was exhibiting cooperative or oppositional behavior. The response definitions for each of the recorded behaviors are listed in Appendix F. After the behaviors were recorded, they were totaled on a data summary sheet for

inspection (Appendix G).

Procedure

"Hands-on" training. Throughout the study, the expectant mothers participated in 14 1-hour visits to one of the selected nursery schools. In all sessions (visits) during the program, the participants interacted with a child-participant for a 10-min period. For all sessions the participants were instructed to:

(a) assist the staff with their regular nursery school duties; (b) allow 10 min to be videotaped interacting with the child-participant; and (c) allow 10 min to view the replay of the videotape for feedback from the trainer (the author). During the baseline phase of the program, feedback consisted of telling the participants that before training could begin, it was important that they learn to "get used to" young children. Throughout the phase, the participants viewed the videotape to see how they interacted with the child so they would be aware of any changes in the way they interacted with the child after training. After training began, each participant was instructed to apply the skills she had learned in the home training sessions. Feedback on the videotape replay consisted of the trainer giving praise to the participants on their use of statements of a contingency and differential social re-

inforcement to the child's cooperative and oppositional behaviors.

In addition to providing feedback to each participant, the tapes also served as the data source for the study. Data were recorded from the videotapes after all the tapes from the baseline and training phases had been obtained. The baseline and training phases were replayed in random order for data recording, and at no time were the observers told in which phase the tapes were recorded.

Observer training and reliability. Before the nursery school visits began, one undergraduate from the University of the Pacific agreed to be the primary data collector; a graduate student and the author served as reliability (agreement) observers. The three observers practiced for 2½ hours using the data recording sheet by observing a videotaped scene showing caretaker-child interaction. The training tape was filmed in a day care center before the initial observations began. Observer agreement was determined by dividing the number of intervals in which the observers agreed by the total number of intervals in each observation session (40). The observers practiced using the recording sheet until an inter-observer agreement of at least 90% was reached.

After the tapes for each participant were placed in

random order, reliability probes were scheduled for every fourth observation (Appendix H). During the reliability probes, the author and graduate student alternated serving as reliability observer. An agreement of at least 90% was attained during every probe scheduled in the study.

Baseline. Measures of the before-training interaction behaviors in each of several expectant mother-child interactions were recorded for comparison to the after-training level. The pre-training phase for the first participant (Participant A) was limited to three training visits to prevent an overly extended no-training phase for later participants (Participants B and C). Training sessions for Participant B started after five baseline observations had been conducted; and after seven observations, Participant C began the training sessions.

Training. After the specified number of baseline sessions were completed by each respective participant, the first of four individualized training sessions was scheduled. Training sessions lasted approximately 1½ hours, occurred twice a week for 2 weeks, and were conducted at the participants' homes. Participants B and C went through the training with their husbands, while Participant A indicated that her husband was interested

but did not have the time available for the home training.

During the first training session, the participants received: (1) a copy of Patterson's (1977) book on parenting, Living With Children, (2) the first reading assignment from the book, and (3) a lesson plan outlining the topics to be covered in the first three sessions

(Appendix I). During the second training session, the expectant mothers completed a 40-item quiz on the material in the book (Appendix J) consisting of excerpted items from Patterson's (1978), "Test for 'Families' and 'Living With Children'." The test was administered for two reasons: first, as a formal means for determining whether the participants were completing their assigned readings and second, as a useful tool for giving the participants feedback and promoting discussion of the readings.

On the fourth training session, the participants completed the 72-item unabridged version of Patterson's 1978 test to assess their comprehension of the reading material (Appendix K). On this latter testing, the three participants scored 92.5, 97.7, and 94.5% correct, respectively.

A general outline of the topics discussed and reading assignments given for each session is shown below:

SessionTopic/Reading Assignment

1. Introduction to parent education: history and approaches to parent training. The behavioral social learning approach: children's behavioral excesses, deficits, and inappropriates. Introduction to positive reinforcement. Section 1 (pp. 1-45), Living With Children reading assignment given.
 2. Positive reinforcement: teaching good behavior, differential social reinforcement. Shaping and Chaining: reinforcing low-rate behaviors. Section 2 (pp. 46-67) reading assignment given.
 3. Extinction, time-out, and the spank: decreasing oppositional child behavior. Sections 3, 4, and 5 (pp. 68-116) reading assignment given.
 4. Review of parent education and behavioral social learning strategies for parenting. What to expect as parents: normal children, normal problems, exceptional children, exceptional problems.
- Follow-up: The training durability, or the general-

izability across time, was also measured in the present study. At 1 and 2-month-time periods after the participants' last nursery school visit, the participants returned to the school, and their 10-min interactions with the child-participant was videotaped and recorded.

Results

Participant A

Praise for Cooperative Child Behavior. During the baseline phase, the mean percentage of labeled and unlabeled praise combined that was given to the child for engaging in cooperative behavior was 4.2%. The scores for the baseline sessions were 2.5, 2.5, and 7.5%; thus, the training portion of the study began immediately after the highest percentage of praise during the baseline phase. The session scores for participant praise are shown on the line graph in Figure 1.

In the training phase, the mean percentage for praise increased from the baseline mean of 4.2% to the corresponding treatment mean of 12.8%. As shown in Figure 1, the percentage of cooperative behaviors accompanied by participant praise within the same interval fluctuated 15.5 points throughout the treatment phase. There are two apparent trends in the training data. First, the high score for the first data point of the training phase (Session #4) was followed by a gradual decreasing trend

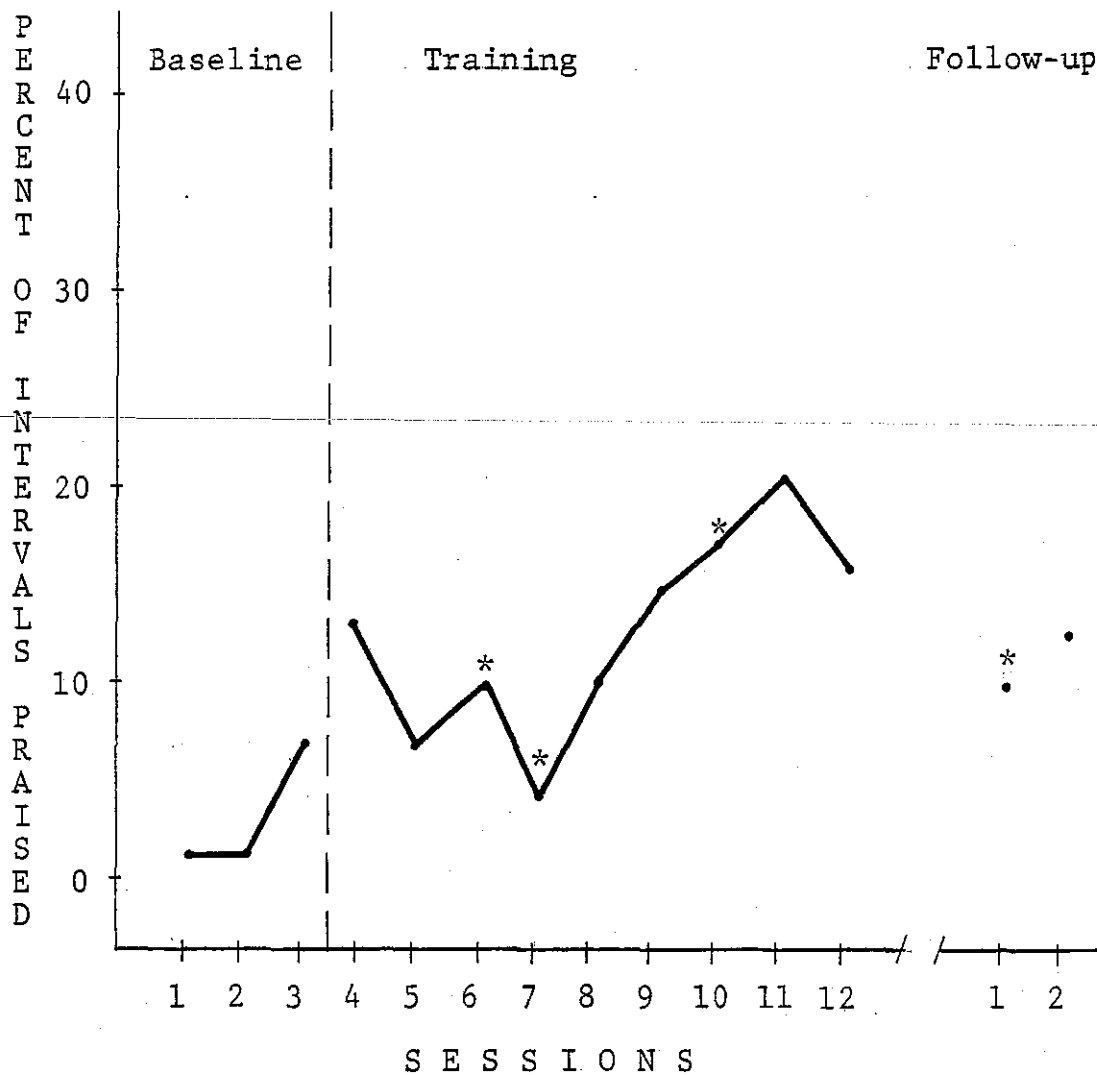


Figure 1. Participant A: Percentage of interaction session intervals of cooperative child behavior that were accompanied by instances of participant praise (labeled and unlabeled).

*Reliability probes. Inter-observer agreement was greater than or equal to .90 during all probes.

over the next three sessions. This downward trend in the data was concluded with the Session #7 percentage of 5.1%. A second, increasing trend in the data immediately followed and continued up to a peak percentage of 20.6 on Session #11. Training concluded with 16.7% praise to cooperative child behavior on Session #12. The 1 and 2-month follow-up probes revealed a reduction, with combined scores of 10.0 and 12.5%, respectively.

Statement of a contingency. No contingency stating behavior was recorded for Participant A during any session throughout the present study. Therefore, training did not result in either an increase or decrease in the participant's use of this behavior.

Ignoring and/or correcting oppositional child behavior. Instances of oppositional child behavior were not recorded during the baseline phase. Consequently, Participant A did not have the opportunity to exhibit ignoring or correcting of this behavior. During the training phase, however, the child displayed 1, 11, and 10 instances of oppositional behavior during Sessions 7, 11, and 12, respectively. Twelve, or 54.5% of the total instances of oppositional child behavior were either ignored or corrected by Participant A. As with the baseline phase, oppositional behavior was not re-

corded in either of the follow-up sessions.

Participant B

Praise for cooperative child behavior. During the baseline phase, the combined scores for cooperative behavior accompanied by both labeled and unlabeled praise ranged from 2.5 to 13.2%, with a mean of 8.3% and a median of 7.7%. As represented by Figure 2, 5.4, 2.5, and 7.7% praise to cooperative child behavior were recorded during the first three baseline sessions. In the following two baseline sessions, praise increased to 12.8% on both occasions. Again, as with the baseline data for Participant A, a clear increase in the percentage scores occurred just prior to the onset of the treatment phase.

After training began, praise for cooperative behavior increased to 20.5%. During the training phase, the percentage of intervals with participant praise ranged from 10.3% on Session #7 to 39.5% on Session #9. The mean percentage for this behavior during training was 22.1%, compared to the baseline mean of 8.3%. In follow-up, the percentage of praise was 17.5% for both sessions. These data indicate that the effect of treatment remained durable across the 1 and 2-month follow-up periods.

Statement of a contingency. Before the treatment

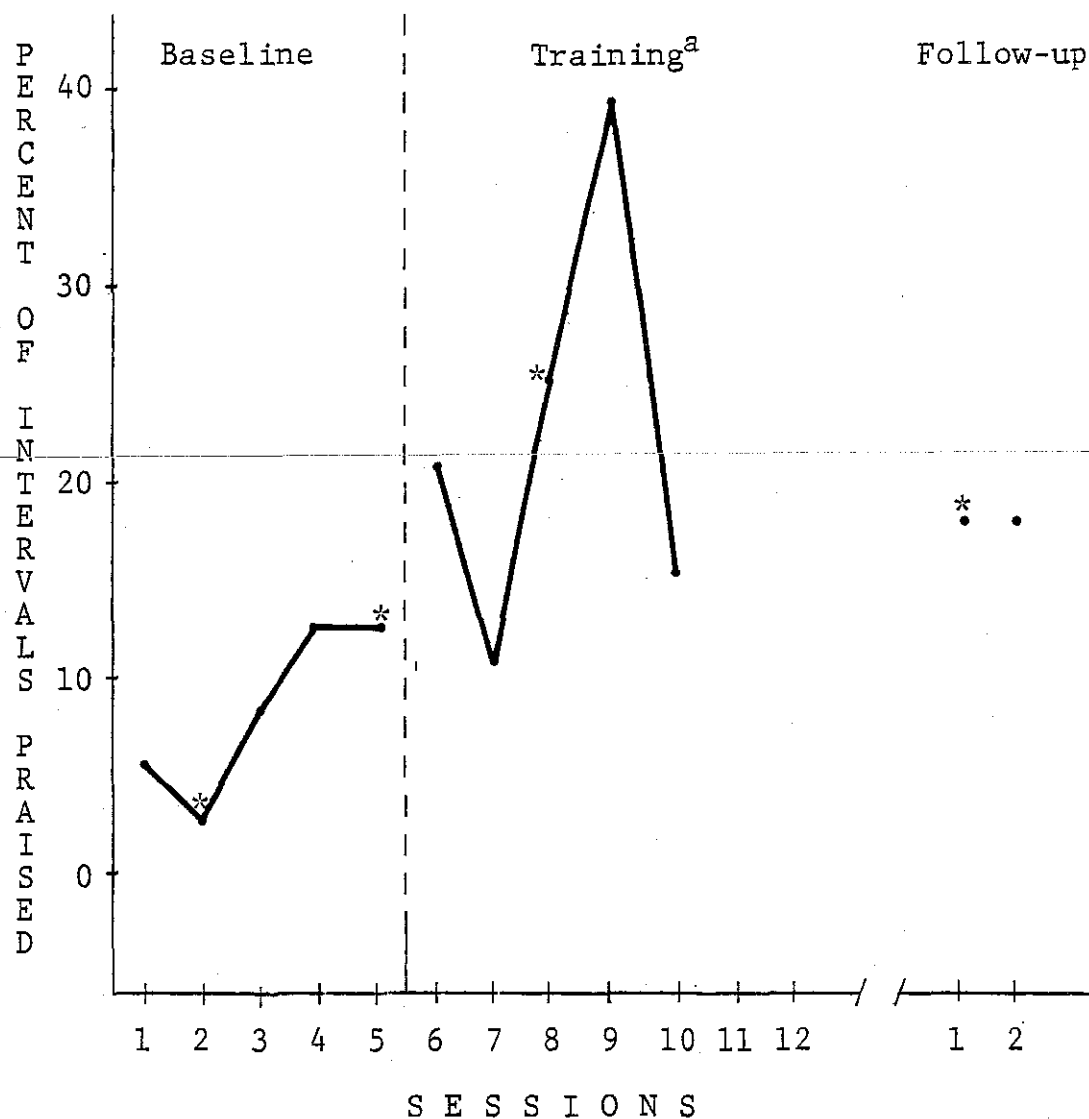


Figure 2. Participant B: Percentage of interaction session intervals of cooperative child behavior that were accompanied by instances of participant praise (labeled and unlabeled).

*Reliability probes. Inter-observer agreement was greater than or equal to .90 during all probes.

^aSessions #11 and #12 were not recorded due to a videotape recorder malfunction.

phase began, there were no recorded instances of statements of a contingency on the part of the expectant mother. In the training portion of the program, however, contingency stating behavior was recorded during Sessions 7, 9, and 10, with 3, 4, and 1 occurrences, respectively. In summary, for five baseline sessions there were zero recorded instances of statements of a contingency compared with eight occurrences in the five treatment sessions. Additionally, of the eight statements of a contingency that were recorded, on five occasions the participant followed through on the consequences stated to the child. There were no recorded instances of statements of a contingency in either follow-up session.

Ignoring and/or correcting oppositional child behavior. Throughout the program, the child-participant displayed cooperative behavior from 97.5 to 100% of the intervals in 10 out of 12 sessions. On Sessions #1 and #9, the child behaved oppositionally 7.5 and 5.0% of the intervals that were recorded. Substantial changes in either an increasing or decreasing fashion are not evident in the data for Participant B. Interested readers may inspect the raw scores which are shown in Appendix L.

Participant C

Praise for cooperative child behavior. The before-training percentages for Participant C's labeled and unlabeled praise to cooperative behavior ranged from 2.9 to 18.4% (Figure 3). The baseline phase included an increasing and then decreasing trend in the data, starting at 6.8%, increasing to 18.4% in Session #3, and then gradually decreasing to 2.9% for the session immediately preceding the start of the training phase.

After training was initiated, the percentage of praise increased to 10.5% and over the next three sessions, increased to a treatment high of 25.0%. In the latter two sessions of the treatment phase, the amount of praise dropped to 16% and 20.8%, respectively. The treatment level of praise for Participant C was maintained in both follow-up probes with session percentages of 18.9 and 22.5, respectively.

Statement of a contingency. The level of participant use of a stated contingency was zero for all seven baseline sessions. During the subsequent three training sessions, the participant still had not been recorded using a stated contingency. On the last two sessions of the training phase, the participant's use of the statement of a contingency increased to 1 and 2 occurrences, respectively. During the follow-up sessions,

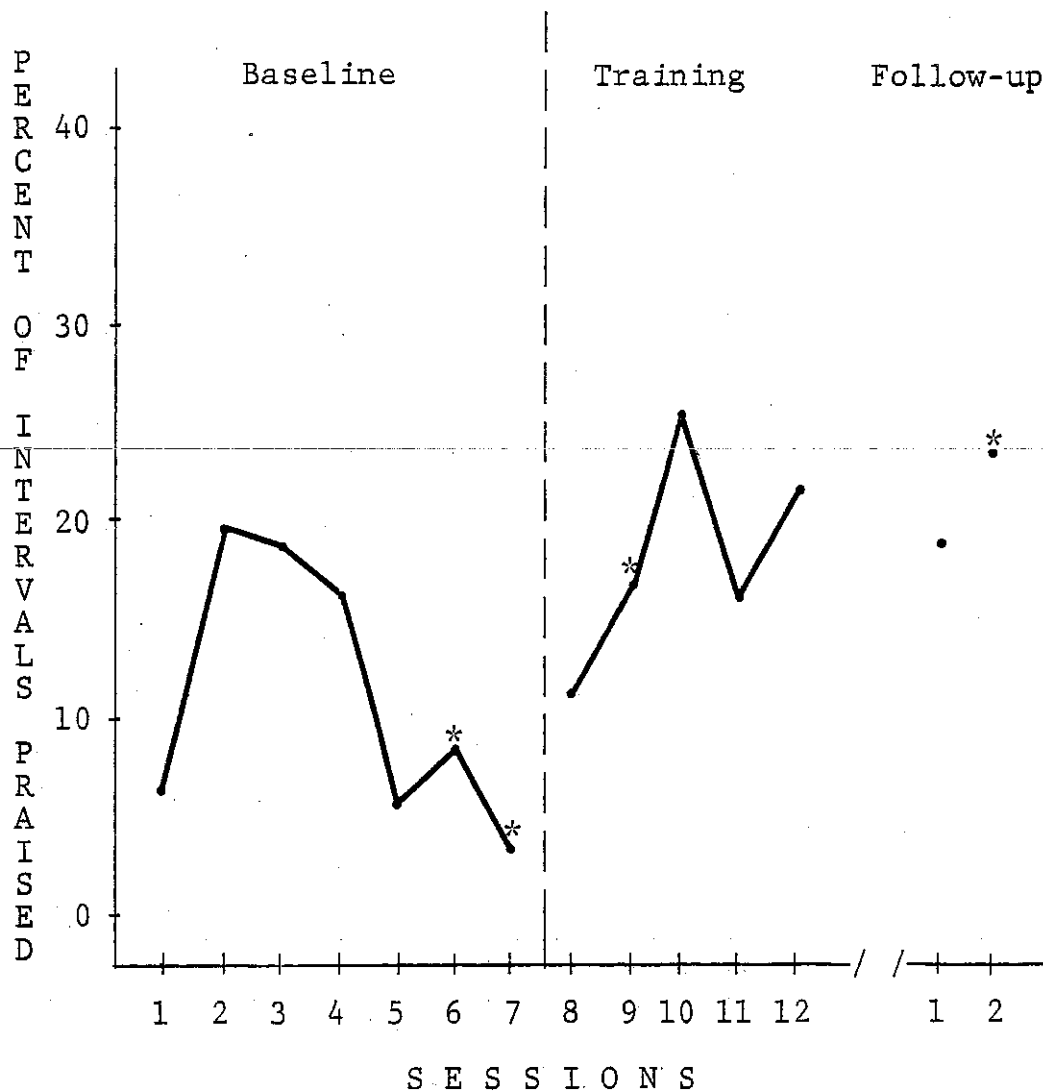


Figure 3. Participant 3: Percentage of interaction session intervals of cooperative child behavior that were accompanied by instances of participant praise (labeled and unlabeled).

*Reliability probes. Inter-observer agreement was greater than or equal to .90 during all probes.

the participant again did not exhibit this behavior.

Ignoring and/or correcting oppositional child behavior. Throughout the study, the child's oppositional behavior ranged from 5 to 40% of the intervals during each interaction session. The mean percent of intervals of oppositional behavior for the baseline and training phases was 6.7% and 10.8%, respectively. This between-phase increase in the child's oppositional behavior was accompanied by a more marked increase in the participant's use of ignoring or attempts to redirect the child. The percentage of the participant's ignoring and/or correcting the child for oppositional behavior for the two phases was 17% and 42.4%, respectively. During the 1-month follow-up session, three occurrences of oppositional behavior were recorded and each was accompanied by ignoring on the part of the participant. Oppositional behavior was not recorded during the 2-month follow-up session.

Results for all three participants

The most pronounced effect of the home training on the participants' behavior was the increase in their use of labeled and unlabeled praise. However, as indicated earlier, two of the participants began the training immediately after or during an ascending baseline. A graphic presentation of the session-by-session data

for all three participants is shown in Figure 4.

A visual inspection of the praise data does not clearly show uniformly ascending baselines for the first two participants; but rather, a large amount of between-session variability across all three participants. For example, during the baselines for all three participants, there were five between-session percent score increases, five decreases, and two cases of zero changes in scores. (After training was conducted, there were 10 between-session increases, six decreases, and no cases of zero change.)

During the follow-up sessions, each participant exhibited approximately double the mean percent of praise that was displayed in the baseline phase. Therefore, the increases which occurred during the training phase were maintained over a 2-month time span after training was ended. For each phase, the mean and median percentages of intervals in which cooperative behaviors were praised are shown in Table 1.

Based on the tabular presentation of the data alone, it is apparent that the behavioral training increased the frequency of the expectant mothers' positive interactions with the children. For all participants, the treatment (t) and both follow-up (f) means were greater than the baseline (b) means. The probability of this outcome oc-

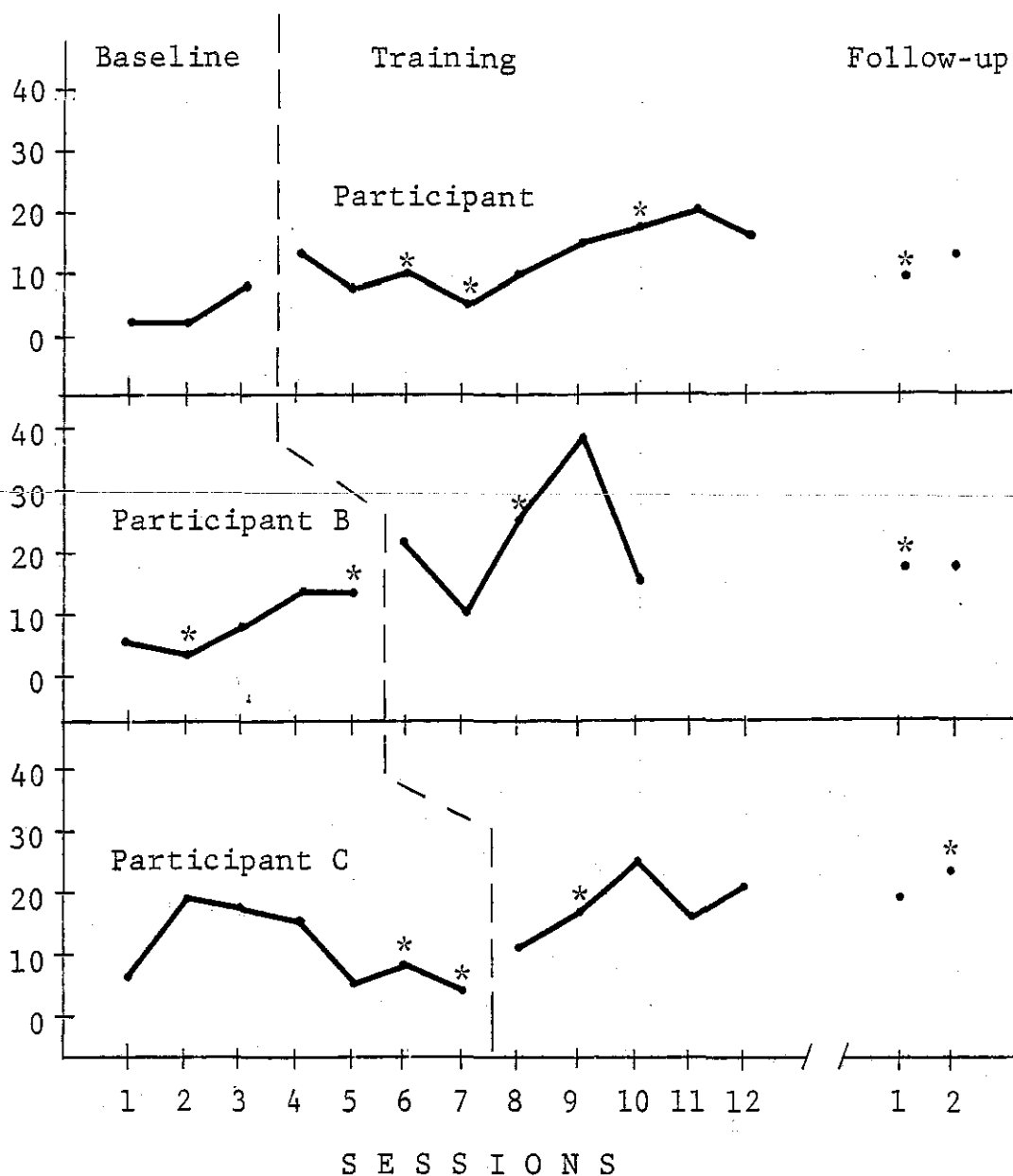


Figure 4. Percentage of session intervals of cooperative child behavior that were accompanied by instances of praise (labeled and unlabeled) from Participants A, B, and C.

*Reliability probes.

Table 1
 Mean^a and Median Percent of Intervals of Child
 Cooperative Behavior in which Participants
 Praised (Labeled and Unlabeled) the Cooperative
 Child Behaviors

Participant	Baseline	Training	Follow-up 1	Follow-up 2	
A	Mean	4.2 (120)	12.8 (338)	10.0 (40)	12.5 (40)
	Median	2.5	12.5		
B	Mean	8.3 (194)	22.1 (196)	17.5 (40)	17.5 (40)
	Median	7.7	20.5		
C	Mean	10.2 (233)	17.9 (146)	18.9 (37)	22.5 (40)
	Median	8.5	16.0		

^aNumbers in parentheses indicate the number of intervals over all sessions in each phase in which each child was scored as exhibiting cooperative behavior.

curing by chance alone can be calculated by determining the probability of observing $t > b$ and $f > b$ for all three participants (assuming the null hypothesis that $p(t > b) = p(b > t)$ and $p(f > b) = p(b > f)$). The calculation of the probability is also based on the assumption that each mean is independent of each other mean (2^6). Of the 64 possible conditions, the observed extreme outcome in the predicted direction represents a probability of 1/64 of occurring by chance alone. (For the actual computations involved in the probability calculation, see Appendix M). Taking into account the low probability that the results of the program could have occurred by chance, it is more plausible to conclude that the increased rates of praise are a result of the training.

A somewhat parallel change in a second dependent measure was the recorded increases in the participants' attempts to change the child's oppositional behavior (i.e., the combination of ignoring, correcting, and/or statements of a contingency for oppositional behavior). Although this effect was not as obvious as the change in frequency of praising, there was a substantial increase from the baseline to the training mean for one participant. As shown in Table 2, two participants increased their use of behavior reduction techniques following

Table 2

Mean^a Percentage of Intervals of Oppositional Behavior in which the Participants Ignored, Corrected, and/or Made Statements of a Contingency to the Child's Oppositional Behavior

Participant	Baseline	Training	Follow-up 1	Follow-up 2
A	*	56.1 (22)	*	*
B	33.3 (6)	66.7 (4)	*	*
C	18.4 (47)	55.8 (54)	100.0 (3)	*

*Instances of oppositional behavior were not recorded during the period.

^aNumbers in parentheses indicate the number of intervals over all sessions in each phase of the study in which each child exhibited oppositional behavior.

the onset of training. Participant C's child had the highest rates of oppositional behavior; more instances of oppositional child behavior provided Participant C with more opportunities to utilize these skills.

A third and more global measure of the change in the participants' behavior towards the child can be obtained by combining the raw scores for the behavior-change techniques used by all three participants. The sum of all techniques recorded (i.e., labeled and unlabeled praise, statements of a contingency, and ignoring and/or correcting oppositional behavior) serves as a general index of use of management techniques. This global score for each participant during all phases of the study is shown in Table 3. All three participants used management techniques at least twice as frequently in training as they did in baseline. Additionally, follow-up session global means remained at nearly double the baseline means.

Discussion

Based on the results of the present study, it is apparent that expectant parents can learn to apply the child management techniques of the behavior modification parent training model. After being taught behavior modification tools, expectant parents will increase their rate of positive attention in working with young chil-

Table 3
Mean Number of the Intervals Per Session Dur-
ing Each Phase Showing Participant Use of A
Behavior Management Skill^a

Participant	Baseline	Training	Follow-up 1	Follow-up 2
A	1.7	6	4	5
B	3.6	10.4	7	7
C	5	10.2	10	9

^aLabeled and Unlabeled Praise, Statements of a Contingency, and Ignoring and/or Correcting of Oppositional Child Behavior.

dren.

An aspect of the study which has not been addressed is the increasing trends shown in the praise data immediately before training was started for Participants A and B. The training, which was designed to increase the participant's issuance of praise following cooperative child behavior, was started when that behavior was already increasing. This mistake should not be repeated. On future investigations of this type, one or more precautionary measures can be taken to avoid the difficulties encountered in the present study. Researchers must insure that training begins only after the baselines for each participant are either descending or are stable. If the data are to be collected by way of videotaped behavioral observations, the principal researcher or an assistant should view each tape on the day it is recorded. Unfortunately, the method of data collection used in the present study, i.e., videotapes observed in random order after they had all been recorded (in order to prevent observer bias), did not include such an independent means of acquiring and using the trend information to determine the onset of training. By previewing the videotapes, the researcher can ensure that training begins after each participant's baseline is stable.

The erratic session-by-session changes in the participants' praise may have been due to the brief samples of time used for the observations. Each session consisted of a total 6 min and 40 sec of actual observation time drawn from one period of the day. Events in the social environments of all participants were beyond the control of the researcher, e.g., "morning sickness" which might decrease the participant's issuance of praise and attention to the child. Additionally, the child-participants' behavior may have fluctuated depending on the period of the day in which the session was conducted, i.e., a child might tend to behave oppositionally only during the morning observations. Therefore one methodological problem that should have been resolved before the study's onset was the short time period sampled; daily observations during both morning and afternoon times would yield a better representation of the participants' management behavior.

With other factors held constant, the ascending baseline problem could have been avoided by using a group pre-test/post-test design instead of the single subject multiple baseline design. Using a group design, direct behavioral observations or paper-and-pencil tests (e.g., Appendix J) could serve to assess participant use

of the behavior modification techniques. In 1978, O'Dell, Tarler-Benlolo, and Flynn developed and validated the Knowledge of Behavioral Principles as Applied to Children (KBPAC) inventory for parents enrolled in behavior modification counseling classes. The KBPAC is a 50-item multiple choice test which samples from a broad range of behavior modification principles and procedures. The test could serve as a dependent measure for future expectant parent training programs.

The expectant mothers increased their use of statements of a contingency and of two behavior reduction techniques when the child was behaving oppositionally (Table 2). Additionally, it is apparent from Table 3 that the participants become substantially more active in using the identified management techniques to alter each child's behavior.

As shown in Appendix L, most of the behaviors monitored either occurred at a low rate or did not occur at all during the observed intervals. This result suggests that there were too few behaviors selected for observation and/or the method for conducting the observations was insensitive to subtle changes in the participants' behavior. In the former case, an instrument should be selected for use that samples a wider range of social behaviors. For example, Patterson, Cobb, and Shaw's

(1969) Manual for the coding of family interactions consists of 29 categories of parent and child behaviors. If the Patterson, et al. instrument were used during the 10-min observations, significantly more information would be collected. Since the participants were not given specific instructions on how to behave during their interactions with the children, the main effect of training might have been evident in behaviors not selected for observation, e.g., a reduction in the rate of criticizing by the participant or an increase in smiling behavior on the part of the child-participant.

In spite of the methodological problems encountered, expectant parents can be trained in behavior modification techniques. An implication of this result is that parents can prepare for parenthood by learning management techniques before they have their children.

Currently, expectant and pre-parent education classes are conducted in the public schools and through private organizations. The topics covered in these classes range from infant development and care (Beebe, 1978) to alternative strategies for resolving family conflicts (Valentine-Dunham & Gipson, 1980). Despite the broad range of topics covered, there is often little or no emphasis placed on educating expectant parents in systematic child management. However, a behavior modi-

fication approach offers a viable method to teach parents how to structure the social environment of young children in order to foster desirable behaviors in the child. Teaching expectant parents these skills is a preliminary step in preventing future child-related problems and therefore maximizing the potential of future adults.

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Footnotes

¹The term, "behavior modification" in parent training is also referred to by other researchers as "social learning," "behavioral management," "behavioral parenting," and "contingency management."

²The author's special thanks go to Jan Marsh and Sally Tankerslee, the directors of Busy Days Nursery School at 2629 N. Pershing and A-B-C Nursery School at 2220 West Alpine Avenue (respectively). Jan, Sally, and their staffs gave the author a warm and open reception throughout the study. Without their assistance, this study would not have been possible.

APPENDICES

- A. Parental consent form/letter for child-participants
- B. Recruitment letter given to local physicians
- C. News release describing expectant parent training program
- D. Participant letter/contract
- E. Behavior interval-recording sheet
- F. Behavior definitions for participant and child-participant
- G. Behavior recording summary sheet
- H. Randomized order of tape observations
- I. In-home meeting lesson plans
- J. Abridged Test for Families and Living with Children
- K. Unabridged Test for Families and Living with Children
- L. Raw score data
- M. Algebraic computations

Appendix A. Parental consent form/letter for child-
participants

Dear _____,

The purpose of this letter is to request that you allow your child, _____, to be a "child-participant" in a study being conducted by the staff of the University of the Pacific Psychology Department.

The study consists of teaching expectant parents child care and management skills. Your child was selected as a participant for two reasons: First, the staff at the _____ report that your child attends the center on a regular basis; and second, your child is reportedly an active but not disruptive child.

A major component of the study is providing "hands-on" experience with children at a day care center or nursery school. Your child's participation in the study will consist of spending 10 minutes on 14 separate occasions interacting with an expectant mother participant in a semi-structured activity. The content of each 10 minute interaction period will be the following:

a) the expectant mother will provide praise and attention to your child for engaging in desirable interaction with other children, with day care center or nursery school staff, and with the expectant mother. Your child will also receive praise and attention for engag-

Appendix A continued.

ing in appropriate play by him/herself; and b) the expectant mother will withhold praise and attention to your child for engaging in any undesirable or non-compliant behavior.

During the 10 minute interaction period your child and the expectant mother will be videotaped; the videotapes will be reviewed by the expectant mother for feedback and by two students from the University of the Pacific to monitor the adult-child instructions. After the program is completed (on or before August 30, 1980), the videotapes will be erased. The written records drawn from this study will maintain the anonymity of all expectant mothers and children involved.

The persons conducting this study accept the responsibility to establish and maintain ethical research practices as informed by the American Psychological Association's 1973 statement on Ethical Principles in Conduct of Research with Human Participants. The parents of the children involved in the day-care interaction sessions may discontinue their children's participation at any time without penalty. There is no known physical or mental discomfort, harm, or danger to participation in the study to either the women or the children involved in the study. The following research

Appendix A continued.

agreement will be signed by the parents of the children in the study.

I hereby agree to allow my child, _____, to participate in the study described above. While the results of the study will be used in a public report, my child's participation will remain confidential. If at any time I decide to withdraw my child from participating in the study, I will meet with the below-named staff to discuss keeping my child with the program.

Sincerely,

Kenneth L. Beauchamp

Professor of Psychology

Dudley Blake

Graduate Student, Psychology

I have read and understand the purpose and procedures of this project and give my voluntary consent to allow my child to participate in the study described above.

Signature (Mother) Date

Signature (Father) Date

Appendix B. Recruitment letter given to local physicians

Are you interested in learning ways
to become an effective parent
before you have your child?

A special program is underway through the University of the Pacific Psychology Department designed to teach expectant parents effective ways of working with children. Participants will learn parenting skills that may help get their "parenting career" off to a good start!

All techniques that will be taught have been shown to be effective for thousands of parents in the rearing of their children. The expectant parent education program will consist of six individualized 1-hour training sessions and at least twelve 1-hour "hands-on" training sessions at a children's day care center here in Stockton (18 hours in all). The participants in this program will learn methods to increase the cooperation and positive behaviors of their child as well as ways to decrease their child's negative behaviors. Learning these techniques can be very helpful in the development of a warm and loving parent-child relationship.

All training and practicum sessions are FREE OF CHARGE.

For further information, contact Dr. Kenneth Beauchamp or Dudley Blake at the Psychology Department at UOP, 946-2132. If you are interested now, leave your name and phone number with _____, and you will be contacted immediately by Ken or Dudley, who will explain further details of the program and set up times for your individualized instruction.

Appendix C. News release describing expectant parent
training program

Expectant Mothers Want for UOP Study

STOCKTON--Expectant mothers are wanted for a re-
search project at University of the Pacific.

Dudley Blake, a graduate student in psychology,
is doing the study involving women expecting their
first child. Planned to help the women learn to have
a rewarding learning relationship with their child, the
program consists of six hours of training at the uni-
versity and twelve hours of experience with children at
a day care center.

"In addition to learning valuable strategies for
interacting with young children," explained Blake, "the
expectant mothers who participate will receive a \$50
savings bond for the child."

Dr. Kenneth L. Beauchamp, a psychology professor
at UOP and Blake's advisor, added, "This is an oppor-
tunity for the mother to get valuable training at no
charge to her."

The program will begin in May, and those who are
interested should contact Blake at 465-0816 or 946-2132.

Appendix D. Participant letter/contact

Dear _____,

The purpose of this letter is to request your participation in a parent education study conducted by staff members of the University of the Pacific. As you already know, the study is concerned with teaching expectant parents special ways of working with children.

The project has been reviewed by Dr. Martin Gipson, Professor and Chairman of the Psychology Department, and by the Faculty Research Committee at the University of the Pacific.

The persons conducting the study accept the responsibility to establish and maintain ethical research practices as informed by the American Psychological Association's 1973 statement on Ethical Principles in Conduct of Research with Human Participants. The women participants in the study will be informed of the purpose and procedures of the study; there will be no deception employed. The women may discontinue participation at any time, with no penalty other than not receiving the \$50 savings bond promised them at the onset of the study. The parents of the children involved may also discontinue their children's participation at any time without penalty. There is no known possibility of physical or mental discomfort, harm, or danger to par-

Appendix D continued.

participation in the study to either the women or the children involved in the study. The following research agreement will be signed by the women participants.

Your participation in the study will consist of four individualized, 1-½ hour, training sessions with Mr. Dudley Blake, and at least 12 "hands-on," 1-hour training sessions at a Stockton day-care center or nursery school. During each day-care/nursery school session, 10 minutes of your interaction with a child will be videotaped for feedback purposes. You will be asked to read a published parent education text (Living with Children); you and Mr. Blake will discuss your understanding of this reading. You will be asked to return to the day-care center or nursery school twice: once at one month and once at two months after training ends.

The videotapes will be viewed by the below-named staff and by two paid undergraduates who will record the adult-child interactions. The videotapes produced at each day-care center/nursery school session will be erased at the completion of the study (on or before August 30, 1980). The written records drawn from the videotapes and all publications that may result from this study will maintain the anonymity of all expectant mothers and children involved.

Appendix D continued.

Your obligations will include: (1) attending the four training sessions; (2) attending the twelve or more training/feedback sessions at a Stockton day-care center or nursery school; and (3) reading and discussing with Mr. Blake the parent education text (Living with Children). The UOP staff's obligations include providing the training and constructive feedback at no charge to you and giving you a \$50 U. S. savings bond at the final day-care center/nursery school session. While the results of the study will be used in a public report, your participation will remain confidential. If at any time you feel unable to continue your participation in the study, you will meet with the below-named staff to discuss remaining with the program.

Sincerely,

Kenneth L. Beauchamp

Professor of Psychology

Dudley Blake

Graduate Student, Psychology

I have read and understand the purpose and procedures of this project and voluntarily consent to participate in the study described above.

Signature

Date

Appendix E. BEHAVIOR INTERVAL-RECORDING SHEET

Participant's Name: _____ Date: _____/80

Primary O: _____ Reliability O: _____

Time Begin: _____ Time End: _____ Condition: _____

Obsvn	Participant				Child		Obsvn	Participant				Child	
1.	I/C	Pr	LP	SC	C	0	21.	I/C	Pr	LP	SC	C	0
2.	I/C	Pr	LP	SC	C	0	22.	I/C	Pr	LP	SC	C	0
3.	I/C	Pr	LP	SC	C	0	23.	I/C	Pr	LP	SC	C	0
4.	I/C	Pr	LP	SC	C	0	24.	I/C	Pr	LP	SC	C	0
5.	I/C	Pr	LP	SC	C	0	25.	I/C	Pr	LP	SC	C	0
6.	I/C	Pr	LP	SC	C	0	26.	I/C	Pr	LP	SC	C	0
7.	I/C	Pr	LP	SC	C	0	27.	I/C	Pr	LP	SC	C	0
8.	I/C	Pr	LP	SC	C	0	28.	I/C	Pr	LP	SC	C	0
9.	I/C	Pr	LP	SC	C	0	29.	I/C	Pr	LP	SC	C	0
10.	I/C	Pr	LP	SC	C	0	30.	I/C	Pr	LP	SC	C	0
11.	I/C	Pr	LP	SC	C	0	31.	I/C	Pr	LP	SC	C	0
12.	I/C	Pr	LP	SC	C	0	32.	I/C	Pr	LP	SC	C	0
13.	I/C	Pr	LP	SC	C	0	33.	I/C	Pr	LP	SC	C	0
14.	I/C	Pr	LP	SC	C	0	34.	I/C	Pr	LP	SC	C	0
15.	I/C	Pr	LP	SC	C	0	35.	I/C	Pr	LP	SC	C	0
16.	I/C	Pr	LP	SC	C	0	36.	I/C	Pr	LP	SC	C	0
17.	I/C	Pr	LP	SC	C	0	37.	I/C	Pr	LP	SC	C	0
18.	I/C	Pr	LP	SC	C	0	38.	I/C	Pr	LP	SC	C	0
19.	I/C	Pr	LP	SC	C	0	39.	I/C	Pr	LP	SC	C	0
20.	I/C	Pr	LP	SC	C	0	40.	I/C	Pr	LP	SC	C	0

Appendix F. Behavior definitions for participant and
child-participant

Participant/Expectant Mother Behaviors

Ignore/Correct (I/C)

I - Any time the participant withdraws attention, i.e., diverts eyes, discontinues physical contact and engaging in activity with the child-participant, and/or turns her body more than 45° away from the child-participant for more than 3 seconds, as a consequence of the child's oppositional behavior.

C - Any time the participant vocalizes or verbalizes a clear disapproval of the child's oppositional behavior, e.g., "No, don't throw the blocks on the floor," "I don't like it when you yell like that," or "Come back to the table."

Physical Positive or Unlabeled Praise (Pr)

Verbal statement indicating the participant's liking or approval of the child's behavior, but without specifying exactly what behavior is liked, e.g., "That a way," "Nice job," "That's good." This approval may be expressed in statements without content indicating appreciation, but in the inflection or intonation of the statements or words spoken. Any time the partici-

Appendix F continued.

pant touches the child or pats him/her on the back as a sign of approval.

Descriptive Reinforcement or Labeled Praise (LP)

Any statement indicating approval and specifying exactly what act or event the child is being approved of by the participant, e.g., "I like the way you put that house together," or "Thank you for putting those blocks away."

Statement of a Contingency (SC)

Any request or command on the part of the participant in which the behavior that is desired is specified and the consequences which will result is included, e.g., "If you put the books away, you can go have your snack when we're done," or "As soon as you sit up like a 'good boy/girl,' I will read from the storybook again."

Follow-through of a Stated Contingency (SC with slash)

Whenever the participant has stated a contingency and actually provides the stated consequence, depending on whether the request or command is complied with, i.e., the participant does what she says she will or will not do, during the specific interval that the request is made or in the following interval.

Appendix F continued.

Child Behaviors

Cooperative Behavior (C)

Child's active compliance with a request or instructions from the participant; touching the expectant mother in a positive or neutral manner; accepting or handing task materials from/to the participant; eyes directed towards and hands touching task materials; and engaging in nondisruptive conversation or play with the expectant mother or with other children.

Oppositional Behavior (O)

The breaking, tearing, throwing, grabbing of, or scribbling on task materials; climbing, standing, pounding, or marking on furniture; opening drawers or cabinets without permission; screaming, shouted refusals, crying, verbal threats or name-calling; hitting, kicking, or pinching the expectant mother or other children; running about the school (leaving the area without being requested to or without permission); active non-compliance, cutting clothing, inserting task materials or fingers in nose, ears, or mouth; scratching or marking on self; fingering chewing gum or saliva; and stamping feet.

At any time in which the child has to be restrained, warned, or physically guided to perform a task, an "O" should also be marked for the respective interval.

Appendix G. Behavior Recording Summary Sheet

I. Number of "Cooperative" Child Behaviors:	<input type="checkbox"/>	_____
II. Number of "Labeled Praise" to Cooperative Child Behavior:	<input type="checkbox"/>	_____
III. Number of "Pr" to Cooperative Behavior:	<input type="checkbox"/>	_____
IV. Number of "Statement of a Contingency":	<input type="checkbox"/>	_____
V. Number of SC Follow-through:	<input type="checkbox"/>	_____
VI. Number of "Oppositional" Child Behaviors:	<input type="checkbox"/>	_____
VII. Number of PR or LP to Oppositional:	<input type="checkbox"/>	_____
IX. Number of "Ignore" to Oppositional:	<input type="checkbox"/>	_____
X. Number of "Correct" to Oppositional:	<input type="checkbox"/>	_____

Participant: _____ Date: _____

Observer: _____ Reliability: YES NO

Rel. Observer: _____ Overall Reliability: _____ %

Session: _____ Condition: _____

Comments:

Appendix H. Randomized order of tape observations

<u>A</u>	<u>B</u> ^a	<u>C</u>
9	5*	1
2	3	10
6	7	9*
11	6	4
12	8*	2
4	1	11
10*	4	6*
5	9	12
1	2*	5
8	12	8
7*	10	7*
3	11	3
- Follow-ups -		
1*	1*	1
2	2	2*

^aSessions #11 and #12 for Participant B were not recorded due to videotape machine malfunction.

*Reliability probes. Inter-observer agreement was greater than or equal to .90 during all probes.

Appendix I. In-home meeting lesson plans

Lesson Plan 1

- I. History and diversity of parent education philosophy.
 - A. 17th Century government appointed "tithingmen"--agents of moral surveillance.
 - B. Use of pamphlets to disseminate parent information for 100-150 years.
 - C. Rise of formal parenting approaches after the mid-1800's (e.g., Child Study Association of America, PTA, etc.). Parent education becomes "...the purposeful attempt to change the behavior of parents in order to effect a desirable change in the behavior of their children."
 - D. Recent formal approaches--most popular.
 1. Dr. Benjamin Spock (The Baby and Child Care, 1947); primarily concerned with preserving the "free will" and the natural predisposition of children. Many children in the 1950's (the parents of today) were raised by Spock's philosophy. Discuss.
 2. Thomas Gordon (Parent Effectiveness Training, 1970): The most popular ap-

Appendix I continued.

proach today (200,000 parents trained by 1970). Deals mostly with older children (verbal), telling the parents how to effectively work out crisis situations with their children: "No-lose" method of conflict resolution, "I-messages," etc. Discuss.

3. Haim Ginott--"childrenese"--See book. Discuss.

4. Gerald Patterson (Families, Living With Children, etc.), Wesley Becker (Parents Are Teachers, 1970); the behavioral social learning approach behavior is, for the most part, learned. Outgrowth of behavior modification.

II. A new perspective--looking at interactions with the world in terms of observable behavior in the real environment.

A. A very important and useful way to view your child.

1. Do not get tied up with the notion of causality, e.g.:

Child hits sister--why? A child is a brat. This approach does not direct-

Appendix I continued.

- ly handle the problem and ends up with a label for the child resulting from circular reasoning. Other e.g.'s: Hyperactive, spoiled, ornery, "bad genes," autistic, etc.
2. When looking at overt behavior, you have something that is discrete, measurable, and manageable for parents.
 3. Patterson's format. All of the child's behavior (good or bad) is learned and can be changed. Behavior is a function of the consequences which follow it.
 - a) Behavioral deficits.
 - b) Behavioral excesses.
 - c) Behavioral inappropriates.
 4. Reading assignment in Living With Children: Section 1, pp. 1-46.
 5. Next session's quiz on reading material.
 6. Definition of cooperative behavior. Instructions to Mom to use social reinforcement after child's cooperative behavior.

Lesson Plan 2I. Comprehension Quiz for Living With Children.

Appendix I continued.

II. Positive Reinforcement--review and elaboration.

A. Use of contingent reinforcement: Social and non-social.

1. Contingent roughly means dependent, i.e., "If you behave, you will get my attention." A reinforcer is contingent on whether a behavior occurs or not; a child begins to associate the behavior with the good consequence. Behavior is learned and maintained by the consequences which follow it--this goes for desirable and undesirable behavior (to the parent).

B. Consistency: "Do it every time."

1. Undesirable behavior: Child learns he/she can "get away with it" every so often, or if he/she only cries/tries a little bit harder each time.
2. Desirable behavior: Child more quickly learns that the behavior is "good," i.e., is associated with a desirable consequence and the parent

Appendix I continued.

wants the child to behave in that manner.

- C. Immediacy: Right after the behavior occurs. Studies with parents managing children have determined this a fairly critical variable in the child's learning of desired behavior. One-half to one second optimum effectiveness.

III. Using positive reinforcement with behavior that occurs at low rates or does not occur at all: Behavioral deficits.

- A. Shaping. Reinforce successive approximations to the desired terminal behavior.
- B. Chaining: Break up behavior into specific components and reinforce the child for accomplishing greater numbers of these steps on each attempt.

IV. Two general consequences which affect behavior:

- A. Reinforcement--a consequence which increases behavior.
- B. Punishment--a consequence which decreases behavior.

(*Both are defined by their effect on behavior*)

Appendix I continued.

- V. Effective punishers to use with children (punishment for little people):
 - A. Extinction: Not reinforcing a previously reinforced behavior, e.g., "ignoring," or "turning away."
 - B. Time-out: Time out from positive reinforcement, e.g., "the naughty chair."
- VI. Reading assignment in Living With Children:
Section 2, pp. 46-67.

Lesson Plan 3

- I. Feedback on comprehension.
- II. A second look at ways to influence behavior.
 - A. Reinforcement
 - 1. To increase behavior.
 - 2. To teach new, desirable behavior.
 - B. Punishment: To decrease undesirable behavior.
 - 1. Punishment by application: Child does something the parent cannot and should not tolerate and administers an aversive consequence, e.g., spanking, verbal reprimands (scolding), washing mouth out with soap, making child do tedious chores, etc.

Appendix I continued.

2. Punishment by removal: More ethical and often more effective. Child does something undesirable, and the parent takes something away from the child as a consequence.

a) Response cost: Losing allowance, restriction, already earned activity, toys, etc.

b) Time-out: "Naughty chair."

NOTE: Why punishment by application is bad to use:

A. Child builds a tolerance for it.

B. Temporarily suppresses behavior.

C. Does not teach anything new to child.

D. Results in emotional behavior from child.

1. Fear, frustration, and anxiety.

2. Anger and aggression.

E. Teaches child to use punishment.

F. Addictive to user (parent).

III. Negative Reinforcement: How the "laws" of learning may work against the parent.

Appendix I continued.

IV. Practice: Extinction and Time-out.

V. Observing/Pinpointing Behavior.

A. "Label" the behavior.

B. Define the behavior.

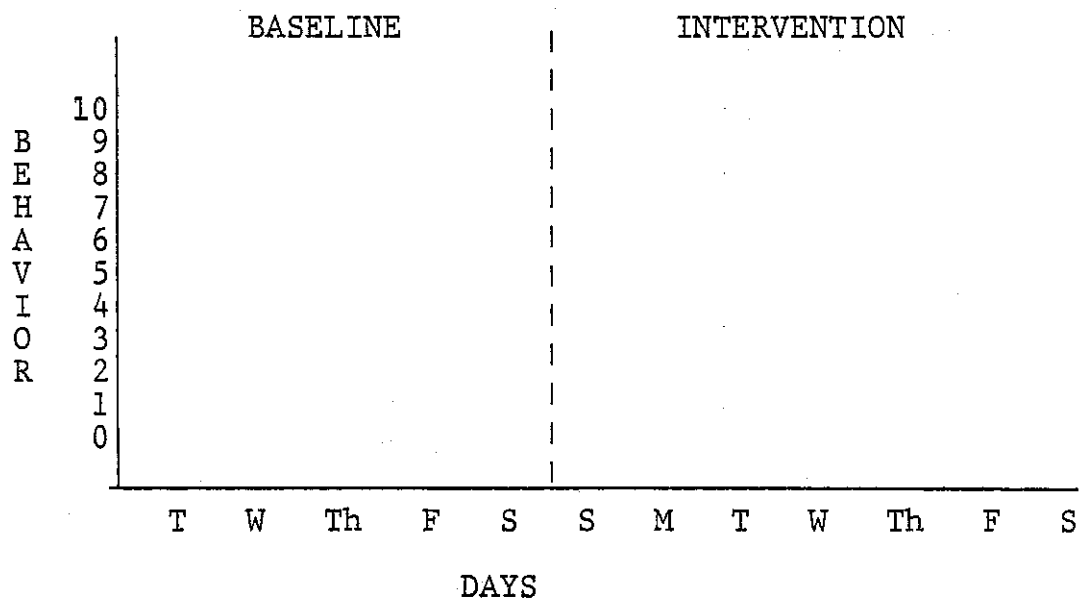
1. Mother and father may not see the same thing.

2. One parent may judge the behavior differently from time to time.

3. Parents can measure the behavior.

C. Find out how often the behavior occurs--
BASELINE.

D. Graphing:



E. Importance of baseline and intervention measurements.

Appendix I continued.

1. Can tell if what you are doing works.
2. Parents become more sensitive to when the child is acting in an undesirable or desirable fashion.

VI. Reading Assignment in Living With Children,
Section 3, pp. 68 to end of book.

Appendix J. Abridged Test for Families and Living With Children

Name _____ Date _____, 1981.

Directions: Write the word or words that will complete the sentence. Most blanks have a clue as to what the best answers are. However, you might not be able to give the best answer, but might have one that will do just as well--write that answer instead.

1. Behavior can be ch _____.
2. Reinforcers st _____ behavior.
3. Close attention, a touch, words of approval, a smile, a glance, or a kiss are examples of _____ reinforcers.
4. Ignoring a child's behavior, if used over a long period of time, will w _____ the behavior.
5. If you like the behavior, _____ it.
6. When attempting to strengthen a behavior, _____ it and do it _____ time.
7. Reinforcing small steps on the way to the desired behavior is called sh _____.
8. When considering a behavior change problem, plan to w _____ the problem behavior and _____ the pro-social behavior.
9. For best results in teaching a child good behavior, punishment should be used as _____ as possible.
10. It is often very helpful if the entire _____ participates in teaching the child desirable behavior.
11. The child receives reinforcement from the very first step. As he/she progresses, the steps will become _____, and he/she will have to do _____ to earn the same _____.
12. For most people, another person listening to them talk _____ a reinforcer.
is/is not

Appendix J continued.

13. When using mildly punishing consequences to
w_____ a behavior, use reinforcement to
strengthen some set of behaviors to take its place.
14. When you are talking, friends reinforce you by
_____.
15. When you are teaching a child a new behavior, you
must break the behavior down into small _____
and reinforce the child _____ after the
behavior takes place.
16. Before you change a child's behavior, you must
_____ it.
17. Putting a child in a quiet, isolated, very dull
place for a short period of time immediately fol-
lowing an undesirable behavior is called "_____
_____".
18. Pinpointing means being sp_____.
19. One of the first requirements for effective use of
time-out is that it must be in a non-r_____
place.
20. Time-out should last from _____ to _____ minutes.

READ EACH STATEMENT. If you think it is true, put a
"T" beside each statement.
If you think it is false, put an
"F" beside it.

- _____ 21. A positive reinforcer is the same as a re-
ward.
- _____ 22. Behavior is strengthened if it is reinforced.
- _____ 23. To teach a behavior you want, it is necessary
to reinforce that behavior.
- _____ 24. There are very few reinforcers that can be
used in teaching the behavior you want.
- _____ 25. Behavior that is not reinforced will proba-
bly get weaker.

Appendix J continued.

- _____ 26. It is possible to teach undesirable behavior by rewarding it.
- _____ 27. Getting his parent's attention is almost always a powerful reinforcer for a child's behavior.
- _____ 28. After a desirable behavior is learned, it does not need to be reinforced.
- _____ 29. It is very important for parents to be consistent in using positive reinforcers.
- _____ 30. One difficulty with punishment is that it is generally upsetting, both to the person punished and to the punisher.

There are three common mistakes parents may make in teaching good behavior to their children.

31. They do not reinforce the child's behavior _____ after it occurs.
32. They take good behavior for _____.
33. They do not reward each _____.

Three examples of non-social reinforcers are:

34. _____.
35. _____.
36. _____.

Four examples of social reinforcers are:

37. _____.
38. _____.
39. _____.
40. _____.

Appendix K. Copy of "Test for Families and Living
with Children."

Name _____ Date _____
Score _____

Directions: Write the word or words that will complete the sentence. Most blanks have a clue as to what the best answers are. However, you might not be able to give the best answer, but might have one that will do just as well — write that answer instead.

1. Behavior can be ch_____.
2. Reinforcers st_____ behavior.
3. Close attention, a touch, words of approval, a smile, a glance, or a kiss are examples of _____ reinforcers.
4. The person in the family who gives the most punishment receives the most _____.
5. Ignoring a child's behavior, if used over a long period of time, will w_____ the behavior.
6. If you like the behavior, _____ it.
- 7-8. When attempting to strengthen a behavior, _____ it and do it _____ time.
9. Reinforcing small steps on the way to the desired behavior is called sh_____.
- 10-11.* If a planned program does not work, the _____ may be too large, the _____ may be too weak, or you might be mixing in a good deal of p_____.
- 12.* The problem with families who have aggressive children is that they do not track the hitting, teasing, and noncompliant behaviors, nor do they apply consistent con _____ when those behaviors occur.
14. Noncompliance means that the parent makes a request and the child does not _____.
15. Riding a bike, playing with friends, or having no chores to do are examples of _____ reinforcers.
16. A contract lists the sp_____ things which a child may do and the number of points earned for each.
17. In setting up programs, keep the steps _____ and specific.
18. Behaviors that turn off painful stimuli are r_____.
19. Pinpointing means being _____.
20. When considering a behavior change problem, plan to w_____ the problem behavior and _____ the prosocial behavior.
- 21.* _____
22. First _____ and count the behaviors.
23. Second, plan a program that specifies the g_____ you wish to achieve.
24. Third, specify the _____ required to get there.
25. The social learning approach assumes that you are responsible for your own _____.
26. To be able to observe, you must first be able to p_____.
- 27.* Baseline observations should cover at least three or four _____.
28. One of the first requirements for effective use of time-out is that it must be in a non-r_____ place.
- 29-30* Time-out should last from _____ to _____ minutes.

Those items asterisked () were shown to be most discriminating. This was based upon a two-stage analysis using 19 mothers and 13 fathers from the clinical sample. The distribution of the responses to each of the items were plotted. Those items in which the percent correct varied from 21% to 80% were retained for the second stage.

In the second stage, each of the 31 items remaining was correlated with the total score for that set of items. Thirteen of these correlated at $p < .05$ with the total score. The alpha for the 13-item scores from this subset was 9.5, the S.D. was 1.7.

Next, the responses to the test were obtained from 10 mothers of normal preschool children. Presumably, none of these mothers had read books on social learning theory nor had they taken courses in this subject matter. These middle-class mothers had volunteered for an experiment on normal children. For this tiny sample, the mean for the 13-item scale was 6.0 with a S.D. of 2.2. None of them had a score of 10 and only one had a score of 9.

The Achievement Test is currently being improved. The revision will be presented in the next edition of this manual.

Appendix K (continued).

31. In contingency management we make it necessary to _____ the good things in life.
32. A contract lists the sp_____ things which a child may do and the number of points earned for each.
- 33.* Discussion should be used to neg_____ behavior changes with adults.
- 34-35. Choose a regular t_____ and p_____ for such negotiations.
36. In attempting to work out behavior change program with adolescents and adults, neg_____ is mandatory.

READ EACH STATEMENT.

If you think it is *true*, put a "T" beside that statement
If you think it is *false*, put an "F" beside it.

- _____ 37. A positive reinforcer is about the same as a reward.
- _____ 38. Behavior is strengthened if it is reinforced.
- _____ 39. To teach a behavior you want, it is necessary to reinforce that behavior.
- _____ 40. There are very few reinforcers that can be used in teaching the behavior that you want.
- _____ 41. Behavior that is not reinforced will probably get weaker.
- _____ 42. It is possible to teach undesirable behavior by rewarding it.
- _____ 43. Getting his parents' attention is almost always a powerful reinforcer for a child's behavior.
- _____ 44. After a desirable behavior is learned, it does not need to be reinforced.
- _____ 45. It is very important for parents to be consistent in using positive reinforcers.
- _____ 46. One difficulty with punishment is that it generally is upsetting, both to the person punished and to the punisher.

FILL IN the blanks in the following statements. In some cases there are several correct responses possible.

47. When using mildly punishing consequences to w_____ a behavior, use reinforcement to strengthen some set of behaviors to take its place.
48. When you are talking, friends reinforce you by _____
49. When you are teaching a child a new behavior you must break the behavior down into small _____
- 50.* and reinforce the child _____ after the behavior takes place.

There are three common mistakes parents may make in teaching good behavior to their children:

- 51.* They do not reinforce the child's good behavior _____ after it occurs.
- 52.* They take good behavior for _____
- 53.* They do not reward each _____ step.
54. For best results in teaching a child good behavior, punishment should be used as _____ as possible.
55. It is often very helpful if the entire _____ participates in teaching a child desirable behavior.
56. The child receives reinforcement from the very first step. As he progresses, the steps will become
- 57-58. _____, and he will have to do _____ to earn the same _____.
59. For most people, another person listening to them talk _____ a reinforcer.
is / is not

Three examples of non-social reinforcers are:

60. _____
61. _____
62. _____

Three examples of social reinforcers are:

63. _____
64. _____
65. _____

In general, staring out a window _____ a reinforcer for your spouse talking to you.
is / is not

66. Before you change a child's behavior, you must _____ it.
- 67.* The task in teaching new behavior is to find ways to _____ the undesirable behavior and to
- 68.* strengthen the _____ behaviors.
69. Your success in a behavior modification program depends partly on your thinking up ways in which your child can practice the "new" behaviors (and be reinforced) many, many times. Setting up situations in such a way is sometimes called "_____ing."
70. Putting a child in a quiet, isolated, very dull place for a short period of time immediately following an
71. undesirable behavior is called "_____."
72. If behavior doesn't change, it is because of a bad _____ and you must change it.

Appendix L. Raw score data

Participant/Behavior	Session scores for each phase													
A	Baseline			Training									FU	
Coop child	40	40	40	40	40	40	39	40	40	29	40	30	40	40
LP to Coop	0	0	0	1	1	0	1	3	1	1	1	3	2	0
Pr to Coop	1	1	3	4	2	4	1	1	5	5	6	2	2	5
SC	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SC/FT	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Opp child	0	0	0	0	0	0	1	0	0	11	0	10	0	0
Pr/LP to opp	0	0	0	0	0	0	0	0	0	0	0	0	0	0
I to opp	0	0	0	0	0	0	0	0	0	4	0	0	0	0
C to opp	0	0	0	0	0	0	1	0	0	2	0	5	0	0
B	Baseline					Training							FU	
Coop child	37	40	39	39	39	39	39	40	38	40	*	*	40	40
LP to coop	0	0	0	0	1	0	0	3	3	0	*	*	0	0
Pr to coop	2	1	3	5	4	8	4	7	12	6	*	*	7	7
SC	0	0	0	0	0	0	3	0	4	1	*	*	0	0
SC/FT	0	0	0	0	0	0	3	0	2	0	*	*	0	0
Opp child	3	0	1	1	1	1	1	0	2	0	*	*	0	0
Pr/LP to opp	0	0	0	0	0	0	0	0	0	0	*	*	0	0
I to opp	0	0	0	0	0	1	0	0	0	0	*	*	0	0
C to opp	1	0	0	0	1	0	0	0	0	0	*	*	0	0

Appendix L continued.

Participant/Behavior	Session scores for each phase													
	Baseline							Training						
C														
Coop child	29	26	38	37	34	35	34	38	35	24	25	24	37	40
LP to coop	0	1	1	0	1	0	0	1	1	1	0	1	4	0
Pr to coop	2	4	6	6	1	3	1	3	5	5	4	4	3	9
SC	0	0	0	0	0	0	0	0	0	0	1	2	0	0
Sc/FT	0	0	0	0	0	0	0	0	0	0	1	1	0	0
Opp child	11	14	2	3	6	5	6	2	5	16	15	16	3	0
Pr/LP to opp	0	0	0	0	0	0	0	0	1	0	0	0	0	0
I to opp	0	0	0	0	0	1	0	0	0	9	4	0	3	0
C to opp	0	1	0	0	3	1	3	2	2	1	3	2	0	0

Appendix M. Algebraic computations

With Baseline = b, Training = t, and Follow-up = f, the probability question is this: What is the probability of $t > b$ and $f > b$ for all three participants? These outcomes can be called "TRUE" and their opposites "FALSE."

Given then $p(\text{TRUE}) = p(\text{FALSE})$ for all three participants, a 2×3 matrix of possible binomial outcomes can be drawn:

	$t > b$	$f > b$
A	TRUE, FALSE	TRUE, FALSE
B	TRUE, FALSE	TRUE, FALSE
C	TRUE, FALSE	TRUE, FALSE

Within this matrix, there are $2 \times 2 \times 2 \times 2 \times 2 \times 2 = 2^6 = 64$ total outcomes possible. Additionally, the probability of all possible outcomes can be determined by using the following computation formula:

$$\# \text{ of ways of getting } X \text{ TRUES} = \frac{(\# \text{ of binomials})!}{(\# \text{ of FALSES!}) (\# \text{ of TRUES!})}$$

Using this computational formula, the probability of getting half (3) of the conditions being TRUE can be found:

$$\# \text{ of 3 TRUES} = \frac{6!}{(3!) (3!)} = \frac{6 \times 5 \times 4 \times 3 \times 2 \times 1}{(3 \times 2 \times 1)(3 \times 2 \times 1)}$$

Appendix M continued.

$$\# \text{ of 3 TRUEs} = 720/36$$

$$\# \text{ of 3 TRUEs} = 20$$

Therefore, there is a 20/64 or 31.3% probability that 3 of the outcomes would occur TRUE by chance alone. To find the probability of the outcome that was observed in the present study (Table 1), the same computational formula can be used:

$$\# \text{ of ways of getting 6 TRUEs} = \frac{6!}{(6!) (0!)}$$

$$\# \text{ of ways of getting 6 TRUEs} = \frac{6 \times 5 \times 4 \times 3 \times 2 \times 1}{6 \times 5 \times 4 \times 3 \times 2 \times 1}$$

$$\# \text{ of ways of getting 6 TRUEs} = 720/720$$

$$\# \text{ of ways of getting 6 TRUEs} = 1$$

The probability of the obtained outcome occurring purely by chance is 1/64 or 1.6%.