NORMAN, James Ernest, 1940-
THE EFFECTS OF PROGRAMMED INSTRUCTIONAL MATERIALS:
PARENT TRAINING IN CONTINGENCY CONTRACTING.

The Ohio State University, Ph.D., 1977
Education, programmed instruction

University Microfilms International, Ann Arbor, Michigan 48106

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1977
THE EFFECTS OF PROGRAMMED INSTRUCTIONAL MATERIALS
PARENT TRAINING IN CONTINGENCY CONTRACTING

DISSERTATION

Presented in Partial Fulfillment of the Requirements for
the Degree Doctor of Philosophy in the Graduate
School of The Ohio State University

By
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* * * * *

The Ohio State University
1977

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ACKNOWLEDGMENTS

I wish to thank my committee for their guidance, counsel and encouragement. I want to especially thank Dr. John O. Cooper, my adviser and committee chairman, for his constant encouragement and support during the duration of this study and throughout the course of my degree program. Appreciation is also expressed to Mrs. Brown, director of the Neighborhood House, Ms. Boykins and Mrs. Lymon, without whose assistance the implementation of the research procedures would have been impossible; and to the parents who participated in the study. Sincere appreciation and gratitude is also expressed to my dearest friend, Delores M. Fowlkes, for providing needed strength, advise and encouragement.

The writer wishes to express sincere gratitude and an abundance of love to his wife, Jean, who provided continual love, support and encouragement that made what once seemed like an impossible endeavor, a reality.
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CHAPTER I

INTRODUCTION

Background

Parent training in behavior modification techniques has proven to be extremely beneficial in teaching children appropriate behaviors. Results of several experiments (Zeilberger, Sampen & Sloan, 1968; Christopherson, Arnold, Hill & Quilitch, 1972) indicated that parents exert strong control over the extent to which children follow instructions and concluded that aggressive and disobedient behavior could be changed by manipulating the consequences of the behaviors. Data from these studies indicated that cooperative and motivated parents can improve children's behavior within the home using naturally occurring reinforcers.

Herbert and Baer (1972) concluded that when mothers self-recorded their own attention to appropriate child behavior, the mother's attention to the child's behavior increased and the child's behavior showed the desired improvements. Homme (1966) used written contracts with adolescent potential dropouts and specified reinforcers to use for completion of academic tasks. This procedure has been used with behavior problems ranging from persistent school runaway behavior, school non-attendance,
hyperaggressivity, and stealing, to achievement motivation in underachieving students. Cantrell, Cantrell, Huddleston, and Woolridge (1969) reported on the use of operant methodology to deal with problem behaviors of school children in a diagnostic and remediation center; they reinforced approximations to the desired appropriate school behaviors. They used written explanations of contingencies to be used by either parents or teachers. The contract also stated desired behaviors (i.e., approximations to school attendance or behaviors involved in appropriate school achievement), assigned point values for behaviors, and contained a written schedule of high probability behaviors.

What should parents be taught about influencing their children's behavior? O'Dell (1974) reported that parents need to be taught to define behaviors, to count and graph their frequency, and to apply consequences that will accelerate or decelerate the frequency of given behaviors.

**Purpose**

This study had three purposes. The first was to determine if parents could acquire sufficient knowledge and concepts of contingency contracting by reading *Sign Here: A Contracting Book for Children and Their Parents* (Dardig & Heward, 1976). The second was to determine if parents would negotiate and implement contingency contracts with their children as demonstrated through verbal
and written use of concepts and skills acquired from reading *Sign Here*. The third purpose was to determine if these parents would be successful in changing the child's behavior by implementing contingency contracts as documented by graphed data.

**Objectives and Questions of the Study**

This study investigated whether parents, after reading *Sign Here*, could acquire sufficient knowledge of contingency contracting to initiate and implement written contracts with their children. Through parent group training, the experimenter taught the concepts and skills necessary for initiating and implementing contingency contracts presented in the book, *Sign Here*. After the parents had demonstrated mastery of the skills and concepts necessary for initiating and implementing contingency contracts, they were taught to use the task recording forms provided by the experimenter. These forms were used to record the frequency of occurrence of pinpointed target behaviors. Following the procedures outlined by Cooper (1974), the experimenter then taught the parent group to graph and record their data.

The second part of the study was devoted to developing and implementing contingency contracts and graphing the observed behavioral data. The experimenter provided the parent group with immediate feedback on unit
quizzes and development of contracts (as outlined in sessions #1 - #7 in Appendix A).

This study attempted to answer the following questions:

1. Would parents acquire knowledge and concepts of contingency contracting?
2. Would parents demonstrate, through written contracts, the skills and concepts learned?
3. Did parents, through implementation of such contracts with their children, successfully modify the child's behavior as indicated by graphed data?

For operational definitions of technical terms used, see Appendix B.
CHAPTER II

REVIEW OF RELEVANT LITERATURE

Introduction

There are numerous books and pamphlets available to parents that relate to everyday problems of child rearing. These have ranged from a pediatric orientation (e.g., Spock, 1946, 1963; Homan, 1970), to a behavioristic orientation (e.g., Smith and Smith, 1969; Valett, 1969; Diebert and Harmon, 1970; Becker, 1971; Patterson and Gullion, 1969). Parents have access to these materials through the use of libraries, mental health clinics, and bookstores.

Parents receive many suggestions on child rearing from their parents, relatives, neighbors and friends. They receive further advice on child rearing from magazines (e.g., The Ladies Home Journal, Good Housekeeping, and Redbook), newspapers, and television. Some of the advice is useful and some is not. Parents may seek professional help in dealing with problem behaviors through psychiatrists, school counselors or community based parent discussion groups.

Need for Parent Training

The need for programs and materials which assist parents is monumental. Hawkins (1972) reported that the
number of children with behavior problems is so large that only a mandatory parent training program in the public schools can hope to reverse the trend. There is also evidence which suggests that persons who wish to effect behavior change must frequently move into the natural environment of the subject (Paul, 1969; Tharp and Wetzel, 1969; Tramontana, 1971; Zeilberger, Sampen and Sloane, 1968). "Working in the child's natural environment inevitably leads to the parents." Ross (1972) stated:

If behavior is to be modified, the modification must take place when and where the behavior manifests itself. This is rarely the therapist's consulting room and as a consequence, behavior therapists working with children frequently find themselves working through the adults who are in a position to be present when the target behavior takes place and who have control over the contingencies of reinforcement (p. 919).

The training of parents is perhaps the most crucial criteria for implementing behavior modification programs in the home (Baer, Wolfe and Risley, 1969). However, practicality determines the who, where, and how of such training and implementation of the techniques needed for the success of a program. The techniques utilized must be considered carefully and data recorded in order to determine the degree to which the behavior is changed.

Hawkins (1972) emphasized that the evolution and survival of any civilization depends upon the young learning from the old. Hawkins further pointed out that
most children spend about four times as much time at home as they do at school. Moreover, the typical child spends his first five years exclusively at home. Many of his behaviors--perceptions, skills, values, and even attitudes toward later learning--are well established before he enters school. Hawkins indicated that most mental health efforts to change the home environment are too little and too late. Child-guidance clinics, juvenile courts, family-service clinics, and other agencies spend vast amounts of time, money and energy correcting problems that incompetent parents create. But parents rarely turn to these agencies until a child's problems become severe. Hawkins advocated a preventive program would be more humane and less costly. A preventive program would reach many children who have problems that are too slight to come to the attention of remedial programs, yet are serious enough to impair the quality of their lives.

Designing A Preventive Program

Hawkins outlined three different ways to design a preventive program oriented toward the home. One way is to help parents by giving all children supplementary learning experiences in the manner of the "Sesame Street" television series. While television can set the occasion for the child to learn new behavior, it is limited in detecting and correcting existing inappropriate child
behavior. Also, television is probably ineffective in counteracting parents' daily mistakes in child management. In addition, television or any mass produced pre-packaged program cannot give a child the personal attention, reward, and feedback required if he is to learn complex skills, concepts and attitudes needed for good adjustment and productive living. Hawkins' second approach is exemplified in the Israeli kibbutz with its problem preventive child rearing system that largely shoulders the instructional responsibility of parents. The better-qualified and more interested kibbutz members run the nursery, in which each child spends nearly twenty hours of each day. Thus, the child learns mainly from those most qualified to teach, and few child rearing errors (adjustment problems) result. Hawkins' third method suggested leaving the responsibility for rearing a child with his parents but teach all parents the skills they must have if they are to do the job well. Hawkins stressed the need for a training program that will improve the quality of child rearing and prevent the development of mental health problems that would reach parents before their first child is born. Because there is no practical way to identify inept parents in advance, it would be necessary to have a compulsory parent-training course that would reach virtually all potential parents.
The area of investigation in the present review was concerned with procedures for decreasing the occurrence of problem behaviors in children through parent training in the use of behavior modification, contingent reinforcement and contingency contracting. The literature is replete with studies but this review was limited to those studies with implications for parent training and implementation.

Parent Training

What should parents be taught about influencing their child's behavior? O'Dell (1974) reported that parents need to be taught to "define behaviors, to count and graph their frequency, and to apply consequences that will accelerate or decelerate the frequency of their occurrence" (p. 421).

Patterson (1969) emphasized that the focus of behavioral applications, particularly social learning theory, should be upon reprogramming the social environment in which the child lives rather than upon the direct manipulation of deviant child behavior. As such, he sees a primary professional function as training significant others (parents, teachers, peers, etc.) in the application of behavioral analysis. His major focus in training significant others is teaching techniques to decelerate the occurrence of deviant behaviors and to accelerate adaptive child behaviors.
Methods of Parent Training

Patterson's training method for parents involved a four-step program. The first phase took about two weeks and involved the collection of baseline data and observation of familial interactions in the home. During this period, parents were given a programmed test (Patterson and Gullion, 1969) to familiarize themselves with principles and applications of learning. Next the parents were taught specific procedures for counting and graphing target behaviors (Patterson stated that in general, parents initially tended to use vague language and were usually quite incorrect in estimating how often a particular behavior really occurred).

During the second phase, parents were assigned to count some behavior occurring in the training session, such as the experimenter's touching his face, coughing, pauses in speech, number of "uhs" vocalized, etc. At the same time, parents were assisted in pinpointing countable behaviors for change in their child. The third phase of the training program involved assigning a special hour each day that the parents were to count and record the incidence of pinpointed behaviors, observe the various consequences of the pinpointed behaviors, and note family members who provided the consequences. Parents were prompted for counting in the home by being told they
would receive a phone call soon from the experimenter. Patterson stated that usually two or three phone calls spaced over a period of several days were sufficient prompting and reinforcement for the parent's task of establishing accurate baseline. In the last phase, parents were aided through demonstration and supervised practice of techniques to alter reinforcement contingencies they provided for desired child responses. The data collected by the parents provided constant feedback during the intervention program. Patterson found it possible to train four to five families at a time in group sessions. Each session lasted two hours and involved five to fifteen weekly meetings. Criteria of success were set at parental altering of at least two child behaviors. One aspect of Patterson's training program was that he insisted upon at least two adult family members actively participating in the program. This second person could be the parent's spouse, an older child, or even a friend, neighbor or relative. The two adults could reinforce each other for changes made within the family.

**Variations in Parent Training**

Patterson (1969) further pointed out that variations in his basic program might be necessitated for severe problem children or very disorganized families. For example, the experimenter might have the parents use a tape recorder
during periods of maximum family interaction, have the tapes analyzed by professional staff members regarding appropriate and inappropriate parental behaviors in carrying out the change programs, and offer alternative guides for parental responses. Further, Patterson stated that in highly disorganized families the experimenters have had to go into homes to model appropriate interaction with children and actively supervise the parent's imitation of these behaviors in the home. A main point Patterson made, however, is that for most cases, the parent rather than the experimenter may apply baseline observations and experimental manipulations in the home.

Parent Instruction in Behavioral Applications

Walder, Cohen and Breiter (1969) described three approaches for parent training in behavioral applications: educational groups, individual consultations, and controlled learning environments in homes. The foregoing authors described the purpose of the educational groups as teaching parents general principles of learning and how to perform functional analysis of behavior. They specified this as a four-step program, similar to Patterson's. In the first phase (approximately four weeks), parents were taught to observe and record child behaviors. The second phase (fifth and sixth weeks) involved
individual consultative interviews in which parents were taught to identify a three term contingency of behavior (i.e., antecedent events, observable behaviors, and consequent events). During the third phase (approximately eight weeks), parents engaged in shaping new child behaviors in the home. The last phase (lasting two weeks) concerned a review of principles of behavior, case illustrations, and data from programs carried out in the homes.

A unique feature of the Walder et al. approach is that they specified assignments for the parents during the program and provided assistance contingent upon the completion of prior assignments by the parents. In this way, they hoped to gradually increase the probability of independent behavior on the part of the parents.

Parent Observation of Therapy Sessions in a Clinical Environment

Russo (1964) reported two cases in which he had respective mothers watch behavior therapy sessions with their children and eventually conduct sessions themselves. Training basically involved three-way interaction (among therapist, child and mother) in a play-room setting with the mother gradually assuming greater treatment responsibility. The first case was that of a six year old female whose problem behavior consisted of severe temper
tantrums. The treatment program consisted of extinction of the problem behavior and concurrent reinforcement of incompatible desirable behavior. Russo reported successful behavioral change after nine months of treatment. The time period was so lengthy, he stated, because the mother had difficulty in correctly applying the extinction procedure as she continued to believe that all "bad" behaviors should be punished. As such, she may have reinforced the inappropriate behaviors. The second case involved an eight-year old male whose problem behaviors were listed as unintelligible speech and hyperactivity. Russo reported that the same extinction and reinforcement programs were effective for decelerating inappropriate behaviors.

Parent Training in Negotiation Responses

In response to parental requests for assistance in dealing with adolescent problem children, Kifer, Lewis, Green, and Phillips (1974) trained three parent-child pairs in negotiation responses to hypothetical conflict situations using behavioral rehearsal and social reinforcement. The negotiation process was separated into component behaviors that were practiced during simulation by each youth and his parents under the direction of trainers. All training procedures were conducted in a windowless classroom containing table and chairs, videotape recording
equipment, and a cassette tape recorder. Instructions, practice and feedback were used to train subjects to negotiate behaviors in practice simulations. Instructions consisted of telling the subjects to perform all three behaviors; e.g., use complete communication, remember to identify the issues, and suggest some options. Practice involved each subject rehearsing all three negotiation behaviors in practice simulations. Feedback consisted of social reinforcement such as praise, smiles, and head nods. Instructions were given before practice simulations, and nonverbal feedback were given during these simulations. Verbal praise occurred after the role plays. First one subject was instructed, then practiced the behaviors until he performed all three in the same simulation. Then the other subjects went through the same procedure. Subjects were taught to use the negotiation behaviors in the order in which they were defined.

A typical sequence occurred as follows. First, trainers instructed the youth before his first practice simulation to use all three negotiation behaviors. Then, trainers signalled subjects to begin the simulation and smiled or nodded approval after any negotiation behavior used by the youth. Usually, the youth did not use all three behaviors in the first attempt, so he was praised for those behaviors he used and reminded to use the
behaviors he did not use. Next, the youth was instructed to use all three behaviors and the second practice simulation was started. This sequence occurred until the youth performed all three negotiation behaviors in the same practice simulation. At that point, subjects switched roles and the parents went through the same sequence. After the parents met the criterion of all three behaviors in the same simulation, that session ended and the post session simulation was conducted.

The training procedures produced substantial increases in negotiation behaviors. The trained negotiation behaviors generalized to discussions of actual conflict situations without instructions or any other contingency placed on their occurrence by trainers. More important, each parent-child pair reached agreement in more of these real conflict situations after training than before. This provided encouraging evidence that relatively inexpensive procedures could be developed that change parent-child interaction during conflict situations from disagreement to negotiation and agreement.

Home Visitation by the Therapist

Peterson (Note 1) stated that it was not sufficient just to tell parents when and how to reinforce. He recommended that the therapist be present in the home and signal
the parent on when and how to act. Peterson concluded "... it would seem that just as the child needs a system of differential consequences applied to his behavior, so does the parent. Thus the chain is--parent reacts to child, therapist reacts to parent, and hopefully, changes in the child's behavior maintain the parent's newly acquired responses" (pp. 8-10).

An illustrative example is provided by a study by Forehand, Cheney, and Yoder (1975) who trained the mother of a non-compliant deaf child in reinforcement skills and time-out procedures. Verbal instructions, modeling, role-playing, and a practice session with the child under the supervision of the therapist were employed to train the mother. Forehand et al. reported changes in the behavior of the mother as well as the child. The mother demonstrated an increase in the frequency of questions and commands compared with baseline.

Loviband (1963) reported the successful training of parents in utilizing conditioning procedures for the treatment of enuresis. The subjects were thirty-six enuretic children, age six to fourteen years. Treatment was supervised by phone conversations and home visits. A criterion for success was set at fourteen consecutive dry nights. All cases were reported as successful.
Allen and Harris (1966) reported a mother's successful treatment of her five-year old daughter who emitted excessive scratching, which had resulted in many open sores and scabs. Initial instruction and training of the mother was carried out in clinic-playroom sessions and gradually moved solely into the home setting. The primary techniques were extinction (ignoring of all scratching), positive reinforcement (social approval, attention and candies) during all non-scratching periods and a token reinforcement system (the child was given gold stars for increasingly longer time periods of not scratching herself; the stars could be traded for back-up reinforcers or trinkets, etc.). As scratching frequency subsided, the mother relied solely on social reinforcement. A six week follow-up revealed no scratching behavior and all sores had completely healed. The authors stressed how this behavior appeared to be under the control of immediate social consequences in the form of the mother's attention.

Summary. The foregoing review of literature regarding the utilization of parents as change agents for their children has demonstrated a valid need for parent training. An approach giving parents specific, proven techniques for altering child behaviors should reduce significantly the parental confusion regarding child
rearing methods as noted in the introduction. Besides attempting to train parents efficiently and effectively, the parent training should also deal with such issues as initiating parent involvement, maintaining interest and motivation in the training, and instituting skills within the parents that are maintained after the training ends. A further benefit results if the parents learn to analyze their own relationships with their children. There are various ways to train parents in implementing intervention strategies (Patterson, 1969; Hawkins, 1972). While it may be concluded that general learning theory applications have proven themselves empirically valid in altering deviant child behaviors; specifically, social learning theory has demonstrated the singular importance of significant social persons in the maintenance and change of child behaviors. Also, there are a variety of determinants producing broad individual differences in a child's responsiveness to social reinforcers, the social reinforcement dispensed by significant others in the child's environment are strong potential influencers of child behaviors.

Cohen (1970) concluded in the parent training section of his project interim report that the person dispensing the reinforcement to the child must be held in very high esteem by the child. This is more often not the case with professionals or therapists when working with children.
The child must conceive the person administering the reinforcement and the reinforcers as relevant to his environment. It can further be concluded that a child, when seen by a professional, represents the parents' last alternative to "save their child" and then only in cases of extreme behaviors is the child committed to a hospital or residential setting. Thereby, the length of time between onset of behavior and the parent seeking professional help has the effect of firmly ingraining the child's behavior.

The author concluded that those children seen by the professional represent only a small portion of children needing services, and are representative of only those who have been "given up" on by the parents and family unit. This does not include those children who have problems too slight to come to the attention of remedial programs, but are serious enough to impair the quality of their lives.

**Suggested Implications.** Parent training should teach the parent to focus on the environmental variables shaping and maintaining deviant child behaviors and a consequent restructuring of that environment. A more efficient use of the professional could be accomplished by the professional focusing on the nonprofessional in ameliorating child behaviors. Patterson (1969) emphasized that the focus of behavioral application, particularly social learning theory, should be upon reprogramming the social environment in
which the child lives rather than upon the direct manipula-
tion of deviant child behavior. He views the professional's
primary function as training significant others (parents,
peers, teachers, etc.) in the applications of behavioral
analysis. His major focus in training significant others
is in teaching parents techniques to decelerate the occur-
rence of deviant behaviors and to accelerate adaptive child
behaviors. A vital component of Patterson's parent train-
ing is in teaching parents to count and graph target be-
behavior. This is particularly important because parents
tend to use vague terms and are usually incorrect in es-
timating how often a particular behavior really occurs.
Lindsley (1966) for example, noted that the recording of
behavior itself often produced dramatic changes in the
frequency of the recorded behavior.

Parent Training in the Use of
Behavior Modification

Hawkins (1972) indicated that most mental health
efforts to change the home environment are too little and
too late. This information would seem to lend support to
the need for in-home programs. It has become increasingly
apparent that a child's home environment must be considered
in any attempts to modify the child's behavior. Problem
behaviors sometimes occur only in the home setting, and
therefore, treatment in a clinic is inadequate. Since
parents are the primary influencers of behavior during the child's formative years, it is the parent who must be trained in behavior modification techniques. (O'Dell, 1974)

Skinner (1965), in examining environmental variables, of which some behavior is a function, stated:

The practice of looking inside the organism for an explanation of behavior has tended to obscure the variables which are immediately available for a scientific analysis. These variables lie outside the organism, in its immediate environment, and in its environmental history (p. 31).

Behavior modification is based on the social learning theory in which abnormal behavior is learned through the environment (Soderberg & Mako, 1970). Behavior is nurtured, flourished, is reinforced, and is governed by certain laws and principles. The laws and principles are derived from data. Behavior modification thoroughly examines the behavior in question with great detail and precision; searching for the critical antecedents and consequences which develop and maintain that behavior. Knowing exactly what the behavioral pattern is, strategies for change can be introduced in the environment which may alter or modify that behavior.

The most important evidence in support of parent training in behavior modification is derived from research demonstrating parents' ability to successfully carry out behavior modification programs with their children. Using
a broad definition of behavior modification, Hawkins (1972) wrote concerning parent training in behavior modification:

It is not a matter of whether parents will use behavior modification techniques to manipulate their children, but rather whether they will use these unconsciously, efficiently and consistently to develop the qualities they choose for their children (p. 38).

Parents as Child Behavior Modifiers

Parents can frequently provide instruction which will effect behavior. The effectiveness of parents in such a role is reported in a number of studies. Williams (1959) instructed the mother of a twenty-one month old boy in operant techniques. The child's problem behavior was severe, tyrant-like, tantrums upon being put to bed each night. The mother had to remain in the child's room until he fell asleep. An extinction procedure (leaving the child's room immediately after putting him to bed and ignoring tantrums) eliminated the tantrum behaviors within ten days. However, an aunt inadvertently reinforced the problem behavior one week later when the child complained upon her putting him to bed. The same extinction program again terminated the behavior within nine days and a two year follow-up revealed no re-occurrence.

Boardman (1962) instructed parents of a five-year old boy in operant techniques by telephone conversations. The boy's problem behaviors included lying, aggressive
behaviors, and running away from school and home. While Boardman suggested a punishment contingency for the undesirable behaviors and a positive reward contingency for appropriate behaviors, the parents relied solely on the former. No observational frequency data were reported but the parents did indicate a successful elimination of the objectionable behaviors. An eleven month follow-up revealed no recurrence of atypical behaviors in the child.

The foregoing study was severely criticized by Bandura (1962). Bandura stated that while he was in total agreement with Boardman's reliance on the parents as primary agents for the child's change, he was in extreme discord with the method (reliance on punishment alone) utilized. Bandura cited research evidence for the ineffectiveness of punishment in altering behavior. Bandura further noted unfortunate by-products which occurred in Boardman's subject, stating that the inappropriate behaviors were eliminated only after the severity of punishment reached almost physiologically intolerable intensities. He asserted that while a punishment contingency could have been used in conjunction with positive reinforcement of pro-social behaviors in the child, a more fruitful approach would have been extinction concomitant with positive reinforcement of incompatible appropriate behaviors.
Group Parent Training

Numerous studies have been conducted in parent training. These studies were characterized by the attempt to determine whether it was possible to produce behavior change in the child by modifying the behavior of the parent. Most approaches relied on case study information and taught the parent with verbal advice or direct supervision and often lacked specific data. Spurred by early successes, studies during the sixties focused on the extent to which this approach could be applied to a variety of problems and on the development of the basic technology necessary to implement the programs.

Pumroy (1965) conducted a study aimed at teaching parents principles of behavior modification. The study consisted of three experimental parent groups who met for ten sessions and received lectures on behavioral principles and advice on applying these principles to specific problems. A control group received no treatment. Results showed parents did learn the behavioral principles and vocabulary. No differences were reported in attitude changes between experimental subjects and controls. Pumroy found that ten of eleven experimental families reported favorable behavior change two months after the sessions. No objective measures from which to compare these groups were reported.
O'Leary, O'Leary and Becker (1967) utilized a reversal design to demonstrate the effectiveness of a mother's behavioral treatment of two male siblings, age six and three years. Behavior of the children included frequent temper tantrums and fighting. The treatment was carried out in the home by the mother and consisted of five months of sessions three times per week. After two observers gathered baseline data in the home, the experimenters initially conditioned cooperative play in the children using prompting, shaping, verbal instructions and positive reinforcement of candy and points (which could be exchanged for desired tangible objects). The change program was gradually turned over to the mother, during which the experimenters utilized hand signals to program appropriate behavior on her part. Frequency data indicated successful results.

Mira (1970) reported an extensive, twenty-one month instructional program for parents in operant techniques. The program involved eighty-two different cases of children, ranging in age from eighteen months to sixteen years and presenting a wide variety of behavior problems. Parents were taught principles of behavioral modification in both group and individual sessions. For the most part, the children were never seen by the experimenters. The latter relied almost solely on the parents' records of
child behavior and all operant programs were carried out in the home. The experimenters set certain contingencies to maintain parental involvement. The amount of time for parents to complete the behavior modification program ranged from one month of weekly sessions to eight months of weekly sessions. A criterion of success was set at the successful completion of two behavior modification projects. The overall results of the instructional program were that 46 per cent of the parents who came at least to one session successfully modified at least two child behaviors; 15 per cent only modified one child behavior, and then dropped from the program; and, 39 per cent demonstrated no recorded successful modification of child behavior. The latter group included such parents as those who came once and never again, and those who simply stated that the child got better but presented no records. In regard to group versus individual parent sessions, Mira stated that it was more costly to work with parents in groups rather than individually; that is, she asserted that during the first six months of the program in which only group sessions were conducted, it took 3.9 hours of time for each successful behavior modification for parents trained in groups and only 2.1 hours for individually trained parents.
Maternal Reinforcement during Clinical Modification

Patterson, McNeal, Hawkins and Phelps (1967) reported the successful modification of a five-year old boy who was described as withdrawn, isolated, having frequent emotional outbursts and occasionally engaging in the eating of feces. The experimenters first assessed the subject's responsiveness to the mother's social reinforcement and discovered it was severely lacking. The mother initially observed the experimenter (who first shaped the child's responsiveness to him through positive reinforcement of candies which could later be exchanged for toys) and gradually instituted the techniques herself. Further, the mother was instructed to take notes in the home which described the child's acceptable behaviors and the social reinforcements used to strengthen them (as a reinforcement for the parent, the experimenter subtracted one dollar from the clinic fee for each note turned in—within a few days, the parent "earned" thirty-six dollars). All observational data were collected in the home and the results indicated significant reductions and terminations of referred behaviors. In a six week follow-up, the child's responsiveness to the mother's social reinforcement was re-assessed and found to be significantly higher than that of the pre-intervention assessment.
Summary. From the foregoing, it may be concluded that parent training in the theory and application of behavior modification has been valid in altering deviant child behaviors. While there are a variety of variables producing broad individual differences in a child's responsiveness to social reinforcers, parent training in behavior modification has indicated the importance of significant social persons in the maintenance and change of child behaviors. The social reinforcement dispensed by significant others in the child's environment are strong potential influencers of child behavior.

Suggested Implications. Parent training should be designed for specific problems and these problems will vary among parent groups. However, there are basic behavior modification principles which should be learned by all parent training groups. These principles should be systematically applied by parents when working with their children. Parent group members can be a source of encouragement and motivation to each other. When working with parent groups, one should be aware of the problem of motivation.

Parent Training and the Use of Contingent Reinforcement

For many years psychologists have searched for solutions to the problems which children present. Studies
have covered all ranges of human growth and development, both normal and abnormal. These studies have usually focused on the reasons children might have for doing the things they do. Why do children behave the way they do? Children act the way they do for a variety of reasons, including past learning, heredity, past treatment and individual traumatic experiences. All of these facts and many others are important; however, they may not solve a specific problem.

One rather simple explanation of why children do what they do is that it gets them what they want. In other words, children find rewards and payoffs in the consequences which follow behavior. Children have learned to act the way they do through reinforcement and punishment. Particular interest has been given to the effectiveness of contingent reinforcement in increasing behaviors. In 1959, Ayllon and Michael conducted one of the first experiments demonstrating that a person unskilled in behavior modification could be taught to control certain behaviors in others by manipulating reinforcement contingencies.

Contingent Reinforcement in a School Environment

Hamblin and Hamblin (1972) found that students in school who received tokens contingent upon correct
reading responses read more books to criterion and learned more words to criterion than students who received tokens not contingent upon correct reading but merely for attending. They reported this condition was prevalent regardless of the peer or adult tutor variable. Hart, Reynolds, and Baer (1968) reported on the effects of contingent and noncontingent social reinforcement on cooperative play of a preschool child. A five-year old girl was enrolled in a group of fifteen normal children in a preschool setting. The group attended school five afternoons per week for approximately 2.5 hours each day. Most of the subject's time was spent in non-social tricycle riding, sand play, swinging, cooking and playing with animal toys. Her contact with other children, though frequent, tended to be brief and non-cooperative. Her refusal to play, her taunts and competitive statements, and her foul language and rambling accounts of violent accidents perhaps made her aversive to other children.

Hart et al., used a "reversal" design incorporating two different contingencies of reinforcement. Baseline consisted of normal pre-school practices, composed essentially of intermittent attention. The first type of reinforcement consisted of greatly increased and carefully non-contingent social reinforcement. A period of decreased reinforcement, presented contingent upon
cooperative play or approximations to it, then followed. This was continued for ten days baseline. Cooperative play was defined as pulling a child or being pulled by a child in a wagon, handing an object to a child or pouring into his hand or into a container held by him, helping a child by supporting him physically or bringing, putting away or building something verbalized as expressly for him. Proximity was defined as being within three feet of another child indoors and within six feet outdoors.

Hart et al., reported the subject was in proximity to other children 50% of the day during baseline. During contingent reinforcement (intervention), the subject's proximity to children increased to 90% in the final intervention and the duration of time in proximity increased. Hart et al., reported a high rate of "obnoxious" behavior could hardly co-exist with a high rate of cooperative play. They emphasized that deliberate behavior modification is likely to proceed more effectively when it is based upon contingent, rather than abundant, stimulation.

**Parent Intervention with Children**

Parents have been effective in using contingent reinforcement with their children. The success of parents have been reported in various studies. Knight and McKenzie (1974) reported success when "reading stories at
bedtime" was made contingent upon no thumbsucking for three girls who were three, six, and eight years old. The three year old had been a thumbsucker since infancy. She sucked her right thumb and curled her right index finger around her nose and often held a favorite blanket in her left hand. The six year old sucked her thumb at bedtime, when watching television and when holding soft, fuzzy objects. Her thumbsucking was the object of teasing by older siblings. Her mother was the experimenter and her older brother was the second observer. The ten-minute daily sessions took place on the mother's bed. The eight year old sucked her thumb at bedtime, while watching television, and when holding a soft blanket she called "sucky." She did not suck her thumb when peers were present; e.g., in school. Her parents also reported that she was frequently reminded by both her dentist and orthodontist to stop thumbsucking. The daily 20-minute sessions took place in the child's bedroom. The children were asked to choose books or stories that were read by the experimenter during sessions.

During baseline conditions, the experimenter read continuously to the subjects, whether thumbsucking occurred or not. During contingency conditions, the experimenter stopped reading and was silent for the duration of the thumbsucking interval. Experimenters were instructed
to ignore questions or any other responses made by the child and to look directly at the book; and only peripherally at the child. When the subject removed her thumb from her mouth, reading was immediately resumed.

Knight and McKenzie emphasized that the principles of behavior analysis inherent in the described procedure were the same as in Baer's (1962). Differential reinforcement was applied for all behaviors, other than thumbsucking, on a continuous schedule, while the effects of congingent withdrawal of the reinforcer punished thumbsucking and increased the probability of stable avoidance behavior (non-thumbsucking).

The six and eight year old subjects' mothers reported several weeks after the experiment was terminated that thumbsucking had not recurred. The three year old subject's mother did not carry out the contingent reading procedures and reported that the child did not generalize non-thumbsucking behavior from naptime to other situations.

Specific Contingencies for Target Behaviors

Ferritor, Buckholdt, Hamblin and Smith (1972) emphasized the importance of designing specific contingencies for specific target behavior. The subjects in their study were fourteen children from two third-grade classes (inner city school). The children were identified by
their teachers on the basis of heterogeneity of social behaviors and of ability in arithmetic computation. Of the fourteen children, five displayed a high degree of disruptive behavior; the remaining nine appeared average for the school. Three tested below the second grade in arithmetic computation and the remainder were average for the school. The experimental task was set at 100 arithmetic computation problems that the children worked for twenty minutes each day. After consulting with the third-grade teachers, over 5,000 arithmetic problems, testing arithmetic skills that had previously been taught, were generated. Each day a set of 100 problems, which contained the same proportions of randomly sampled addition, subtraction, multiplication, and division problems, were drawn from the large pool of problems. The problems were then placed in the pool for the next day's drawing.

In the baseline condition, the teacher was asked to circulate through the three rows of children approximately once every minute and to answer questions related to the math problems. She was specifically told not to attempt to accelerate any attending behaviors or to suppress any disruptive behaviors. During the behavioral conditions (B₁ and B₂), the teacher was instructed to give small plastic chips (tokens) to those children who were "attending" a list of behaviors that qualified as
attending behaviors were given to the teacher. During a
typical session, the teacher would circulate through the
three rows of children about once every minute. As she
circulated, she would unobtrusively place a token on the
desk of children who were attending. Each child earned
approximately 12 to 16 tokens per session. The teacher
was instructed to ignore children who were not attending.
The tokens were exchanged intermittently by the children
(about once a week) for a choice of candy, ice cream,
treats, inexpensive toys, high-interest activities, and
occasional field trips. Tokens were given for correct
work. The children could earn one token for every seven
problems they worked correctly plus bonus tokens for the
accuracy of their work.

All children in the group were observed on a ten-
second time-sampling basis. An observer with a stop
watch and a sheet of paper for tallying behavior watched
all the children sequentially on a five-second observe,
five-second record basis. Reliability checks were con-
ducted throughout the study. Periodically, another
trained observer made an independent, simultaneous record
during the experimental period. The two observers would
look at the same child during the same time sequence.
Those records were compared interval by interval.
During baseline, the children attended approximately 80% of the sampled intervals and disruption occurred in about 8% of the intervals. With the introduction of the Baseline condition, disruption decreased and attending behavior increased until it reached over 90% the final two days of the condition.

**Contingent Reinforcement with Parent Groups**

Hall, Axelrod, Tyler, Grief, Jones and Robertson (1972) reported on the use of contingent reinforcement with four parents enrolled in a responsive teaching class. The parents carried out experiments using procedures they had devised for alleviating their children's problem behaviors. The techniques used involved different types of reinforcements. One parent increased the frequency of the wearing of an orthodontic device during five daily time checks by making an immediate monetary pay off contingent upon wearing the device. A second parent increased the number of points earned for doing daily household tasks by providing back-ups for which the points could be exchanged. The parents of a four-year old boy decreased the frequency of whines, cries, and complaints by removing social attention when such behavior occurred. A mother decreased the duration of time it took for her five-year old daughter to get dressed by granting permission to
watch television contingent on dressing within 30 minutes of the time she got up in the mornings. Brief reversals contingent on dressing were used to show casual relationships between the procedures used and the changes in behavior. Checks on the reliability of measurement were made by persons present in the home.

**Summary.** The application of contingent reinforcements and their subsequent effects on behavior are wide range and far reaching. The method of contingent reinforcement has gone from teacher use in the classroom with individuals and groups to the inner-city schools of Kansas. Copeland, Brown and Hall (1974) reported on the success of a principal in an over-crowded school who used contingent reinforcement on chronic absenteeism and academic performance. MacDonald, Gallimore and MacDonald (1970) reported agreements or deals made between a guidance counselor and six chronic non-attenders, that reinforcement would be provided, contingent on school attendance during the time in which the deal was in effect.

Many child and adult behaviors are learned and shaped through interactions in their environment. Contingent reinforcement is a vital part of establishing new behavior. The foregoing literature review will attest to the wide adaptability of contingent reinforcement, from
a teacher giving tokens contingent upon student's attending in a reading class (Hamblin & Hamblin, 1972), to the successful use of television watching by a mother to decrease the time it took her five-year old daughter to get dressed (Hall, Axelrod, Tyler, Grief, Jones & Robertson, 1972). Contingent reinforcement is economically and theoretically sound.

**Suggested Implications.** The implications for parent training are numerous because of its adaptability to a variety of situations and because it normally does not require special technical apparatus for successful administering. Parents can institute a successful contingent reinforcement program as easily as an educator or therapist.

**Parent Training and the Use of Contingency Contracting**

In the past, some promising advances have been made in the technology of behavior. These large strides have occurred in understanding and dealing with human behavior and the environmental events that affect it. Based on Skinner's operant conditioning, behavioral psychologists have emphasized the programming of consequences to modify measurable, observable behavior. Two basic tenets that have emerged from their research are: (1) behavior is lawful, and (2) behavior is, for the most part, determined
by its consequences (Berman, 1971). This means that the consequences of behavior determine the rate of future occurrence of that behavior. If a behavior is rewarded (positive reinforcement), then the probability of that behavior recurring is increased. The converse is also true. If a behavior has negative consequences, the probability of that behavior recurring is decreased.

These tenets form the basis for the system called contingency management. A contingency is a relationship between a behavior and a consequence (Valentine, 1971). Contingency management means two things: (1) to specify ahead of time what consequence will occur as a result of performing a particular skill; (2) to make sure that after the skill is performed, the consequence does occur.

The origins of contingency management come from the work of David Premack (1959). Through his experiments, Premack found that a high probability event (a behavior that occurs frequently) could be used to reinforce a low probability event (a behavior which does not occur frequently). Simply stated, "if behavior B is of higher probability than behavior A, then behavior A can be made more probable by making behavior B contingent upon it" (Homme, 1963, p. 544).

In 1963, when working with three year old nursery school children, Homme (1963) first applied the
differential probability hypothesis to an educational situation. Since he couldn't use punishment or material rewards, little work was being accomplished by the children as they spend most of their time running around the room and screaming. Homme decided these behaviors were high probability events and thus made them contingent on low probability events, such as paying attention. If the children performed as they were asked for a short period of time, they then could run and scream. At a signal they would stop and begin engaging again in the desired way. In other words, the children's behavior was controlled without the adult having to use aversive consequences. From this experience Homme stated:

This kind of contingency management put us in immediate control to the extent that we were able to teach everything in about one month that we could discover was ordinarily taught in first grade (p. 544).

Originally, contingency management primarily used high probability events. It has now expanded to include the use of many kinds of reinforcement systems.

**Educational Settings**

In educational settings, tokens (such as poker chips or points) have been often used as secondary reinforcers. Students earn tokens for displaying appropriate behavior, e.g., attending to the task at hand for thirty minutes, performing ten arithmetic problems correctly, etc. The
students later exchange their tokens for specified privileges such as ten minutes to read comics or work puzzles (Homme, 1970).

More sophisticated contingency management systems have been devised for use with college students. Keller (1968) proposed a method of teaching a college course by systematically applying reinforcement theory. In his course, the material to be learned was divided into thirty units. The student had to show his mastery of a unit of content by passing a readiness test before he was allowed to go on to the next unit. The student's final grade was based primarily on the number of units he accomplished. This method of teaching rests on the assumption that all college students are capable of mastering the course content at a high quality level. However, some will work at a faster pace than others. Students in such a course are given frequent feedback as to how they are progressing. They also are frequently reinforced since the content is broken down into many small units and they know exactly what is expected of them in order to earn a specific grade.

Bristol and Slonne, Jr. (1974) implemented a contingency contracting program designed to increase study rate and subsequent test performance with a group of undergraduate psychology students. The function of the contingency
contracting program in producing increased study rate was evaluated by individual experiments with each student in an experimental contracting group. The overall effect of the program on test performance was assessed by comparing the final scores for the course earned by the experimental group with those earned by two matched control groups. A reversal procedure established that contingency contracting did significantly increase the study rate of students of a wide range of ability. However, it was selectively effective in improving the test performance of below-average students only.

Homme (1966) used written contracts with adolescent potential dropouts to specify reinforcers to follow completion of academic tasks. Problems with which this procedure has been used have ranged from persistent school runaway behavior, school non-attendance, hyper-aggressivity, and stealing to achievement motivation in underachieving students. Cantrell, Cantrell, Huddleston, and Woolridge (1969) reported on the use of operant methodology to deal with school children's problem behaviors in the setting of a diagnostic and remediation center to reinforce approximations to the desired appropriate school behaviors. Cantrell et al., used written explanations of contingencies to be used by parents and/or teachers. The contract also stated desired behaviors (such as approximations to school
attendance or behaviors involved in appropriate school achievement), assigned point values, and a written schedule of high probability behaviors.

Researchers have utilized contingency management systems in a variety of settings using many different kinds of subjects. In the majority of cases, the system has been applied only in specific situations for a few hours each day. However, Phillips (1968) employed this method for the entire daily routine of pre-delinquent boys living in a small home-style, residential treatment program called Achievement Place. In this program, three to eight boys who had committed minor offenses lived with a pair of house-parents and attended the local schools. Phillips, who was a house-parent, instituted a token program in which the boys could earn or lose points according to their behavior. Target behaviors were selected in social, self care, and academic areas. The behaviors such as being punctual, cleaning one's room, watching the news on TV, performing homework, and obtaining satisfactory grades earned points for the boys. They could lose points for speaking aggressively, arguing, using poor grammar, lying, etc. The earning or losing of points was marked down on a 3 x 5 card which each boy always carried. At the end of each week, the points were totaled and the boys could buy the privileges which they desired. The
privileges or back up reinforcers were items or events which were naturally available in the home such as allowance, snacks, staying up late, watching TV, etc. Experiments were carried out on five target behaviors: decrease in use of aggressive statements, bathroom cleaning, punctuality, decrease in use of poor grammar, and increase in quality and quantity of homework. In all five areas, the token program was quite successful in modifying behavior in the desired direction.

**Parent Contingency Contracting with Target Behaviors**

Eyberg and Johnson (1974) reported on an outcome evaluation of behavior modification training for parents of children perceived to have behavior problems. Treatment outcome was measured by criteria designed to reflect the degree of parental cooperation and criteria designed to reflect actual changes in both attitudes and behaviors. The two treatment components manipulated in the study (Eyberg & Johnson, 1974) were contingency contracting with parents and the order in which problems of varying difficulty were treated. In line with expectations, parents subjected to contingency contracting were significantly superior in completing assignments, dealing with more problems, and achieving higher therapist ratings on cooperation. There were no effects associated with the
order of treated problems. Examination of outcome results indicated a fairly high degree of treatment success as measured by parent-collected observational data, parental attitude change toward the children, and parental attitude concerning the process and outcome of treatment. Only a modest degree of success was evidenced, however, by behavioral data taken by observers in the home and in standard situations in the laboratory.

Aragona, Cassady, and Drabman (1975) used contingency contracting with overweight parents and their overweight daughters. Fifteen overweight girls age five to eleven years were assigned to one of two weight-reduction treatments: response-cost plus reinforcement, response-cost only, or a no-treatment control group. In the response-cost plus, reinforcement group, parents contracted to facilitate their child's weight loss by carrying out reinforcement and stimulus control techniques, completing weekly charts and graphs, and encouraging their child to exercise. The response-cost only group parents did not contract to reinforce their child's performance. The response-cost program applied to both experimental groups was conducted in weekly meetings in which parents lost previously deposited sums of money. Twenty-five per cent was deducted for missing the weekly meeting, 25% for failing to fill out charts and graphs, and 50% if their
child failed to meet her specified weekly weight-loss goal. At the end of the 12-week treatment period, both experimental groups had lost significantly more weight than the control group. After an eight-week, no-contact follow-up, some of the lost weight was regained. The response-cost plus reinforcement group was still significantly below the controls. A 31-week, no-contact follow-up failed to show a treatment effect, but did show a trend towards slower weight gain by the response-cost plus reinforcement group.

Mann (1972) used contingency contracting to control an adult behavior problem—weight control. Items considered valuable by the subject and originally his property were surrendered to the experimenter and incorporated into a contractual system of prearranged contingencies. Each subject signed a legal contract that prescribed the manner in which he could earn back or permanently lose his valuables. Specifically, a portion of each subject's valuables were returned to him contingent upon both specified weight losses and losing weight at an agreed-upon rate. Furthermore, each subject permanently lost a portion of his valuables contingent upon both specified weight gains and losing weight at a rate below the agreed upon rate. Single-subject reversal designs were employed to determine the effectiveness of the treatment.
contingencies. The study demonstrated that items considered valuable by the subject and originally his property, could be used successfully to modify the subject's weight when these items were used procedurally both as reinforcing and as punishing consequences. In addition, a systematic analysis of the contingencies indicated that punishing or aversive consequences presumably were a necessary component of the treatment procedure.

**Summary.** Contingency is the relationship between a behavior and its consequences. Explicit in this definition is the dependency of one event upon the other. When a response occurs with specified characteristics the "dependent" or "contingent" reinforcement is delivered. Contingency contracting has been successfully reported in various settings: schools, parent groups, homes and undergraduate psychology classes. Contingency contracting procedures require the person (self-contracting) or persons to analyze, behaviorally define, set criterion, state the terminal behavior and the rewards. Each person is aware of his performance expectations. Contingency contracting, therefore, means changing behavior through the regulation of the relationship.
Suggested Implications. Contingency contracting can be used successfully in a wide variety of settings and without special technical apparatus. Contingency contracting causes the person or persons to analyze the behavior, set the criterion, state the terminal objective and the reward. Once written, the contract affords the parent a readily referrable record explicitly stating who receives what, how much, and when. Oftentimes, the act of writing and analyzing the behavior acts as a deterrent for curbing the behavior. Contingency contracting can be used alone or in conjunction with other systems; e.g., token economy.

Summary and Implications for the Foregoing Literature Review

Within the past decade, many techniques for changing behavior have been developed by behavioral scientists. These techniques were derived primarily from laboratory studies of behavior by B.F. Skinner and his associates and from clinical practice of psychologists. The array of techniques developed in the laboratory, clinic and classroom is often referred to as behavior modification.

Behavior modification has often been viewed as a technique for eliminating disruptive behavior. However, an abundance of literature reveals that behavioral approaches can be applied effectively in a wide variety of
behavior and in a wide variety of settings.

One way of assessing the virility of a scientific discipline or movement is by considering the amount of literature that bears directly on the content and orientation of that movement. The abundance of literature pertaining to behavior modification attests to the wide applicability and the successful utilization of the behavior modification approach.

For example, considerable attention is given in the literature to the effectiveness of behavioral approaches, contingent and noncontingent reinforcement, and contingency contracting. One of the major contributions attributed to the behavior modification approach is that the behavior modification approach enhances the role of the teacher and parent as the primary agents of positive behavioral change in the classroom and the home. Another advantage noted in the literature is that behavior modification has been found to be effective for many types of behaviors in a wide variety of settings (i.e., schools, hospitals, prisons, and homes). Still another advantage attributed to behavior modification is the elimination of the problems inherent in diagnosing, labeling and classifying children. Specifically, the behavior modification approach eliminates the problems inherent in classification and labeling due to the fact that it
focuses only on the overt and observable behaviors emitted by the person. This approach is particularly valuable for the educator whose primary concern is the development of educational solutions based on the behavior the student is emitting in the classroom rather than any diagnostic label or classification given to the student. Consequently, a growing amount of support has been given to the use of a behavioral approach to classroom management. This support has focused on the effectiveness of behavior approaches, the emphasis placed on the teaching-learning process, and the practicalness of behavioral approaches for the classroom teacher.

Donald Tosti had originally coined contingency management to stand for the techniques appropriate to Premack's (1965) differential probability hypotheses but the term has come to stand for any applied use of reinforcement theory (Tosti and Loehr, 1971, p. 15). The term contingency contracting is used in place of contingency management. Sapp and Williams (1971) limit contingency contracting to the following conditions:

A proclamation is the arrangement and statement of the contingencies by the contingency manager. No agreement is required, and the object of the contract is expected to act as stipulated. Thus a proclamation would not meet the criteria of a contract and would essentially be an imposition by the contingency manager (Sapp and Williams, 1971).
reduced to empirical questions, and the acceptance of behavior modification will in a large part depend upon the results of future research. In any event, the most powerful argument for the endorsement of the behavior modification approach rests with the most basic tenet of operant control: reinforcement. The behavior of the parent, or the educator, who successfully employs behavioral approaches will be shaped in the directions that support the movement, and the wide applicability of the behavioral approaches will be even more firmly established. In all this world there is no controlling agent as forceful and still quite as gentle as positive reinforcement.
CHAPTER III

METHODS AND PROCEDURES

Subjects

The Neighborhood House of Columbus, Ohio, was selected as the study site. The experimenter met with Ms. Lela M. Boykin, Director of the Neighborhood House Tutorial Program, which is located at 940 Caldwell Place, Apt. 5, Columbus, Ohio, 43203. The purposes of the meeting were to discuss the possible use of the Neighborhood House roster for solicitation of parent group participants for the study, and to use their physical facility as the actual study site. The meeting was arranged by Dr. Rick Kelsey, Office of Urban Education, The Ohio State University, who was familiar with the study design. Ms. Boykin agreed to permit the Neighborhood House to participate in the study. (Her letter of approval is in Appendix C).

The parent group participants for the study were solicited through a group meeting at which time the purposes and objectives of the study were explained. The parents were invited by Ms. Boykin to attend a group meeting and volunteers were solicited. The parent group for the study consisted of fifteen volunteers.
Setting

The study was conducted in one of three adjoining two-story apartments which were leased and converted into individual tutoring centers by the Neighborhood House. Figure 1. contains a diagram of the first floor of the center. The first floor entrance led into a room thirty feet wide by twenty feet long, complete with kitchen facilities. Two of the three windows contained air conditioners. The room was equipped with one table, a desk, three large bookcases located on the south wall and three located on the west wall. The three shelves on the south wall contained: A) a set of Collin's encyclopedia and dictionaries; B) pictured encyclopedia and the Merrill Reading Program; and C) reading and language books. The second set of shelves contained: D) flash cards and reading aids; and F) a volume of illustrated encyclopedia of animal life and math skills. There were upper cabinets on the north wall on which a clock was located. A refrigerator and sink were also located in the room.

Figure 2. contains a diagram of the second floor of the center. The stairs led into the hallway of the second floor. Four individual tutoring rooms each contained a window, a long table, two to four chairs, chalkboard, and tutoring materials. The bathroom was also located on this floor.
Figure 1. Diagram of the First Floor of the Center
Figure 2: Diagram of the Second Floor of the Center
Materials

Sign Here: A Contracting Book for Children and Their Parents (Dardig & Heward, 1976) described how to use contingency contracting to change the behavior of family members. The authors used a story form to present the principles of effective contingency contracting. Externally controlled and self-controlled contracts were exemplified in the story. The book was organized into nine chapters; however, for the purpose of this study, the book was divided into five units and presented in five parent group sessions. The five units were organized and presented in the following manner:

- **Unit I** Chapters I & II (Session #1)
- **Unit II** Chapter III (Session #2)
- **Unit III** Chapters IV & V (Session #3)
- **Unit IV** Chapters VI & VII (Session #4)
- **Unit V** Chapters VIII & IX (Session #5)

**Study Questions.** Twenty short answer essay questions accompanied Sign Here to focus the parent group's attention on family problems and methods of solving them. The questions were presented in groups of four with the appropriate unit of study. (Appendix D)
**Contract.** A sample contract was distributed to the parent group. The contract was designed for the parent and/or child to write the task and reward stipulated in the agreement. Space was also provided for the signature of parent and child. A task record was located below the terms of the contract and were used as an observation form to record target behavior or behaviors prior to and after negotiation of the contract. The method of recording target behavior was duration and/or event recording, as determined appropriate for the target behavior. Contracts were discussed with the parent group during all stages of development and the experimenter xeroxed copies of the contracts as they were developed. The xeroxed copies were rated for essential contract elements by two independent raters. The experimenter obtained a copy of each participant's final contract during the fifth parent group session. (See Appendix E - Contract and Contingency Contract Rating Form; Appendix A - Sessions)

**Transparencies.** Three transparencies illustrating ascending, descending, and stable baselines (Cooper, 1974) were used with the parent group to demonstrate the necessity of graphing behavior. Each transparency was made from a drawing on 8½" x 11" paper. (Appendix F)
Overview of Sessions

Sign Here: A Contracting Book for Children and Their Parents was used with the parent group. The book was divided into five units and presented in five of the seven parent group sessions.

Each parent group meeting constituted a session and all sessions were designed as a continuation of the previous session. The assignments for each session were a prelude to the following session. Session #1 was an introductory session to acquaint the parent group with the experimenter and explain the parents' role. Instructional materials were distributed and the parent information forms were obtained from the parent group participants. (Appendix G) Session #2 consisted of a discussion of the instructional materials. Methods of observing behavior, observational forms and contracts to be used for recording behavior, and a discussion on the use of positive reinforcement was presented in Session #3. This pattern of session development was employed throughout the entire study.

The experimenter distributed Chapters I and II of the book, Sign Here, and the study questions to the parent group during the first session. The parents were instructed to read the chapters, have their child read the chapters, and answer any questions the child might have.
If the child was unable to read, the parents read and discussed the chapters with the child. If parents asked if they should read the materials separately or with their child, the experimenter responded by saying "which ever way is most convenient for you." They were also instructed to answer the study questions prior to Session #2. The unit quiz designed for Chapters I and II was administered at the beginning of Session #2. A discussion of the unit quiz, Chapters I and II, and the study questions followed. Chapter III and the accompanying study questions were distributed to the parent group at the beginning of Session #3. This method of distributing the materials to be read in one session and administering the unit quiz at the beginning of the following session, prior to any discussion of the materials, was employed throughout the five units. (For a detailed description of the parent group sessions see Appendix A)

Behavior Definition and Recording

A pre-test/post-test covering the contracting skills presented in Sign Here was administered to the parent group before and after reading Sign Here. The test was divided into two parts, A and B. Part A consisted of seven words to be defined. Part B consisted of ten multiple choice questions relative to contracting, its use, and the use of reinforcers. The parent group was
instructed to place a check on the line which preceded their choice of answer. An answer key was used by the experimenter for scoring the tests. The key was prepared by indicating the correct answers on a pre-/post-test. The purpose of the pre-test was to determine the overall knowledge of the parent group of contracting and was administered during the first session. The post-test was administered during the seventh and final parent group session to determine if the parents acquired contracting skills after reading Sign Here. (The pre-test/post-test was the same – see Appendix H)

**Follow-up Test.** A follow-up test was designed by the experimenter to determine if the parent group retained the contingency contracting concepts learned; and to determine if the concepts were being employed. The test was mailed to the parent group participants approximately two weeks after the completion of the study by the experimenter. The parents were instructed to return the test to the experimenter in the pre-addressed, stamped envelope which was included with the follow-up test. (Appendix I)

**Unit Quiz.** The parent group's comprehension of the concepts of contingency contracting was assessed by evaluating their written performance on each of the five
unit quizzes. The quizzes consisted of the questions from the pre-test/post-test and approximately six questions from the specific unit assignment: multiple choice, true or false, and terms to be defined. (The unit quizzes were administered during each session prior to the discussion period.) The quiz was typed and copied. The parent group used pencils or pens to record their answer in the space preceding each question. (Appendix J)

Independent Rater Agreement. Two evaluators were trained by the experimenter during one one-hour session on the use of the contingency contract rating form. The experimenter provided each evaluator with a copy of the rating form, reviewed the essential elements, and answered any questions. They also rated some sample contracts at this time.

The number of agreements were divided by the number of agreements plus disagreements, and multiplied by one-hundred to establish the reliability of the rating instrument. The criteria for acceptable agreement between the two raters was set at 85 percent or above. If the 85 percent level of agreement was not obtained, the essential elements of the contingency contract were re-explained by the experimenter to the two raters. When 85 percent criteria was reached on each participant's contract, the final contract was be written and initiated
by the parents. The rating on each parent contract was graphed to show the parent group's skills on writing contracts.

**Design**

Reversal designs have been employed successfully to show a functional relationship between interventions. However, in this type of study a reversal design could not be successfully used because of the nature of the design, which required baseline, treatment, and a return to baseline. Once an individual has been taught a skill, such as contracting, there is a low probability of the behavior, during the second baseline, approximating the initial baseline condition. For this study, a multiple baseline design (Cooper, 1974) across unit concepts was used to evaluate the effects of the treatment procedures on the parent group's mastery of contracting skills. A multiple baseline design was used because of its versatility in graphically displaying the effects of the treatment on one behavior while simultaneously displaying the other behaviors completely unaffected by the intervention on the first behavior.

The book, *Sign Here*, was presented to the parents in sections. Each section consisted of only the chapter or chapters necessary for mastery of the specific unit concepts introduced. Each unit concept was distributed
to the parent group during the session prior to the one in which the group was tested.

Baseline data on contracting skills was taken on each concept unit. Training procedure began with concept unit I while the other concept units remained in baseline condition. Concept unit II was then introduced while concept unit I remained in training and the third, fourth, and fifth concept units remained in baseline condition. Each of the concept units remained in baseline condition until introduced for training. Each of these phases are described in detail in the section. Figure 2 illustrates an example of the design.

**Design Conditions**

**Baseline.** Under the baseline condition, all the unit concepts remained in baseline. A pre-test covering the five units was administered during baseline. The parent group was introduced to the book which was used in the study.

**Intervention.** The contracting concepts to be mastered by the parent group were divided into concept groups, but referred to herein as concept units. The multiple baseline design was utilized by introducing contracting concepts during each condition. The parent group's overall knowledge of contracting concepts was measured
Mean Percentage of Correctness

Concept One
Baseline  Intervention₁  Intervention₂

Concept Two

Concept Three

Mean Percentage of Correctness

Sessions

Figure 3
Hypothetical Multiple Baseline Graph
simultaneously with each concept unit across all conditions. The parent group read Chapters I and II. These chapters were discussed with the experimenter. The parents were given reinforcement in the form of verbal praise. The experimenter administered the unit quiz for concept unit one. (Appendix A - Session #2) Unit two, Chapter III was introduced.

Intervention<sub>2</sub>. Intervention<sub>2</sub> consisted of the introduction of unit three, Chapters IV and V of Sign Here. Units three, four, and five remained in baseline. The experimenter discussed the results of unit quiz one with the parent group and administered unit quiz two. (Appendix A - Session #3)

Intervention<sub>3</sub>. The experimenter discussed the results of unit quiz two and administered unit quiz three. Units four and five remained in baseline. The unit quiz was not administered until after the previous unit quiz had been discussed. Unit four, Chapters VI and VII was introduced. This pattern of review, testing, and introduction continued throughout the remaining interventions (2).

Follow-up. A follow-up survey was conducted by the experimenter. Each parent group participant was contacted
by mail and requested to complete a questionnaire and return to the experimenter. Self-addressed, stamped envelopes were provided. (Appendix I)

**Data Collection and Analysis**

The study employed three forms of data analysis. The first was based on information obtained from the parent group's reading of *Sign Here*. Graphic representation of the mean parent group scores were presented for each of the five units. The triangular points represented the mean (X) percentage of correct response for each unit quiz. A group criterion of seventy-five percent correctness for each of the five units presented was employed for determining successful completion of a unit. If criterion was not met, the unit reading was reassigned to the parents who failed to meet criterion. The unit quiz was readministered a maximum of three times to the parents who failed to meet criterion. If a unit quiz was readministered, it was indicated on the graph by the alphabet "r" behind the mean data point with the number of times readministered written as a coefficient (or1). The parents who failed to meet criterion after the maximum number of re-takes proceeded with the next unit.
reading and this was noted in the summary of the study.

The second form of data analysis was concerned with the effectiveness of the initiated contracts on changing the child's behavior. This was accomplished by using the parents' graphed data on the child's behavior. Data on the child's behavior was graphed during baseline, interventions, and for the duration of the study.

The third form of data analysis represented the parent group's contracting skills as indicated through the writing of contingency contracts which were rated by two independent evaluators. The evaluators rated the contracts on the presence of the essential contingency contract elements. (These elements were explained earlier in the paper.) Each element was assigned a ten-point value. The graphed data was the percentage of essential elements present and readily identifiable by the independent evaluators. If there was an upward trend in the parent group's knowledge before the experimenter introduced the study material, no functional statement could be made about introducing these materials nor the parent group's knowledge gained from the study.
CHAPTER IV

RESULTS

The experimenter taught a parent group consisting of nine parents, the concepts and skills sufficient for initiating and implementing contingency contracts with their children. This was accomplished by meeting with the parents as a group on Friday mornings for seven sessions. Each session lasted for approximately one hour during which time the concepts and skills of contingency contracting as presented in *Sign Here: A Contracting Book for Children and Their Parents* (Dardig & Heward, 1976) were taught to the parents. (See overview of sessions, Chapter III, p.61). A unit quiz was administered to the parent group at the beginning of each session. Each unit quiz contained information about the contingency contracting concepts and skills presented in the previous group session. After the parents had demonstrated their mastery of the contingency contracting skills and concepts necessary for initiating and implementing contingency contracts, they were taught to pinpoint and record their children's behavior using the task recording form which accompanied *Sign Here*.

Three forms of data analysis were employed by the experimenter. The first was based on the parent group's
The reading of **Sign Here**. The data point is representative of the group mean score of correct responses on each unit quiz. If a unit quiz was readministered to the group, it is indicated on the graph by the placing of the alphabet "r" behind the mean data point. The number of times a unit quiz was readministered is written as a coefficient to the alphabet.

The second form of graphed data is representative of the parent group's effectiveness in changing their child's behavior through the initiation of contingency contracts. Each parent collected and graphed data on their child's behavior during each of three conditions.

1. Baseline: the parents were instructed to observe and record the number of occurrences of the target behavior exhibited by their child.

2. Intervention: the parents were instructed to observe and record the increase or decrease of the target behavior exhibited by their child after they had initiated and implemented a contingency contract with their child.
3. **Baseline**₂: the parents were instructed to record the frequencies of the child's behavior after the contingency contract had been discontinued.

The third form of data analysis is representative of the contingency contracts written by the parent group. Each contingency contract was rated separately by two independent contract raters, using photocopies of the actual contract. The contracts were rated on the presence of the ten essential elements found in a contingency contract. (See Appendix E).

**Case Studies on Child Behavior**

Various graphing techniques were employed to maximize the efficiency of presenting the parent's negotiated contingency contracts and their effect upon the child's behavior. Each parent and his/her child's change in behavior is presented singularly.

**Case Study #1:** The subject wanted to increase the number of times her daughter cleaned the kitchen. Cleaning the kitchen consisted of washing the dishes, pots, pans, cleaning the stove, and sweeping the kitchen floor. Table 1 depicts the total occurrences of kitchen cleaning behavior exhibited by the subject for each condition.
The parent increased her daughter's kitchen cleaning behavior by negotiating and implementing a contingency contract with her daughter. During baseline₁, which consisted of five days, the subject exhibited the desired kitchen cleaning behavior for two days. During intervention₁, the kitchen cleaning behavior increased to four days within a five day week.

As a reinforcer for her daughter's increased kitchen cleaning behavior, the parent gave her permission to attend "2001", a local club for teenagers, on Sunday nights. The contract was discontinued during baseline₂ and the daughter's kitchen cleaning behavior decreased. She cleaned the kitchen three out of five days which was one day more than she had cleaned during the initial baseline. The contract was reinstated during the second experimental period, intervention₂, and lasted for four days. The parent reported that her daughter cleaned the
kitchen every day during the four day period. A cumulative graph was employed to show the effects of the contingency contract on the daughter's behavior. (Figure 4)

Case Study #2: The parent initiated a contract with her daughter and was successful in increasing the number of times the daughter mopped the kitchen floor and made the bed. The subject attempted to combine two behaviors but the experimenter pointed out that this was not possible unless each behavior was specifically stated in the contract. Figure 5 represents the number of times the daughter mopped the kitchen floor and made the bed.

During baseline₁, the daughter made the bed and mopped the floor two days during a five day period. Intervention₁ consisted of the subject negotiating and implementing a contingency contract with her daughter. The daughter mopped the kitchen floor and made the bed three of the next five days. The contract was discontinued during baseline₂ and the desired behavior was exhibited two of the next four days.
Figure 4. Record of occurrences of kitchen cleaning behavior (e.g., washing dishes, cleaning stove and sweeping floor) of a 16 year old girl. Baseline recorded number of times kitchen was cleaned by subject's daughter before the contingency contract was implemented.

Intervention consists of implementing a contingency contract between subject and daughter. Kitchen cleaning behavior increased from two times out of five days to five times out of five days.

Baseline represents cleaning behavior while contract was not in effect.

Intervention, contingency contract was in effect and cleaning behavior occurred four out of four days.
Figure 5. Record of occurrences of house cleaning (e.g., bed-making and floor mopping) of the subject's 7 year old daughter. Baseline, recorded two occurrences of house cleaning consisting of making bed and mopping the kitchen floor within a five day period. Intervention, which consisted of the subject's mother implementing a contingency contract with her daughter, depicts an increase of three occurrences within a five day period. Baseline, the contingency contract was not in effect and the daughter exhibited the desired behavior two out of four days.
Table 2 depicts the total occurrences of bed making and floor mopping exhibited by the subject for each condition.

TABLE 2

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total No. of Occurrences</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline₁</td>
<td>2</td>
<td>40</td>
</tr>
<tr>
<td>Intervention₁</td>
<td>3</td>
<td>60</td>
</tr>
<tr>
<td>Baseline₂</td>
<td>2</td>
<td>40</td>
</tr>
</tbody>
</table>

5 days = 100 percent

**Case Study #3:** The client wanted to decrease the times her daughter hit her siblings and other neighborhood children. Through the initiation of a contingency contract, there was a decline in the inappropriate behavior exhibited by the client's daughter. (Figure 6). During baseline₁, the daughter exhibited the inappropriate behavior nineteen times during a five day period. The mother instituted a contingency contract with her daughter and her inappropriate behavior declined from nineteen times in five days during baseline₁, to a total of seven times in five days during intervention₂. The contract was not in effect for the next five days during baseline₂. The daughter's inappropriate behavior increased to fifteen times over the next five days, which was four occurrences less than the initial baseline₁, but eight more occurrences
Record of occurrences of hitting sisters and other neighborhood children by a ten year old girl. Baseline₁, the subject's daughter exhibited the inappropriate behavior nineteen times. Intervention₁, contingency contract was implemented by subject and daughter. The daughter's inappropriate behavior decreased from nineteen occurrences to seven occurrences during the time the contingency contract was in effect. Baseline₂, the contingency contract was discontinued and once again, the occurrences of inappropriate behavior increased from seven occurrences (Intervention₁) to fourteen. Intervention₂, the contingency contract was reinstated and the inappropriate behavior decreased to nine occurrences in five days.
Cumulative number of incidents of hitting siblings and other neighborhood children

Baseline
Observation

Intervention
Contract in effect

Baseline
Contract not in effect

Intervention
Contract in effect

Figure 6
than during intervention_1. During intervention_2, there was a reduction to nine occurrences in the daughter's inappropriate behavior. This was a marked reduction but still represented two more occurrences than intervention_1. Table 3 depicts the number of occurrences of the client's daughter hitting siblings and other neighborhood children.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total No. of Occurrences</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline_1</td>
<td>19</td>
<td>38</td>
</tr>
<tr>
<td>Intervention_1</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Baseline_2</td>
<td>14</td>
<td>24</td>
</tr>
<tr>
<td>Intervention_2</td>
<td>9</td>
<td>14</td>
</tr>
</tbody>
</table>

**Case Study #4:** The parent and her daughter implemented a contingency contract to increase the daughter's house cleaning. The daughter was to wash and put away the dishes, sweep the kitchen floor, pick up any clothing left in the living room, dust, and vacuum. The chores were to have been completed prior to the return of the mother from work. The daughter was to receive fifteen dollars per week as a reinforcer.
The subject's daughter did not perform any chores during the five-day observation period which consisted of baseline₁. Intervention₁ consisted of the mother and daughter negotiating and implementing a contingency contract. Figure 7 shows an increase in the daughter's behavior from zero performance during baseline₁, to performing the chores every day during intervention₁ which lasted for the next five days the contract was in effect. During baseline₂, the contract was not in effect for the next five days and the daughter's house cleaning behavior decreased to zero occurrences for the next three days. The follow-up survey revealed that the mother had reinstituted the contract with her daughter and was also negotiating contingency contracts with her other children. Table 4 depicts the number of occurrences of washing dishes, picking up clothing, dusting and vacuuming.

TABLE 4

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total No. of Occurrences</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline₁</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Intervention₁</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>Baseline₂</td>
<td>3</td>
<td>60</td>
</tr>
<tr>
<td>Intervention₂</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5 days = 100 percent
Figure 7. Total number of occurrences of house cleaning behavior consisting of washing dishes, picking up clothing, dusting, and vacuuming exhibited by a 14 year old girl. Baseline₁, the client's daughter exhibited zero occurrences of appropriate behavior during a five day period. Intervention₁, the client instituted a contingency contract with her daughter and the appropriate behavior increased to five occurrences within five days. Baseline₂, the contingency contract was not in effect and the girl's behavior decreased to three times out of five days.
Case Study #5: The parent wanted to increase the number of times her son picked up his toys after he had finished playing with them. The son was to put the toys in the toy box before she returned home from work. The subject had difficulty specifying the behavior she wanted to work on with her son. As examples of this difficulty, she initially stated "help his mother around the house every evening when I get home from work". For how well the task was to be performed, she stated "everything that I do he will join in and help me around the house".

After much discussion with the parent group, the parent pinpointed the target behavior and negotiated a contingency contract. Baseline consisted of the mother observing her son and keeping a tally of the number of times he placed his toys back into the toy box after he had finished playing with them. The mother defined finished playing with a toy as one toy removed from the box, followed by another toy being removed from the box, with the initial toy not being played with by the son for three consecutive minutes. At the end of five days, the mother reported that her son had not once put any toys back into the box. The mother was instructed not to remind or reprimand her son when he did not put the toys in the toy box. (Figure 8)
Figure 8. Total number of occurrences of picking up toys by the subject's son and placing them in the toy box. During the first five days, the child did not exhibit the desired behavior (baseline, which consisted of five days). During intervention, the subject instituted a contingency contract with her son. The son put his toys into the toy box after playing with them five times over the next five days. The subject discontinued the contingency contract during baseline, and the subject's son continued to put his toys away after playing with them for the next nine days. The subject did not reinstate the contingency contract.
Intervention_1 consisted of the mother initiating a contingency contract with her son. The son's behavior increased from not picking up the toys and putting them in the toy box at all, to picking up the toys and putting them back into the box each time he finished playing with them for the next five days. The parent discontinued the contract (baseline_2), and the son continued to pick up and put his toys back into the toy box for the next nine days. As a reinforcer, the mother took the son to the Dairy Queen on Wednesday and Friday nights. The son was allowed to select and pay for the treat of his choice. Table 5 depicts the number of occurrences of the son picking up his toys.

### Table 5

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total No. of Occurrences</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline_1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Intervention_1</td>
<td>5</td>
<td>100</td>
</tr>
<tr>
<td>Baseline_2</td>
<td>9</td>
<td>100</td>
</tr>
</tbody>
</table>

Condition 1 and 2: 5 days = 100
Condition 3: 9 days = 100

Case Study #6: The parent wanted to maintain her son's room cleaning behavior but to decrease his behavior of sweeping the trash into the hall and leaving it after
he cleaned his room. The subject accomplished her task by initiating a contract with the son. The contract maintained his room cleaning behavior, while rewarding him for a decrease in the undesirable behavior of leaving the trash in the hall. During baseline₁, the son cleaned up his room five times and swept the trash into the hall each time he cleaned his room. After the mother and her son negotiated and implemented a contingency contract, intervention₁, the son cleaned his room five times and swept the trash into the hall two of the five times. This represented a reduction of three in the total number of times trash was swept into the hall. The contingency contract was not in effect for the next eight days (baseline₂). The son continued to clean his room all eight days, but he swept trash into the hall on four of the eight days. (Figure 9) Table 6 depicts the total number of occurrences of the son sweeping trash into the hall by each condition.

**Case Study #7:** The subject wanted to stop her daughter from smoking marijuana. Because the subject was unable to accurately record the number of her daughter's marijuana smoking incidents, she had to assume that her daughter was smoking marijuana. The subject made the assumption based upon the following: (1) the daughter's eyes would appear reddish brown in color and she would
Figure 9. Cumulative number of times the subject's 13 year old son swept trash into the hall after cleaning his room. During the initial baseline, the subject's son swept trash into the hall five times over a five day period. The mother negotiated and implemented a contingency contract with her son (intervention), and the sweeping of trash into the hall by the son occurred only two times over the next five days. The contract was not in effect during baseline, and the son swept trash into the hall four times over the next eight days or 50 percent of the time that he cleaned his room.
TABLE 6

<table>
<thead>
<tr>
<th>Condition</th>
<th>No. of Occurrences</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>Room Cleaning</td>
<td>Sweeping Trash Into Hall</td>
</tr>
<tr>
<td>Baseline₁</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Intervention₁</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Baseline₂</td>
<td>8</td>
<td>4</td>
</tr>
</tbody>
</table>

Condition 1 and 2: 5 days = 100
Condition 3: 8 days = 100

appear to be squinting her eyes; and (2) her speech was slow and slurred, as if her tongue was thick. The subject also wanted to increase her daughter's house cleaning behavior which included making the bed, dusting, sweeping, and mopping the floor. The subject was encouraged to concentrate on one of the behaviors and decided to work on increasing the house cleaning behavior. (Figure 10)

During baseline₁, the subject's daughter exhibited the desired house cleaning behavior three days out of five days. The subject and her daughter negotiated and implemented a contingency contract during intervention₁. As a reinforcer for the daughter's house cleaning behavior, the daughter was allowed to remain outside with her friend for two hours. She was to be in the house by 10 o'clock. The daughter's house cleaning behavior
Figure 10. Cumulative number of times the subject's 16 year old daughter cleaned the house, consisting of making the bed, dusting, sweeping, and mopping the kitchen floor. During the initial baseline, the subject's daughter exhibited the desired behavior three times or 60 percent over a five day period. The mother negotiated a contingency contract with her daughter (intervention) for five days. The subject's daughter exhibited the desired behavior daily for the next five days or 100 percent of the time. However, before baseline, the subject's daughter ran away from home and was reported to be living with her father in another section of the city.
increased five times over the next five days. The contingency contract was discontinued during baseline_2 and before it was reinstituted, the daughter ran away. The subject reported that the daughter was living with her father in another part of the city. Table 8 depicts the total number of occurrences of bed making, dusting, sweeping and mopping.

**TABLE 7**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total No. of Occurrences</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline_1</td>
<td>3</td>
<td>60</td>
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<tr>
<td>Intervention_1</td>
<td>4</td>
<td>80</td>
</tr>
<tr>
<td>Baseline_2</td>
<td></td>
<td>Subject's Daughter Ran Away</td>
</tr>
</tbody>
</table>

5 days = 100

**Case Study #8:** The mother wanted to increase the number of times that her son fed the dog and gave him water. (Figure 11) The subject wanted her son to feed the dog, including filling his water buckets if needed, twice a day. During the week of baseline_1, the subject's son fed the dog and filled the water bucket three times within a five-day period. The subject and her son negotiated and implemented a contingency contract. During
Figure 11. Total number of times the subject's ten year old son fed the dog and provided him with water. During baseline, the son fed the dog and provided him with water three days out of a five day period. The subject entered into a contingency contract with son (intervention) and over the next five days, the son fed the dog and provided him with water four of the next five days. Baseline consisted of the contract not being in effect and the subject's son exhibited the desired behavior two days out of four or 50 percent of the time.
intervention₁, which lasted for five days, the son fed the dog and gave him water daily for four of the next five days. As a reinforcer, the son received a piece of cake after dinner each night or another dessert of his choice. During baseline₂, which lasted for four days, the contingency contract was not in effect and the son continued to feed and water the dog three days of the four-day period. Table 9 depicts the total number of occurrences of the son feeding the dog and providing water.

**TABLE 8**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Total No. of Occurrences</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Baseline₁</td>
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<tr>
<td>Intervention₁</td>
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</tr>
<tr>
<td>Baseline₂</td>
<td>3</td>
<td>60</td>
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5 days = 100

**Summary of Case Studies**

Eight of the nine parents attempted to modify their children's behavior through the negotiation and implementation of contingency contracts. Eight of the nine parents experienced some success in modifying their children's behavior. Their success was depicted using an ABA design.
Report of Data on Parent Group's Reading of Sign Here

Sign Here: A Contracting Book for Children and Their Parents (Dardig & Heward, 1976) was divided into five units and presented to the parent group. Each unit presented contingency contracting skills and concepts necessary for the parents to negotiate and implement contingency contracts with their children. Each parent group participant was instructed to read, along with their child, the units of Sign Here. If the child was unable to read, the parent was instructed to read the material to the child. After the parents had read each unit, the experimenter administered a unit quiz. Figure 12 depicts the graphic representation of the information obtained from the parent group's reading of Sign Here. The unit quizzes were constructed to serve two purposes. The first purpose was to test the parent group's knowledge of the skills and concepts of contingency contracting presented in a particular unit of study. The second purpose was to determine if there was an increase in the parent group's overall knowledge of the skills and concepts needed for contingency contracting prior to their reading the unit of study presented.
Figure 12. Parent Group Comprehension of Contingency Contracting Concepts.

Parent group scores on each concept unit after the material had been discussed and prior to the administering of the next unit quiz. i.e. discussion of concept in unit one after completion of the unit one quiz, but prior to the administering of the unit 2 quiz. The follow-up test was administered two weeks after the post test.
Percentage of correct responses to weekly quiz
Graphed Representation

The mean parent group scores were presented for each of the five unit quizzes. The mean is represented by a data point. The data represents the mean percentage for correct responses by the parent group on the unit quizzes. A group criterion of 75 percent correct response for each of the five units was employed for successful mastery of the units. (Figure 13 and 14)

A pre-test was administered to the parent group to assess their overall knowledge of contingency contracting prior to their reading of Sign Here. The pre-test scores ranged from a low of 6 percent correct response to a high of 81 percent correct response. (Table 9) Mastery of the first unit quiz was obtained by all group members with a score range of 83 percent correct response to a high of 100 percent correct response for all items presented. The mean group score was 98 percent correct response for the total group. Unit quiz number 2 was readministered to two of the parent group participants after they scored 60 and 50 percent correct response on the first administering of the unit quiz. Both parents scored 100 percent correct response on the second administering of the quiz. The group scores ranged from a low of 83 percent to a high of 100 percent correct
<table>
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<th>Test Type</th>
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<td>Unit Quiz 1</td>
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<td>Unit Quiz 2</td>
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<td>Unit Quiz 5</td>
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<td>Post-Test</td>
<td>80</td>
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<tr>
<td>Follow-up Test</td>
<td>76</td>
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</tbody>
</table>

Figure 13. Mean score of overall knowledge of contingency contracting skills (Part B of Unit Quizzes)

<table>
<thead>
<tr>
<th>Unit</th>
<th>Score</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>98</td>
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<tr>
<td>2</td>
<td>98</td>
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<tr>
<td>3</td>
<td>90</td>
</tr>
<tr>
<td>4</td>
<td>100</td>
</tr>
<tr>
<td>5</td>
<td>100</td>
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</tbody>
</table>

Figure 14. Mean group score on contingency contracting concepts presented on unit quizzes
response. The group mean was 98 percent. Unit quizzes number 3 and 4 were readministered to one group member. The range of scores for unit quiz number 3 was from 83 to a high of 100, with a mean of 92 percent correct response for the total group. The total parent group score for unit quiz number 4 was 100 percent. The parent group obtained mastery of unit quiz number 5 the first time it was administered. The group score range was from a low of 81 to a high of 100 percent correct response. The group mean was 94 percent correct response for all items presented.

The experimenter administered a post-test to the parent group. The parent group scores ranged from a low of 81 to a high of 100 percent correct response. (Table 9) A group mean of 81 percent was obtained. The follow-up test was administered to the parent group. (Chapter 3, p.63). The results were as follows. A total of nine follow-up tests were returned to the experimenter. The scores ranged from a low of 67 to a high of 100 percent correct response. The group mean was 76 percent correct response for all parents completing the follow-up test.

Summary of Information Findings

The parent group obtained mastery on all five unit quizzes presented. Unit quiz number 2 was administered a second time to two of the parent group members. The
<table>
<thead>
<tr>
<th>Unit Quiz Number</th>
<th>Total Number Tested</th>
<th>Range of Scores</th>
<th>Number Readministered</th>
<th>Number of Parents</th>
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<tr>
<td></td>
<td></td>
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<td>Follow-up</td>
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<td>100</td>
<td>67</td>
<td>75.77</td>
</tr>
</tbody>
</table>
two members were successful in obtaining mastery on the second administering of the unit quiz. It was necessary for one parent group member to retake unit quizzes number 3 and 4 before obtaining mastery. Eight parent group members successfully completed the post-test. A follow-up test was administered to the parent group two weeks after the parent group sessions ended. Eight of the nine parent group members obtained mastery on the follow-up test by scoring higher than 75 percent correct response on all items presented. One parent did not obtain a score of 75 percent on the follow-up test. The subject scored 67 percent correct response for all items presented. The parent group score range for the follow-up test was a low of 67 percent to a high of 100 percent correct response. A group mean of 76 was obtained for the total parent group response for all items presented on the follow-up test (Table 9). Figure 12 depicts the graphic representation of the contingency contracting skills and concepts necessary for negotiating and implementing contingency contracts obtained from the parent group's reading of Sign Here. The data represents the parent group's mean of scores on the unit quizzes.

**Interobserver Measures**

Two evaluators were trained by the experimenter during one, one-half hour session on the use of the
contingency contract rating form. (Chapter 3, p.64; Appendix E). The experimenter provided each evaluator with a copy of the rating form, reviewed the essential elements, and answered questions. The evaluators rated sample contracts. A total of three contracts for each parent was rated by the independent raters. Table 10 depicts the percentage of agreement between the independent contract raters and the number of essential contract elements present.

The independent raters had difficulty rating the contracts of Parent number 1, as indicated by the low rate of agreement between the raters. However, this was not true on Parent number 2's second and third contracts. The first time Parent number 2's second and third contracts were rated for the number of essential elements present, the rater's percentage of agreement was 60 percent on all essential elements present. The experimenter re-explained the essential elements to the raters who re-evaluated Parent number 2's second and third contracts. The percentage of agreement for all essential elements present was 100 percent. The items and rater's comments on Parent number 2's second contract were as follows. Under the task category, does contract state: (1) what the task will be, (Comment: does not define the component that she wants to work with in modifying behavior);
<table>
<thead>
<tr>
<th>Parent</th>
<th>Contract Number</th>
<th>Number of Essential Elements Present</th>
<th>Percentage of Agreement</th>
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<td>3</td>
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</tr>
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<td></td>
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<td>9</td>
<td>100</td>
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</table>
(2) when the task will be performed (comment: not specific); and (3) how well the task will be performed (comment: does not define what "less common" is). Under the reward category, does contract state: (1) what the reward will be (comment: not specific; should specify the privilege); and (2) how much or specific amount of reward (comment: not specific). The items and rater's comments on Parent number 2's third contract were as follows.

Under the task category, does contract state: (1) how well the task will be performed (comment: getting there but should be specific about "lady like" and "common behavior"). For the reward category, does contract state: (1) what the reward will be (comment: should define the privilege).

The raters also had difficulty rating Parent number 4's second and third contracts. The problem was not one of deciding which essential elements were or were not present, but one of illegibility. The independent raters could not decipher the task portion of the contract related to how well the task would be performed. The independent raters were able to achieve an agreement of 85 percent on the second contract and 90 percent on the third contract.

Parent number 5 presented an interesting problem for the independent raters. Under the reward category
of her second contract (what the reward will be), the subject indicated salary. One of the raters found this to be confusing. The second independent rater found the subject's arithmetic computation incorrect. The raters were able to obtain a 90 and 100 percent agreement.

The independent rater agreement on Parent number 9's first and second contracts was 80 percent and 100 percent; however, the third contract contained an error in the reward section. The subject's contract was written as if she was to feed the dog twice a day rather than her child. The subject corrected her error and the independent raters achieved 100 percent agreement.

**Discussion**

One question of the study was to determine if parents could acquire sufficient knowledge and concepts of contingency contracting by reading *Sign Here*. The experiment began with seventeen parents. Of the initial seventeen, three parents did not take the pre-test and decided not to participate in the study. The pre-test was administered to the fourteen remaining parents and consisted of all the contingency contracting skills in *Sign Here* (Appendix H).

The mean score for the fourteen parents was 28.5 percent correct response for the items presented on the pre-test. The parent group score range was from a high
of 81 percent correct response to a low of 6 percent correct response. Of the fourteen parent group members who took the pre-test, five members left the group. One parent was admitted to the hospital, two of the parents became employed, and one parent moved to another state. One of the two parents who became employed completed the first unit quiz before leaving the group. The parent group sessions continued with nine of the initial seventeen parents. Two of the parent group sessions were rescheduled due to the late arrival of food stamps on one occasion and because the assistance checks arrived late and the parents remained at home to await delivery of the mail on another occasion. Most of the parent group participants were recipients of food stamps and public assistance.

The second question of the study was to determine if parents would negotiate and implement contingency contracts with their children as demonstrated through written contracts employing the skills and concepts acquired from their reading of Sign Here. The third question of the study was to determine if these parents would be successful in changing their child's behavior by implementing contingency contracts as indicated by graphed data.

The results of the study demonstrated that eight of the nine parents, using an ABA design, achieved success
in altering their child's behavior. Only one parent did not experience success in altering the child's behavior. This parent experienced only partial success at meeting the criteria set for each of the unit quizzes. Eight of the parents successfully mastered the contingency contracting skills presented in Sign Here. The parent group's overall knowledge of contracting skills rose from a group mean of 28.5 (pre-test) to 93 (fifth parent group session). This upward trend in the parent group's overall knowledge of the contingency contracting skills, as indicated in Figure 11, occurred after each unit quiz was administered. This supported a functional relationship between the instruction, introduction, and materials used and was responsible for the parent group's knowledge gained from the study.

**Summary and Conclusions**

1. Eight parents were successful in modifying their child's behavior as indicated by graphed data employing an ABA design. One member (12 percent of the parent group) "did not experience success in changing the child's behavior".

2. With the exception of one, the parents "successfully mastered the contingency contracting skills" presented in Sign Here.
3. With the exception of one parent, the parent group negotiated and implemented contingency contracts with their children.

4. The contracts contained the essential elements found in contracts.

5. Seven of the nine parents felt that they handled their child's behavior problems better after participating in the parent group study.

6. Seven of the parents acknowledged on the follow-up survey that they were presently using contingency contracting in dealing with their child's behavior problems.

7. Eight parents felt that their participation in the parent group was beneficial to them and their families.

8. Seven parents indicated that they would participate in other similar studies.

9. The upward trend in the parent group's knowledge of the overall contingency contracting skills, after each unit quiz was administered, substantiated the theory that a functional relationship existed between the introduction, instruction, and the materials used in the study.
CHAPTER V

DISCUSSION, LIMITATIONS, IMPLICATIONS AND SUMMARY

Introduction and Discussion

Child rearing practices may be influenced by many sources, including television, friends, relatives, and professional guidance counselors skilled in behavior techniques. Many view behavior modification as a technique only for eliminating disruptive behavior. However, an abundance of literature has revealed that behavioral principles can be applied effectively on a wide variety of behaviors in a wide variety of settings (e.g., Williams, 1959; Boardman, 1962; Hawkins, Peterson, Schweid, and Bijou, 1966; O'Leary, O'Leary, and Becker, 1967; Mira, 1970; Patterson, McNeal, Hawkins, and Phelps, 1967; Hamblin and Hamblin, 1972; Knight and McKenzie, 1974; Homme, 1970; Bristol and Slonne, Jr., 1974; Patterson and Gullion, 1971). One contribution attributed to behavior modification is the enhanced role of the parent as the primary change agent in the home. Chapter V contains the limitations, implications, recommendations for future research, and summary. Each question of the study is presented singly.
The purpose of the present study was: (1) to determine if parents could acquire sufficient knowledge and concepts of contingency contracting by reading one source, Sign Here: A Contracting Book for Children and Their Parents (Dardig and Heward, 1976), to initiate and implement written contracts with their children; (2) to determine if parents would negotiate and implement contingency contracts with their children, as demonstrated through verbal and written use of concepts and skills acquired from reading Sign Here; and (3) to determine if these parents would be successful in changing the child's behavior by implementing contingency contracts as documented by graphed data.

Review of Three Major Questions

1. Will parents acquire sufficient knowledge and concepts of contingency contracting by reading Sign Here? A multiple baseline design (Chapter IV; Figure 12) indicated that the nine parents in the parent group successfully mastered the contingency contracting skills presented in Sign Here. As noted in the foregoing literature, O'Dell (1974) pointed out that since parents are the primary influencers of the child's behavior during the formative years, it is the parent who must be trained in behavior modification techniques. Through parent group
training, the experimenter taught nine parents to record the frequency of occurrence of the pinpointed target behavior.

Discussion of #1

It might be pointed out that one parent was the most unsuccessful member of the parent group. She scored 100 percent correct response on the first unit quiz, and 83 percent on the second unit quiz. Unit quizzes three and four had to be readministered. This parent did not take the post-test and scored 67 on the follow-up test. She was unable to specifically state the reward to be used when and if a contract was initiated; however, she was allowed to remain a participant in the parent group because it was agreed that she could profit from the group encounter and possibly learn a systematic procedure for handling her family problems.

Patterson and Gullion (1971) found it possible to train four to five families at a time in group sessions lasting two hours. One aspect of Patterson's training program was that he insisted upon at least two adult family members actively participating in the program. Seven of the nine parent group participants in the present study had no other adults in the homes.
2. Will parents demonstrate through written contracts the skills and concepts of contingency contracting learned? Eight of the nine parents were successful in writing and implementing contingency contracts with their children. The contracts contained the essential elements found in contracts and demonstrated the parents' mastery of the skills and concepts of contingency contracting learned.

Discussion of #2

With the exception of one parent, the parent group negotiated and implemented contingency contracts with their children. One parent had difficulty in behaviorally stating her target behavior and did not write a contract. This parent's initial target behavior was to increase her daughter's skill in cleaning the bathroom. However, she later decided to work on increasing the number of times her other daughter "conducted herself less common". The experimenter and other members of the parent group tried to secure a behavioral definition as to what constituted acting "less common", but to no avail. She did not implement a contingency contract with her daughter. In spite of the fact that the parent group members worked with the subject, she was unable to behaviorally define her target behavior. Patterson (1969) noted that parents tend to use vague terms and are usually incorrect in estimating how often a particular behavior really occurs.
3. Did parents, through implementation of contracts with their children, successfully modify the child's behavior as indicated by graphed data? The results of the study demonstrated that eight of the nine parents, using an ABA design, achieved success in altering their child's behavior. The only parent who did not experience success was the same parent who experienced only partial success at meeting the criteria set for each of the unit quizzes.

**Discussion of #3**

Walder, Cohen and Breiter (1969) described three approaches for parent training in behavior application—educational groups, individual consultations, and controlled learning environments in the home. The foregoing authors described the purpose of the educational group as teaching parents general principles of learning how to perform functional analysis of behavior. These approaches advocated by Walder, et.al. were not feasible with the parent group involved in the present study because of the time involved. Walder, et. al. suggested a program which lasted approximately 19 weeks. The experimenter found that after the parent group sessions began, keeping the parents motivated was a prime problem. However, with the formation of a parent study group by one of the parents, motivation was not a primary problem.
Limitations

The Neighborhood House of Columbus, Ohio was selected as the study site. The parent group participants for the study were solicited through a group meeting at which time the purposes and objectives of the study were explained. A total of nine parents completed the instructional program. All but one of the parents were black. One of the nine parents had completed college and another parent was enrolled in a high school completion program for drop-outs. The other parent group participants had less than a high school education. The mother was head of household in seven of the nine participants' homes and eight of the nine parent group members received public assistance and food stamps.

Discussion

Subjects and setting - The use of the Neighborhood House and roster as a means for solicitation of possible parent group participants for the study was an added advantage because most of the potential group members were familiar with one another. All of the group members lived in the community which eliminated the problem of transportation to and from the sessions.

The study was conducted in one of three adjoining two-story apartments which had been leased and converted into individual tutoring centers by the Neighborhood
House. The fact that a familiar facility was used seemingly facilitated rapport between the experimenter and the participants.

There were no drop-outs other than the five parents who dropped out after the pre-test was administered. Nine parent group members remained throughout the duration of the study. This represented a major accomplishment for the parents. The fact that eight of the nine parents, along with their children, were able to negotiate the terms of their contracts and agree upon the reinforcers to be used represented a drastic change in the child rearing practices of the parent group participants. Most of the parents were accustomed to a parent dominated relationship with their children. One example of the change in the parent group's child rearing practices was the parent who agreed to allow her daughter to go to "2001", a local night club for teenagers located in the University area. This mother was very religious and her idea of a good daughter was one who sent to Church and "served the Lord". This was brought out in a personal conversation between the experimenter and the parent during one of many of the group discussions with the experimenter.

The commonality of backgrounds between the experimenter and the parent group members were also discussed. The experimenter and at least three of the parent group
participants were from North Carolina. The other six members were also from other southern states. Comparisons between child rearing practices in the South "then" and child rearing practices in the North "now" were made. Most of the parents agreed that they used different child rearing practices from those of their parents.

During one discussion, the experimenter asked the parent group members what expectations they held for their children. Examples of their replies were: to get an honest job and go to work regularly, stay out of trouble, stay out of jail, go to Church, get married and settle down. The parents agreed that they wanted their children to have a better life and accomplish more in life than they had accomplished. They felt that their children have better opportunities for educational and economical growth, and expressed the wish that their children would take advantage of those opportunities during their youth.

The experimenter felt that these and other subsequent discussions gave the parents a chance to express their feelings and concerns about the future of their children. The discussions were motivational and inspired the parents to remain in the group for the duration of the study.
Design - Reversal designs have been employed successfully to show a functional relationship between interventions. However, in the present study, a reversal design could not be successfully used because of the nature of the design, which required baseline, treatment, and a return to baseline. Once an individual has been taught a skill, such as contracting, there is a low probability of the behavior approximating the initial baseline condition during the second baseline. For this study, a multiple baseline design (Cooper, 1974) across unit concepts was used to evaluate the effects of the treatment procedures on the parent group's mastery of contracting skills. A multiple baseline design was used because of its versatility in graphically displaying the effects of the treatment on one behavior while simultaneously displaying the other behaviors completely unaffected by the intervention on the first behavior.

Some of the disadvantages of the design employer were: it did not allow for control for parents obtaining knowledge of contingency contracting skills prior to introduction of the information by the experimenter; it did not allow for between subject or subject to subject comparison; total group data on the unit quizzes was the only graphed data representative of the parent group's knowledge and skills of contingency contracting obtained
through their reading of Sign Here; there were no provisions made for parents who did not score mastery on the follow-up survey; and provisions were not made to prevent parent group participants from collaborating on the follow-up survey.

Data Analysis - The study employed three forms of data analysis. The first was based on information obtained from the parent group's reading of Sign Here. The second form of data analysis was concerned with the effectiveness of the initiated contracts on changing the child's behavior. The third form of data analysis represented the parent group's contracting skills as indicated through the writing of contingency contracts which were rated by two independent evaluators.

Data analysis could have been based on each parent's reading of Sign Here. Each parent's score on the unit quizzes could have been graphed, thus allowing for comparison between subjects within the group. The group criterion for correct response for each unit presented could have been set lower and the unit reading could have been discussed with the parents prior to administering the unit quiz. The effects of the initiated contracts on the child's behavior could have been measured using an independent observer in the home. If this was not possible, another family member could have been used as an
independent observer to record the data. Once the contingency contracts had been written, they could have been rated jointly by the parent and child.

Implications

As noted in the discussion, parents have been the recipient of advice and methods on rearing their children from various sources, mass media, friends, relatives and professionals. However, the present research has indicated that a non-professional parent can successfully carry out behavioral applications after reading programmed materials. The parents in the present study were of a low socioeconomical class and had a below average education. The effectiveness of the same type of instructional program and materials could be assessed utilizing parent groups of various socioeconomic levels and educational backgrounds. By doing so, more information could be gained on what types of parents would profit most from an instructional program.

Another implication of the present study regarding the children of parents participating in this type of group instructional program might involve the child as the group member with the responsibility of involving the parent. In this way, the child would become more aware of the alteration in his own behavior and further assess the age range and readability of the program materials used.
Recommendations for Further Research

1. A similar instructional program could be conducted utilizing parents of different socioeconomic levels and varied educational backgrounds.

2. The materials could be used with fathers only, both parents, and father-child groups.

3. Parents in the group could assist other less successful parents in negotiating contracts.

4. The effectiveness of parent groups receiving instruction and discussion of the materials could be assessed to parent groups not receiving instruction and discussion of the materials.

5. Parent group mean and range of scores on the unit quizzes without discussion of the materials could be compared to scores after discussion of the materials and taking of the unit quizzes.

6. Parent group participants could have a pre-test administered which would include all of the contingency contracting skills and unit quizzes. The overall contracting skills could be measured by administering a pre-test, interim test, and a post-test rather than unit quizzes.
7. Possibly more families which have both parents present in the home could be considered.
8. Reinforcement other than verbal feedback could be used.

Summary

The purpose of the present study was to assess parental effectiveness in changing children's behavior in the home with the parent as the primary change agent. The method employed was parent group instruction in contingency contracting using programmed materials. The study consisted of five weekly meetings of one hour duration, a final meeting during which time certificates of appreciation were given to the participants in the study, and a follow-up survey which was mailed to the parent group participants two weeks after the completion of the study.

The questions of the study were: (1) could parents acquire sufficient skills and concepts of contingency contracting from their reading of programmed materials to negotiate and implement contingency contracts with their children; (2) would parents demonstrate these skills through verbal and written contracts with their children; and (3) would the parents be effective in altering their children's behavior as indicated through graphed data.
The evaluation of the parent group's comprehension of the skills and concepts of contingency contracting presented in the programmed material was by a multiple baseline design. Independent raters were trained by the experimenter and rated the parent's written contracts. When the parents' contracts contained the essential elements, they implemented the contract with their child and recorded the child's behavior using the recording forms supplied by the experimenter. The parents' data on the child's behavior was graphed.

A total of nine parents completed the instructional program. All but one of the parents were black. One of the nine parents had completed college and another parent was enrolled in a high school completion program for drop-outs. The other parent group participants had less than a high school education. The mother was head of the household in seven of the nine participant's homes and eight of the group members received food stamps and public assistance.

The general results of the study were as follows:

1. A multiple baseline design procedure indicated that all nine of the parents successfully mastered the skills and concepts of contingency contracting presented in the programmed material.
2. Instructing the parents in contingency contracting was an effective method for modifying the child's behavior in the home with the parent as primary change agent.

3. With the exception of one parent, the group negotiated and implemented contingency contracts which resulted in altering their child's behavior as indicated by data graphed employing an ABA design.

4. A follow-up survey indicated that seven of the nine parents felt that they handled their child's behavior problems better after having participated in the parent group study.

5. Eight parents felt that their participation in the study was beneficial to them and their families.
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BIBLIOGRAPHY

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APPENDIX A

SESSIONS #1 - #7
OUTLINE OF SESSION #1

INTRODUCTION
PURPOSE OF MEETING
NATURE OF STUDY
NATURE OF BOOK (SIGN HERE)
CRITIQUE OF BOOK
PARENTS' ROLE AND EXPECTATIONS
COMPLETION OF INFORMATION FORMS
PARENTS
CHILDREN
ADMINISTER PRE-TEST
DISTRIBUTE CHAPTERS I AND II OF SIGN HERE
ADJOURNMENT
Session #1

Introduction - "Good morning/afternoon. My name is James Norman. I am a doctoral student in Learning and Behavioral Disorders, Faculty for Exceptional Children, College of Education at the Ohio State University. I am from North Carolina where I taught in the public schools for seven years. The last three years were at a State Hospital working with the emotionally disturbed in the Children's and Adolescent unit."

Purpose of meeting - "I am here today to ask you to take part in a family group experiment as a part of my dissertation research in partial fulfillment of the requirements for the Ph.D. degree."

Nature of study - "I am sure that all of you as parents have had the experience of your child having done something that you did not approve. I know that you can probably think of some behavior which he or she has that you would like to change. You probably have had advice from relatives and neighbors about how to change your child's behavior. What I plan to do, with your help, is to change your child's behavior by applying a behavioral approach using the book." (show book) "I know that you do not rear children by a book. That is not what I am planning for you to do either, but I want us
to use this book because it is designed and written for children and their parents. I will explain the techniques that we will use—contingency contracting and positive reinforcement—to change your child's behavior(s). Your use of this book will result in your having a systematic approach and this is important. Not only will you deal more effectively with your children but also with others. Are you familiar with the old saying: 'you catch more flies with molasses than you do with vinegar?"' Experimenter explained saying to parents.

**Nature and Critique of book** - "Sign Here: A Contracting Book for Children and Their Parents (Dardig & Heward, 1976) is a graphic, written illustration of a typical family and their problems. The book explains how the family solved their problems using contingency contracts and reinforcement. The style of the book should make it readable to parents and children of all ages and educational levels."

**Parents' role and expectations** - "Each of you will be expected to complete certain assignments which I will explain to you in detail. If you have problems or need additional information, my telephone number is 471-0525. Each assignment will be due at the next meeting. You will be expected to read each chapter of the book to your child if he or she cannot read, and you
will be expected to discuss the chapters with your child."

**Parent information forms** - Experimenter distributed forms to each parent group participant. "Please complete these forms so that I will have a record of the parents and children involved in the study. This information will not be made public at any time and will only be used for my records."

**Administer pre-test** - "I am going to give you a brief test. You are not expected to be able to answer all of the questions. In fact, you may not know the answers to any of the questions. However, before the completion of the study, you will not only know the answers to the questions and the definitions of the words, but you will be using the words. Later on, you will probably find that you have been doing some of the things that these words mean. You will not be rated or receive a grade for this test. This is my way of assessing you. I have to find a starting point and make certain that we all learn the same things. I will also give you tests as we progress. The purpose will be to evaluate our progress and to determine what we need to discuss or if further explanation is needed."

**Distribute Chapters I and II** - One copy of Chapters I and II of *Sign Here* and the study questions were given to each family participating. "As I said earlier, this
material is easy to read and you may be surprised at just how much the family in this book resembles your family.

For our next meeting, I would like for you to do the following:

1. Read the chapters and have your child read them too (if child cannot read, read and explain the chapters to him or her).
2. Make sure that you remember problems that the family had in these chapters.
3. Remember how the family solved their problems.
4. Find out what each family member wanted; i.e., Mr. Galen wanted to sleep because he had to go to work.
5. Answer the study questions; they will give you clues on what you should remember.
6. Think about some of the things you would like to change with your child.
7. Think about the method you would like to use to change your child's behavior."

Adjourn meeting - "It will be necessary for you to attend each session." The experimenter scheduled the time and date for the next parent group session and thanked the group for participating in the study.
INTRODUCTION
ADMINISTER UNIT QUIZ
DISCUSSION OF PREVIOUS ASSIGNMENT
INTRODUCTION TO REINFORCEMENT SYSTEM
INTRODUCTION OF OBSERVATIONAL FORMS
INTRODUCTION OF OBSERVATIONAL METHOD
DISTRIBUTE CHAPTER III OF SIGN HERE
ADJOURNMENT
Session #2

**Introduction** - Greet parents.

**Administer unit quiz**

**Discussion of assignment** - "Did you have any problems? Is your family similar to the Galen family? In what way? How does your family solve its problems? Does it work? How could it be more effective?"

**Introduction to reinforcement system** - "When your husband, children, or friends do something that you like, what do you do or say? Why? You do or say something nice because you want the person to know that you appreciate what he or she has done. Your response to the person's deed in kindness also insures the probability of that person doing or saying something good again. This is what reinforcement is all about. In fact, this is a good working definition of positive reinforcement--something which increases the possibility that the behavior it follows will recur."

"In Sign Here, what behavior did the father want to decrease in Jeffrey?" The experimenter solicited group response. "What did he do? What did Mrs. Galen want to stop Pamela from doing? What did she want Lynn to do? As a result of the parents' and children's needs, what were their solutions? How did they make their contracts? What went into the contracts? That is what we
call a contingency contract. It is a written agreement specifically stating what a person will receive if he or she does certain specified things. Another way of saying this would be a written agreement specifically stating the criterion and terminal behavior with the reinforcement(s) having been previously agreed upon. Reinforcement can be used to increase or decrease behavior(s)."

**Introduce contract and task record** - Experimenter distributed copies of the contract to the parent group. "I want you to study the contract because it will be used with your child. The lower portion will be used to record the occurrence of the behavior. The observer or recorder will be you. The time of observation will be when you begin your observation of your child and when you end your observation.

**Method of observing** - You can observe your child while cooking, eating meals, or watching television. You will need only a piece of tape on your wrist or a small piece of paper (small enough to hide in hand), and a watch or clock with a second hand. You may even use an egg-timer. Write the child's name that you will be observing and the location (where the child was during observation)."

**Assignment** - "I would like for you to observe your child. You decide on the behavior(s) you want to increase
or decrease. I want you to keep a tally of the occurrences of the behavior you have decided upon. Are there any questions? For the second part of your assignment, I want you to make a contract stating what the child will do and what you will do in return. It is very important that you do things the same as you have been doing them during your periods of observation. This is what we call baseline data collecting. You do everything just as you were doing it but keep a record of the occurrences. This is important for later use when we begin to examine the behavior chain of events; and it will also be important information for setting up your contract. Are there any questions?"

Distribute Chapter III - One copy of Chapter III of Sign Here and the accompanying study questions were given to the participants. They were reminded to read and discuss the chapter with their child.

Adjourn meeting - "Bring your contracts to the next meeting. Once again, let me thank you for participating and I will see you next week." The experimenter scheduled the time and date for the next session. "If you have problems or questions before the next meeting, call me."
OUTLINE OF SESSION #3

INTRODUCTION
ADMINISTER UNIT QUIZ
DISCUSSION OF PREVIOUS ASSIGNMENT
REVIEW OF CONCEPTS
INTRODUCTION TO GRAPHING
DISTRIBUTE CHAPTERS IV AND V OF SIGN HERE
ADJOURNMENT
Session #3

**Introduction** - Greet parents.

**Administer unit quiz** - "I would like for you to answer as many of the questions as possible. It will help me and you determine if a review of some of the information is needed. It will also help us determine whether some of the concepts need further clarification."

**Discussion of assignment** - "Did you have any problems recording your child's behavior? Who would like to tell us about their observation? I would like for you to share the following information with the group about your observation:

1. The target behavior observed
2. the duration of observation
3. how you arrived at the total occurrences of behavior observed
4. whether you would like to see the behavior increased or decreased
5. the type contract you would initiate
   a. what would be expected of the child
   b. what would be expected of you in return."

The experimenter examined observation forms and sample contracts of three or four members of the group and solicited input from other members. The experimenter also gave verbal reinforcement to group members sharing
the above; i.e., you really did a great job; I like what I've seen at this point.

**Review of concepts** - "Briefly, we will review the information and concepts presented to this point. We will conduct our review in the following manner. I will give you an example or say a word; you will in turn tell me what the example represents or the definition of the word. 'I really like the way you completed all of your assignments, Mrs. Jones.' What is this an example of? 'I am going to keep a record of the number of times you bring in your assignments for the next seven days.' What will I be doing? 'I will write out what is expected of you. You are to turn in your assignments for the next seven consecutive days and with 80 percent correctness on content. If you do, I will take you to the movie. If you agree, sign here.' What is that an example of? Do you have any problems that you would like to discuss or any questions?"

**Introduction to graphing** - "Today, I want to tell you about graphing and recording your observational data. First, let me explain why it is necessary to graph. Graphing gives a visual record of the frequency of the behavior and whether the behavior is increasing, decreasing, or stable (baseline). I will now show you an example of an increasing baseline (transparency with
overhead projector). Note how the frequency of behavior is going up as indicated by the data point on the graph.

I will now show you an example of a decreasing baseline. Note how the frequency of the behavior is going down as indicated by the data point on the graph. I will now show you an example of a stable baseline. Note how the frequency of behavior is even or level.

Let us turn our attention to line "A" which runs east and west (horizontally). The numbers at the bottom of line "A" represent the periods of observation or days observed. Each day that you observe would be recorded here. Line "B" runs north and south (vertically). The numbers on the left of line "B" represent the level or frequency of the behavior observed. The method of graphing that we will use will be to place the data point over the number of days or periods observed, directly across from the percentage of occurrences." The experimenter demonstrated by use of the chalkboard.

Assignment - "Your assignment for the next meeting is to observe your child, record the target behavior, and the number of occurrences. Draw a graph and place this information on the graph. For the second part of your assignment, I would like for you and your child to initiate a contract which you will bring to the next meeting. Remember the points of a good contract are:
1. each person writes what he will do and what will happen if he does what was agreed to;

2. each person agrees on the length of the contract, the reinforcement, and when the reinforcement is to take place; and

3. each person must sign the contract.

Distribute Chapters IV and V

Adjourn meeting - The experimenter scheduled the time and date for the next session.
OUTLINE OF SESSION #4

INTRODUCTION
ADMINISTER UNIT QUIZ
DISCUSSION OF PREVIOUS ASSIGNMENT
ASSIGNMENT
DISTRIBUTE CHAPTERS VI AND VII OF SIGN HERE
ADJOURNMENT
Session #4

**Introduction** - Greet parents.

**Administer unit quiz**

**Discussion of assignment** - "Who would like to read their contract?" The experimenter listed to several contracts and discussed. The experimenter also pointed out errors and congratulated parents on good contracts; discussed potential failure of contracts and explained why contracts fail.

"Who would like to share their behavior graph by drawing it on the chalkboard?" The experimenter gave assistance to the parent presenting the graph. The experimenter also re-showed overlays on graphs illustrating stable, increasing and decreasing behaviors; discussed problems with graphing.

**Assignment** - "Continue observation and graphing. Look for behavior trends as indicated by the graphed data points. If stable baselines are indicated, initiate the contract with your child and bring a copy of the contract to the next meeting."

**Distribute Chapters VI and VII**

**Adjourn meeting** - The experimenter scheduled the time and date for the next session, and re-emphasized the importance of concealed observations.
OUTLINE OF SESSION #5

INTRODUCTION
ADMINISTER UNIT QUIZ
DISCUSSION OF PREVIOUS ASSIGNMENT
ASSIGNMENT
DISTRIBUTE CHAPTERS VIII AND IX OF SIGN HERE
ADJOURNMENT
Session #5

**Introduction** - Greet parents.

**Administer unit quiz** - "I would like for you to answer as many of the questions as possible. It will help me and you determine whether a review is needed. It will also tell us whether some of the concepts need further clarification."

**Discussion of assignment** - "I would like to examine your graphs along with your observational data. I am especially interested in finding out whether you are ready to implement your contracts. Those of you who have not yet implemented contracts will need to prepare one copy of your final contract." The experimenter xeroxed three copies of the parents' contract for his files to:

1. keep him informed of each group member's target behavior and the method of decreasing behavior or establishing new behavior;
2. eliminate procrastination on the part of parents; i.e., I lost my contract or I don't remember what was stated in the contract;
3. follow-up (review and orientation on what to look for when follow-up is done).

One copy of the contract was used for the child and served the following purposes:

1. positive reinforcement for the child to change his or her behavior;
2. visual cue - reminder of what is expected;
3. reminder of what is expected of the parent; and
4. self-charting - if contract terms involve days, the child can mark them off on the calendar. This will serve as a positive reinforcer and the child will have visual proof as well as verbal reinforcement from parents.

The parents' copy of the contract served the following purposes:

1. positive reinforcement for having successfully negotiated and reached a mutual agreement as to what is to take place;
2. reinforcement and assurance in knowing that the parents have a definite and consistent way of dealing with their child's behavior;
3. reminder of what is expected of parents and child;
4. reminder of the target behavior;
5. eliminate procrastination on the part of the child; i.e., I don't remember or I lost my copy; and
6. eliminate confusion as to parents' expectations and their child's.

Assignment - "Continue to graph data."
Distribute Chapters VIII and IX

Adjourn meeting - The experimenter scheduled the time and date for the next meeting.
OUTLINE OF SESSION #6

INTRODUCTION
ADMINISTER UNIT QUIZ
DISCUSSION OF PREVIOUS ASSIGNMENT
ASSIGNMENT
ADJOURNMENT
Session #6

**Introduction** - Greet parents

**Administer unit quiz**

**Discussion of assignment** - The experimenter reviewed graphs, answered questions or discussed problems, and reviewed contracts. The experimenter gave individual and group feedback. "Who would like to share their graph and contract with the group for discussion? Can you point out some things that Mr. or Mrs. (parent's graph and contract being discussed) could do to improve on the contract? How did you arrive at your contract? What is right or wrong with the graph? What should he or she have done?"

**Assignment** - "Bring your graphed data and a copy of your final contract to the next meeting."

**Adjourn meeting** - The experimenter scheduled the time and date for the next session.
OUTLINE OF SESSION #7

INTRODUCTION
DISCUSSION OF PREVIOUS ASSIGNMENT
ADMINISTER POST-TEST
FOLLOW-UP
DISTRIBUTE CERTIFICATES
WRAP-UP AND ADJOURNMENT
Session #7

Introduction - Greet parents.

Discussion of assignment - "I would like for you to pass in your graphs and one copy of your final contract if you have not already done so." Briefly, reviewed concepts presented in previous sessions and solicited group participation.

Administer post-test - "During our first parent group session, you were given a test to determine your overall knowledge of contracting before reading Sign Here. I will now give you the same test to determine if you acquired contracting skills and knowledge of the contracting concepts."

Follow-up - The experimenter explained to the parents that a follow-up questionnaire would be sent to them within two weeks and that it would be helpful if they would complete and return. The purpose of the follow-up would be to determine:

1. If parents retained the concepts of Sign Here (contingency contracting);
2. If parents continued to initiate and implement contracts with their child;
3. If this method of handling family problems had carried over to other members and areas of the family's daily living pattern.
(generalization);
4. if the parents felt that contracting was a valuable part of family living; and
5. if the parents retained behavior principles taught in the family group sessions.

**Wrap-up and adjourn meeting** - Experimenter thanked parents for participating in the study. Certificates of gratitude were issued to the parents.
APPENDIX B

OPERATIONAL DEFINITION OF TERMS
OPERATIONAL DEFINITION OF TERMS

The following operational definitions of terms were used in this study:

1. Positive Reinforcer: any stimulus immediately following a reinforcer that increases future probability of occurrence of that response under similar stimulus conditions.

2. Reinforcement: the delivery of the reinforcing event.

3. Contingency: a sequential relationship between two events; if one event occurs, the other will follow.

4. Contingency Contracting: a written agreement specifying the criterion, terminal behavior, and reinforcer(s) that have previously been agreed upon by contract initiators.

5. Target Behavior: That behavior which has been singled out to be reinforced, decreased or established.
APPENDIX C

LETTER FROM DIRECTOR OF NEIGHBORHOOD HOUSE
Mr. Norman,

As a result of our conversation, Wednesday, February 11, 1976, at the Neighborhood House, regarding your proposal to teach parents in our community how to engage in contract behavior techniques with their children, I am happy to announce that the Neighborhood House has chosen to participate in your study.

Verbally, we agreed upon a starting date during the month of March, 1976. Please forward in the very near future, your work program (dates, days of the week, times, etc.) so that we may gear up and gather the necessary data pertinent to the study.

In addition to myself, Mrs. Shirley Lymon, our Social Worker, will be the second most key person working with you. I would like to suggest the three of us meet during the quarter break so that we may tentatively plan and define each of our roles.

During the time of your stay at Neighborhood House, we will consider you as part of our staff and will be supportive of your efforts.

We are looking forward to working with you.

Sincerely yours,

[Handwritten Signature]

Lela M. Boykin, Director,
Neighborhood House Tutorial Program

IMB:pls

Figure 1

940 Caldwell Place, Apt. 5 / Columbus, Ohio 43203 / Telephone 252-7278
Study Questions

Answer the following questions after you have read the chapters:

Chapters I and II

1. What did Jeffrey want to do?

What were the results of Jeffrey's and his friend's behavior?

2. What did Jeffrey's father want to do?

3. When Jeffrey's mother came home, what did he and Pamela do?

What did his mother do?

What had Jeffrey forgotten to do involving the dog?

What other chores had Jeffrey neglected?

4. What was Jeffrey's sister Lynn doing?
Study Questions

Answer the following questions after you have read the chapter:

Chapter III

1. What did Pamela do that the family did not like?

2. What did the Galen family have after dinner?

3. What did Lynn suggest that the family do?

4. Lynn felt that no matter what she did, she was still unable to do some of the things she wanted to do. Why?
Study Questions

Answer the following questions after you have read the chapters:

Chapters IV and V

1. Lynn's contract:
   What was Lynn to do?
   What would she receive in return?

2. Jeffrey's contract:
   What was Jeffrey to do?
   What would he receive in return?

3. Pamela's contract:
   What was Pamela to do?
   What would she receive in return?

4. What is a contract?
   Who can initiate a contract?
Study Questions

Answer the following questions after you have read the chapters:

**Chapters VI and VII**

1. What goes into a contract?

2. Why do contracts fail?

3. What was Mr. Galen's contract?

4. What was Mrs. Galen's contract?
Study Questions

Answer the following questions after you have read the chapters:

Chapters VIII and IX

1. What was Jeffrey's contract about arithmetic problems and his report card?

2. What was Jeffrey's surprise?

3. What is stated in a contract?

4. Write a contract.
APPENDIX E

CONTRACT
CONTRACT

TASK

Who: ____________________________
What: ____________________________
When: ____________________________
How Well: ________________________

REWARD

Who: ____________________________
What: ____________________________
When: ____________________________
How Much: ______________________

Sign Here: ________________________ Date: ____________

Sign Here: ________________________ Date: ____________

TASK RECORD
APPENDIX F

TRANSPARENCIES
EXAMPLE OF EVENT RECORDING AND
AN ASCENDING BASELINE

Figure 15

Number of Occurrences in One Half Hour

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
EXAMPLE OF EVENT RECORDING AND A DESCENDING BASELINE

Figure 16

Number of Occurrences in One Half Hour

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

0 1 2 3 4 5 6 7 8 9 10
EXAMPLE OF EVENT RECORDING AND
A STABLE BASELINE

Figure 17
Number of Occurrences in One Half Hour

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
APPENDIX G

PARENT INFORMATION FORMS
I (we) consent to serve as participant(s) in a Parent Group Study conducted by James E. Norman at the Neighborhood House, 940 Caldwell Place, Apt. 5, Columbus, Ohio.

The nature and general purpose of the Parent Group Study have been explained to me by James E. Norman. I understand that my participation and any written material resulting from the Parent Group meetings will be treated confidentially.

Signed_________________________

Signed_________________________

Date_________________________
Parent Information Form

Date: ______________________

Parent or Guardian: ______________________________

Address: ______________________________________

Telephone No.: ________________(home) __________ (work)

Occupation:

   Father: ______________________________
   Mother: _____________________________

Number of Children in Family:

   Male: __________
   Female: _________

Age of Child or Children: ________________

Grade in School: ________________
Contingency Contract Rating Form

Parent's Name: ____________________  Evaluator: __________

Date contract written: ______  Date of Evaluation: ______

Essential Elements

For task, does contract state:

1. Who will perform task  Yes__No__
2. What the task will be  Yes__No__
3. When the task will be performed  Yes__No__
4. How well the task will be performed (Behaviorally stated)  Yes__No__

For reward, does contract state:

1. Who will dispense reward  Yes__No__
2. What the reward will be  Yes__No__
3. When the reward will be received  Yes__No__
4. How much (Specific amount of reward)  Yes__No__

Others:

1. Terms of contract are fair and stated positively  Yes__No__
2. Contract requires accomplishment  Yes__No__
Parent Information Form

(Child whose behavior you wish to change)

Date: __________________

Name: _____________________________________

Age: _______________

Address:____________________________________

Grade In School: ___________ (or highest grade completed)

Parent or Guardian: ____________________________

Address (if different from child's): ________________________

Please list and describe, as accurately as possible, the behavior(s) you would like to see changed in your child. Try not to use words or terms as "he is lazy." (Example-- I had to scream at Jimmy five times in a 15-minute period of time before he did what he was asked to do. I would like to reduce the number of times I have to call him before he responds.)

How often does the child engage in the behavior(s) listed?

   Very often -- once every 1 or 2 minutes
   Often -- once every 5 minutes
   Seldom -- once a day

What is your best method presently used for changing the behavior(s) listed? (Example: spanking, sending child to room, waiting until father returns home.)
APPENDIX H

PRE-TEST/POST-TEST
Pre-Test/Post-Test
(circle one)

Part B

Date: ______________________

Name: ______________________

Place a check beside the correct answer.

1. Which of these would be an example of a positive contingency contract?

   ___(a) If you perform a task which is desirable to me, I will in turn provide something which is desirable to you.

   ___(b) If you want to avoid punishment, you must perform this task.

   ___(c) Both of the above

   ___(d) Neither of the above

2. Positive contingency contracts are:

   ___(a) Rarely used in business

   ___(b) Rarely used in daily family situations

   ___(c) Both of the above

   ___(d) Neither of the above

3. In daily life, positive contingency contracts are most frequently used in:

   ___(a) Business relations

   ___(b) Friendship

   ___(c) Criminal law

   ___(d) All of the above

   ___(e) None of the above
Part B (page 2)

4. "To avoid punishment, do as I tell You", is an example of:

   ___(a) A positive contingency contract
   ___(b) A negative contingency contract
   ___(c) Both of the above
   ___(d) Neither of the above

5. Contingencies have been used to get children to do what you want them to do. Is this:

   ___(a) Positive contingency
   ___(b) Negative contingency
   ___(c) Both of the above
   ___(d) Neither of the above

6. Making an agreement with someone in which an outcome is made dependent upon performance is called:

   ___(a) Bribery
   ___(b) Reward
   ___(c) Contingency contracting
   ___(d) All of the above
   ___(e) None of the above

7. To be worthwhile in a contingency contract, the reward offered must be:

   ___(a) Highly desirable
   ___(b) Not obtainable outside the contingency of the contract
   ___(c) Both of the above
   ___(d) Neither of the above
8. The reward in the contract must:

   ___(a) Increase the probability that the rewarded activity will recur

   ___(b) Maintain a high probability of the rewarded activity

   ___(c) Decrease the probability of the rewarded activity

   ___(d) All of the above

   ___(e) None of the above

9. Contingency contracting can be:

   ___(a) Positive

   ___(b) Negative

   ___(c) Both of the above

   ___(d) Neither of the above
APPENDIX I

FOLLOW-UP TEST
Follow-Up Survey

Date: __________________________

Dear, ___________________________________

Again, I extend my appreciation to you for participating in the parent group study. In order to assist in the final evaluation of the effectiveness of the study, please answer the questions below and return in the enclosed, stamped, self-addressed envelope.

Thank you,

James E. Norman

1. Do you feel that you handle behavior problems of your child better after having participated in the parent group study? Yes        No

2. Are you presently using contingency contracting in dealing with your child's behavior problems? Yes        No

3. Do you feel that your participation in the parent group study has been beneficial to you and your family? Yes        No

4. Would you participate in another similar study? Yes        No

5. Which of the following is an example of a positive contingency contract?

   _ If you perform a task which is desirable to me, I will in turn provide something which is desirable to you.

   _ If you want to avoid punishment, you must perform this task.

   _ Both of the above

   _ Neither of the above
6. Positive contingency contracts are:
   ___ Rarely used in business
   ___ Rarely used in daily family situations
   ___ Both of the above
   ___ Neither of the above

7. Contingencies have been used to get children to do what you want them to do. Is this:
   ___ Positive contingency
   ___ Negative contingency
   ___ Both of the above
   ___ Neither of the above

8. To be worthwhile in a contingency contract, the reward offered must be:
   ___ Highly desirable
   ___ Not obtainable outside the contingency of the contract
   ___ Both of the above
   ___ Neither of the above

9. The reward in the contract must:
   ___ Increase the probability that the rewarded activity will recur
   ___ Maintain a high probability of the rewarded activity
   ___ Decrease the probability of the rewarded activity
   ___ All of the above
   ___ None of the above
10. Contingency contracting can be:
   ___ Positive
   ___ Negative
   ___ Both of the above
   ___ Neither of the above
APPENDIX J

UNIT QUIZ
Unit Quiz

Place a check mark beside the correct answer or fill in the missing word.

1. What did Jeffrey want to do?
   
   ___ Jeffrey and his friend wanted to fly his plane
   ___ Stay home from school
   ___ Quit school and play with his plane
   ___ All of the above
   ___ None of the above

2. Mr. Galen wanted to _______ before going to work.

3. What had Jeffrey forgotten to do?

4. What did the Galen family have after dinner?

5. Contingencies have been used to get children to do what parents expected of them. Is this:
   
   ___ Positive contingency
   ___ Negative contingency
   ___ Both of the above
   ___ Neither of the above

6. An unrewarding experience can be referred to as a:
   
   ___ Positive reinforcer
   ___ Bad experience
   ___ Both of the above
   ___ Neither of the above
Unit Quiz

Place a check mark beside the correct answer or fill in the missing word.

1. To be worthwhile, the reward in a contingency contract must be money.
   ___ True
   ___ False

2. How did the Galen's solve their family problems?
   ___ Sent the children to bed
   ___ Spanked them
   ___ Made contracts
   ___ All of the above
   ___ None of the above

3. What is a tally?

4. When you observe your child, you ____________________.

5. Making an agreement with someone in which an outcome is made dependent upon performance is called ____________

6. A contingency contract can be positive.
   ___ True
   ___ False
Unit Quiz

Place a check mark beside the correct answer or fill in the missing word.

1. The reinforcer in a contingency contract must be ____________________.

2. A good contract is one in which only the parents decide upon what is to be reinforced.
   ___ True
   ___ False

3. Positive reinforcement is best described as ________.  

4. Contingency contracting is different from bribery in that it ____________________.

5. If you do not clean up your room, I am going to spank you. This is an example of ____________________.

6. How would you solve the problem stated in #5?
Unit Quiz

Name: __________________   Date: ________________

Place a check mark beside the correct answer and define the words.

1. I would like to decrease the amount of time my son spends on the telephone. This is an example of

   __  Hate
   __  Love
   __  Target behavior
   __  All of the above
   __  None of the above

2. Definitions:

   (a) Behavior

   (b) Contingency contracting

   (c) Reinforcement

   (d) Target behavior

   (e) Contract
Define the following terms:

1. Target behavior:

2. Reinforcement:

3. Behavior:

4. Contract:

5. Positive reinforcement:

6. Contingency:

7. Contingency contracting:
Unit Quiz
(Page 3)

Date: _______________

Name: ____________________________

Place a check beside the correct answer.

1. Which of these would be an example of a positive contingency contract?

   ____ (a) If you perform a task which is desirable to me, I will in turn provide something which is desirable to you.

   ____ (b) If you want to avoid punishment, you must perform this task.

   ____ (c) Both of the above

   ____ (d) Neither of the above

2. Positive contingency contracts are:

   ____ (a) Rarely used in business

   ____ (b) Rarely used in daily family situations

   ____ (c) Both of the above

   ____ (d) Neither of the above
3. In daily life, positive contingency contracts are most frequently used in:
   ___(a) Business relations
   ___(b) Friendship
   ___(c) Criminal law
   ___(d) All of the above
   ___(e) None of the above

4. "To avoid punishment, do as I tell you", is an example of:
   ___(a) A positive contingency contract
   ___(b) A negative contingency contract
   ___(c) Both of the above
   ___(d) Neither of the above

5. Contingencies have been used to get children to do what you want them to do. Is this:
   ___(a) Positive contingency
   ___(b) Negative contingency
   ___(c) Both of the above
   ___(d) Neither of the above

6. Making an agreement with someone in which an outcome is made dependent upon performance is called:
   ___(a) Bribery
   ___(b) Reward
   ___(c) Contingency contracting
   ___(d) All of the above
   ___(e) None of the above
Unit Quiz (Page 5)

7. To be worthwhile in a contingency contract, the reward offered must be:

   ____ (a) Highly desirable
   ____ (b) Not obtainable outside the contingency of the contract
   ____ (c) Both of the above
   ____ (d) Neither of the above

8. The reward in the contract must:

   ____ (a) Increase the probability that the rewarded activity will recur
   ____ (b) Maintain a high probability of the rewarded activity
   ____ (c) Decrease the probability of the rewarded activity
   ____ (d) All of the above
   ____ (e) None of the above

9. Contingency contracting can be:

   ____ (a) Positive
   ____ (b) Negative
   ____ (c) Both of the above
   ____ (d) Neither of the above