AN ANALYSIS OF MULTIPLE MISPLACED PARENTAL SOCIAL CONTINGENCIES¹

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This study analyzed the training of a mother to modify five subclasses of her attention to her young child's noncompliance with instructions, and also displayed the changes in her child's behavior correlated with these events. Training in four subclasses consisted of teaching the mother to withhold various forms of social attention to her daughter's undesired behavior; training in the fifth subclass involved introduction of a brief room-timeout procedure for noncompliance. The effectiveness of the parent-training procedure, consisting of initial instructions and daily feedback, was demonstrated through a multiple-baseline design across the five subclasses of parent behavior. Sequential decreases in the first three subclasses of the mother's social attention to undesired child behavior resulted in incomplete improvements in some child responses; however, a decrease in the fourth subclass resulted in a significant increase in undesired child behavior. Complete remediation of all child behaviors was achieved following the training of a timeout procedure for noncompliance. Postchecks conducted up to 16 weeks later showed that these effects were durable.

DESCRIPTORS: differential attention, noncompliance, disruptive behavior, parent training, feedback, attention subclasses, multiple baseline, parents as therapists, children

Because of the great amount of time children spend with their parents in the first few years of life, parents are obvious candidates for training in behavior-modification procedures. The formal investigation of parents as behavior therapists began in 1959 with the work of Williams, who trained parents to modify a child's bedtime tantrums; since then, numerous other studies have employed parents as the primary treatment agents for their children's behavior problems, with considerable success (see re-

views of the behavioral parent-training literature by Berkowitz and Graziano, 1972; Johnson and Katz, 1973; O'Dell, 1974; Johnson, Note 1).

Various child-treatment procedures have been taught in parent-training programs. Most frequently, parents have been trained to apply differential social consequences to specific child responses, either as the only form of treatment or in combination with other treatment procedures. Differential social attention alone has often been successful in remediating child problems (*e.g.*, Herbert and Baer, 1972; Knight and McKenzie, 1974; Pinkston and Herbert, Note 2). However, a possibly serious problem for this approach was presented by two recent studies that found an unpredicted, undesirable effect. Herbert, Pinkston, Hayden, Sajwaj, Pinkston, Cordua, and Jackson (1973) trained six parents in a laboratory to attend to desired child behaviors and remove attention following undesired child behaviors. Although each of the parents applied the differential attention procedure, this form of treatment was not only insufficient to decrease

¹This research was based on a doctoral dissertation submitted by the senior author to the Department of Human Development, University of Kansas. It was supported in part by PHS Training Grant HD-00183 from the National Institute of Child Health and MH-20410 from the National Institute of Mental Health, both to the University of Kansas, and by Project 405 from Maternal and Child Health Services to the University of Nebraska Medical Center. Thanks are expressed to Arlene Moore and Gretchen Finkenbinder for their conscientious and enthusiastic services as observers, and to James Sherman for his suggestions on the manuscript. Reprints may be obtained from Karen Budd, Meyer Children's Rehabilitation Institute, 444 South 44th Street, Omaha, Nebraska 68131.

the children's deviant responses, but in fact resulted in increased deviant behavior by four of the six children. Wahler (1969) found a similar anomaly.

These studies illustrated the unpredicted effect of differential social-attention procedures but provided no explanation for it. However, in both studies, parental social attention to undesired child behavior was recorded as a single response class, and parents were trained to withhold all forms of social attention following undesired child responses. The present experiment investigated the effects of differential attention in greater detail by training a mother sequentially to modify five subclasses of her attention to her child's noncompliance. The effects to these changes on three child behaviors were examined: compliance, speed of compliance, and inappropriate responses.

Observation of the interactions between the mother and daughter of this study showed consistent noncompliance by the child, despite the fact that compliance was well within her competence. This noncompliance with instructions seemed possibly related to at least five aspects of the mother's behavior: (a) excessive repetition of instructions; (b) delivery of instructions contingent on inappropriate child behavior; (c) physical intervention to effect compliance, as well as praise following the physical intervention; (d) tangents (additional attention while an instruction was still pending); and (e) failure to use any form of timeout procedure for noncompliance. A response analysis was conducted of these five presumed errors. (A sixth parent behavior, praise for correct child responses, was not targeted for training, because the mother provided praise for 98% of the child's correct compliance throughout the study.)

Thus, the primary purpose of this experiment was to analyze and remediate the parent's numerous misplaced social contingencies, and thereby to modify the child's problem behaviors. This study also examined the effectiveness of a parent-training package consisting of initial instructions in the use of specific treatment techniques,

coupled with daily verbal feedback about the mother's performance. The durability of the effects was assessed by postcheck sessions.

METHOD

Subjects

The subjects were a 3-yr-old girl, Andrea, and her mother. Andrea attended a special classroom in a university preschool. She tested well below her age level on various standardized inventories of development and showed delayed language acquisition. Her mother and teachers expressed particular concern about Andrea's noncompliance with instructions and her considerable demand for attention. Andrea's parents were high-school graduates in their early twenties, with no prior training in the use of behavioral techniques. Only the mother participated in the study.

Setting and Activities

Experimental sessions were conducted in a laboratory room five days each week, one session per day. A small adjoining bathroom was used as a timeout booth. The experimental room measured 3.1 m by 4.0 m and was furnished with chairs for the mother and child and a table that held a plastic tub of stimulus objects. The room also contained four other objects used as locales in the mother's instructions to the child. These locales were drawn daily from a pool of eight: pail, chair, paper, tub, box, stool, glass, and sack. The four locales used on any day were arranged about 47 cm apart in a row on the floor.

During each session, the mother delivered a set of 16 different instructions to the child, each instruction requesting the child to place a particular stimulus object in a specified location—for example, "Put the comb on the chair" or, "Put the ball in the pail". (Previous observations of the child had established that she understood these instructions, because she occasionally responded quickly and correctly to them.) As the mother delivered each instruction, she handed

the child the correct stimulus object for that trial. The instructions were delivered according to written lists prepared by the experimenter and given to the mother at the beginning of each session. For each day's list, four instructions were drafted for each of the four randomly chosen locales, totalling 16 instructions. One stimulus object was chosen for each instruction from a pool of approximately 50 stimulus objects.

Session length ranged from 5 to 25 min, depending primarily on the latency of the child's responses to her mother's instructions. Sessions began when the mother delivered the first instruction, and continued until the child completed the final instruction or until 25 min elapsed, whichever came first. Of the 106 sessions, only five were terminated before all the trials had been completed; these sessions are identified in the Results section.

Observation Procedures and Behavioral Definitions

An observer recorded the occurrence of parent and child behaviors in continuous 10-sec intervals. Descriptions of the five target parent behaviors are provided below.²

Repetition of instructions: any restatement of part or all of an initial instruction for a trial using the same or synonymous words.

Initial instruction contingent on inappropriate child behavior: the first delivery of a specified instruction (from the written instruction list) was recorded as an initial instruction. A special recording symbol was used to denote instances when the initial instruction was delivered contingent on inappropriate child behavior. To be considered as contingent, an instruction had to occur during or after inappropriate behavior and within the same 10-sec interval as the inappropriate behavior.

Physical intervention to effect compliance with an instruction: physical contact with the

child or the correct stimulus object, simultaneous with the child's placement of the object in the correct locale, including physically guiding the child through the response, holding the child while she completed the response, or touching the child with the palm(s) while the child completed the response.

Praise following physical intervention to effect compliance: positive verbal statements or physical movements indicating approval (such as hugging, patting, kissing, or clapping for the child) that occurred immediately after physical intervention to effect compliance. (Praise was recorded by a separate symbol when it followed a response completed correctly by the child without physical intervention.)

Tangents: all verbal or physical behavior directed toward the child except initial instructions, repetitions, praise, or use of a timeout procedure. Examples of tangents include providing extra information regarding the task, requests for verbalizations or attending, irrelevant verbal comments, touching the child with the palm(s), modelling part or all of the correct response, and pointing toward, touching, or moving the object representing the correct response locale. (Modelling, prompts, and verbal help were included as tangents because initial observations had shown that the child was able to comply with the instructions independently.)

Use of timeout: movement of the child to the small room adjoining the experimental room and providing no attention to her for a 2-min period.

In addition to the behaviors described above, the observers recorded instances in which the mother's repeats, tangents, and/or praise occurred contingent on the child's inappropriate behavior. The child's behaviors that were recorded are described below.

Inappropriate behavior: responses directed away from compliance with the mother's instructions, including putting stimulus objects in the mouth, moving or manipulating objects other than the specified stimulus objects for the trial,

²A more detailed description of the observational definitions and recording rules may be obtained from the senior author.

moving to a corner of the room away from the immediate instructional-task area, sitting or lying on the floor, crawling on the table, or touching down the stimulus object in an incorrect locale but not releasing both hands from the object.

Correct response: placement of the correct stimulus object for a trial in (or on) the correct response locale and release of both hands from the object, excluding occasions when the mother physically intervened to effect compliance.

Behaviors were recorded, interval by interval, across successive instructional trials, except that recording was suspended during intervals of timeout. By definition, an instructional trial began in the interval in which the mother delivered the initial instruction for a trial, and it ended in the interval in which one of the following events occurred: the child correctly complied with the instruction, the mother physically intervened to effect compliance, or the mother terminated the trial by returning the stimulus object to the tub and/or by getting out a new stimulus object for the next trial. (Whichever of the above events occurred first signalled the final interval of a trial.) Based on the observational data collected during the sessions, two additional measures were computed:

Mother's perfect trials: a summary measure of the mother's performance of all the desired terminal behaviors for a trial. To be considered perfect in her trial required that the mother gave the initial instruction only once (or twice, if timeout were used) not contingent on inappropriate behavior, waited for the child to complete the response correctly rather than physically intervening to effect compliance, provided no tangents, implemented the room-timeout procedure when a trial continued longer than two 10-sec intervals after the instruction, and provided praise following a correct response.

Trial duration: the number of continuous 10-sec intervals within an individual trial, including the interval in which the instruction was given.

Reliability Procedures

Interobserver agreement was assessed for each behavior category by comparing the independent records of two observers who simultaneously recorded the behaviors. Reliability checks were made during 45% of the total sessions (48 of 106 sessions) with a minimum of three checks per experimental condition. Interobserver agreement was calculated for the occurrence of each behavior within each 10-sec interval by dividing the number of occurrence agreements by the total number of intervals in which either or both observers recorded the behavior. In addition, nonoccurrence agreement was calculated for the mother's repeats and tangents, and for inappropriate child behavior, by dividing the number of nonoccurrence agreements by the total number of intervals in which neither or only one observer recorded the behavior. Nonoccurrence reliabilities were assessed for those behaviors that, during some periods of the study, were of such high rate that occurrence reliability measures would have been of little use (Bijou, Peterson, and Ault, 1968).

Procedures

Because of the large number of sessions in this study, the data are summarized into session blocks. Most blocks are composed of data from four experimental sessions, although six (Blocks 6, 11, 15, 21, 27, and 28) that occurred at the beginning or end of an experimental condition contain only three sessions each.

Baseline: Session Blocks 1 to 6. At the outset of the study, the experimenter explained to the mother that, during the first several sessions, the experimenter and an observer would assess existing parent-child interactions and develop a system for recording some features of these interactions. The mother was asked to deliver a set of 16 different instructions to her child according to a written instructional list, and to use whatever means she would normally employ to secure Andrea's compliance with her instructions; no specific suggestions were made.

Training on repetition of instructions: Session Blocks 7 to 11. Immediately before the first session in this condition, the experimenter provided the mother with a written and verbal explanation of the first phase of proposed child-treatment procedures. This explanation (and those for successive phases of treatment) included instructions for implementing the treatment procedure, a brief rationale, and a description of the feedback the mother would receive on her performance. Specifically, the mother was asked to reduce her repetitions of instructions to a zero rate by giving each of the 16 instructions to her child only once. The experimenter suggested that repeating instructions several times could teach the child not to attend systematically to instructions the first time they were given. The experimenter let the mother know how she was doing each day by telling her after each session how many times the observer recorded a repeat during successive 10-sec interval time blocks. Typically, this feedback was a brief, positive statement such as, "We recorded only two repeats today. That's great". On some occasions, the experimenter also described the specific repeat(s).

Training on initial instructions contingent on inappropriate child behavior: Session Blocks 12 to 14. Immediately before the first session of this condition, the experimenter provided a written and verbal explanation of the second phase of the child-treatment procedures. Specifically, the mother was asked to wait 5 sec after inappropriate behavior had stopped before providing the initial instruction for a trial. It was suggested that instructions given while a child is inappropriate are often wasted because the child is distracted; also, the instruction may strengthen the inappropriate behavior by providing attention systematically for being inappropriate. The experimenter provided several examples of inappropriate behavior, and suggested that the mother have Andrea stand or sit beside her between trials to decrease the likelihood of inappropriate behavior before instructions. In this and later conditions, the experimenter asked

the mother to continue the treatment procedure(s) initiated in the earlier phase(s) of the study, and explained that the mother would receive feedback on her performance of each treatment procedure: thus, in the present condition, the mother was told both how many initial instructions were recorded as contingent on inappropriate behavior and how many intervals of repeats were recorded. As in all conditions, the daily feedback to the mother was usually a brief positive statement; sometimes, the specific circumstances of the mother's behavior were described, for example: "When you gave Andrea the instruction to put the doll on the paper, she had the doll in her mouth."

Training on physical interventions to effect compliance and praise following physical interventions: Session Blocks 15 to 21. In this condition, the mother was asked to reduce her physical interventions to effect compliance with the 16 instructions. It was explained that physical intervention was recorded whenever the mother touched Andrea or the stimulus object while Andrea placed the object in the correct locale. The mother was asked to wait at least 1 min for Andrea to complete a response by herself before assisting her to complete the response. It was suggested that this treatment might be helpful in teaching Andrea to complete responses independently. In giving feedback on physical interventions, the experimenter reported the number of interventions recorded and occasionally described the nature of the interventions. Also, the experimenter often told the mother how many intervals she waited after delivering the instruction before physically intervening. If the mother waited fewer than six 10-sec intervals, the experimenter requested that she try to wait a little longer in the future; the experimenter provided positive feedback when the mother waited six intervals or more.

After three sessions (comprising Session Block 15), an additional aspect of treatment was introduced through written and verbal explanations. The mother was asked to continue her usual praise for independent correct responses, but

was now asked to withhold praise on those trials when she eventually had to intervene physically to effect compliance. The experimenter let the mother know after each session how many times she provided praise for responses when she had to intervene physically.

Training on tangents: Session Blocks 22 to 23. In this condition, the mother was asked to reduce her tangents by providing attention to Andrea only to give an initial instruction, and then to offer praise when Andrea correctly complied with the instruction. It was suggested that this procedure might be helpful in teaching Andrea to respond completely on her own to her mother's instructions. To help the mother avoid attending during trials, the experimenter suggested that she remain seated, keep her hands in her lap or cross her arms, keep her head slightly bowed, and ignore all of Andrea's inappropriate and incorrect responses. When Andrea correctly completed a response, however, the mother was asked to provide her usual warm praise. The mother received daily feedback on the number of 10-sec intervals in which a tangent occurred.

Training on use of timeout for long trials: Session Blocks 24 to 27. After the final session in the preceding condition, the experimenter conferred informally with the mother about the nature of treatment procedures to be implemented in the next condition. The experimenter verbally presented two alternatives—delivery of a tangible reward contingent on correct responses, or use of a room-timeout procedure for long trials. The mother asked to apply the alternative the experimenter predicted would be more effective. The room-timeout procedure was chosen, and this procedure was introduced, in written and verbal forms, on the following day.

In this condition, the mother was asked to wait 15 sec after delivering an initial instruction, to allow Andrea to comply with the instruction. If Andrea had not correctly completed the response by the end of the 15-sec period, the mother was asked to move her quickly and

firmly to the timeout room for a 2-min period. While moving Andrea to the timeout room, the mother was asked to tell Andrea only that she could not stay in the room with her mother if she did not do what her mother asked her to do. (At the onset of each timeout, she was given a stopwatch to time the 2-min period.) After the timeout period, the mother was asked to return Andrea to the instructional-task area and repeat the instruction once for the ongoing trial. Again, timeout was to be implemented if Andrea failed to complete the instruction within 15 sec. The experimenter told the mother after each session how many times she failed to apply timeout by the second 10-sec interval after the instruction. (The two-interval criterion represented the most accurate measurement possible in the interval recording system of the 15-sec wait requested of the mother; this interval criterion actually allowed the mother at least 20 but not more than 30 sec to implement the timeout procedure.)

Postchecks: Session Block 28. Three post-check sessions were conducted, 2, 10, and 16 weeks after termination of daily sessions. The mother was given no instructions or explanations of treatment procedures before sessions; however, she received feedback after each session on her use of all the treatment procedures, as she had during the preceding daily sessions.

RESULTS

The ranges and means of the observation reliabilities for the behaviors of interest are displayed in Table 1. For each behavior, the average percentage of agreement across the entire study was 87% or above. No range is given for the one behavior for which identical percentages of agreement were obtained throughout all conditions.

Figure 1, which presents the five target parent behaviors in the order in which training was applied to them, shows that the parent-training package, consisting of initial instructions and daily feedback, was effective in teaching the

Table 1
Reliability Percentages

<i>Behavior</i>	<i>Range of Mean Reliabilities within Experimental Conditions</i>	<i>Mean Reliability across All Conditions</i>
<i>Occurrence Reliabilities</i>		
Repetitions of instructions	71 to 100	87
Initial instructions contingent on inappropriate behavior	57 to 100	92
Initial instructions not contingent on inappropriate behavior	86 to 100	96
Physical interventions to effect compliance	85 to 97	92
Praise after physical interventions to effect compliance	83 to 93	90
Tangents	77 to 93	88
Use of timeout	—	100
Praise for correct responses	86 to 100	94
Inappropriate behavior	80 to 95	91
Correct responses	89 to 100	95
Incorrect responses	88 to 100	95
<i>Nonoccurrence Reliabilities</i>		
Repetitions of instructions	76 to 100	97
Tangents	63 to 98	92
Inappropriate behavior	79 to 95	89

mother to modify her behavior toward her daughter. The top graph illustrates the dramatic reduction in the mother's *repetitions of instructions* following training, from a mean baseline rate of 73% of the 10-sec intervals to a mean posttraining level of only 1% of the intervals. The second graph shows that the mother's *initial instructions contingent on inappropriate behavior* declined from an average initial rate of 69% of the trials to a mean of 39% after parent training on repeats (concomitant with a substantial reduction in the rate of inappropriate child behavior); however, a more thorough decrease in the level of instructions contingent on inappropriate behavior, to an average of only 4% of the trials, occurred following direct training on this behavior.

The middle graph shows the average delay in 10-sec intervals before the mother *physically*

intervened to effect compliance with her instructions (the solid circles) and the proportion of *interventions followed by parental praise* (the open circles). During baseline, the mother intervened, on the average, in the second 10-sec interval after the initial instruction (*i.e.*, between 10 and 30 sec after the instruction was given). After parent training was introduced for this behavior, the mother delayed intervention, on the average, until the fifth interval (40 to 60 sec after delivering an instruction). Also, the mother's praise following physical interventions decreased from a baseline average of 98% of the trials in which intervention occurred to a mean of 15% after parent training, initiated at the point indicated by the arrow. The lack of data points for the final seven session blocks indicates that the mother did not intervene to effect compliance during any trials in these blocks.

Fig. 1. Levels of five parent behaviors across successive session blocks. Dotted vertical lines denote the introduction of parent-training procedures on target behaviors. The arrow in the middle graph indicates the point at which training was introduced to decrease the mother's praise following physical interventions. The lack of data points in the middle graph for the final seven session blocks indicates that the mother did not intervene to effect compliance during any trials in these blocks; likewise, the absence of a data point in the bottom graph for Session Block 27 indicates that no long trials occurred during that block. The stars denote data from post-check sessions.

The fourth graph, which presents the mother's *tangents* as a percentage of 10-sec intervals, shows that the rate of tangents declined to some extent during baseline with successive parent-training inputs for other behaviors; however, tangents exhibited a relatively stable level, averaging 44% for the last seven session blocks (composed of 26 sessions) of baseline. Even this reduced rate of tangents was substantially above the desired level. Application of parent training for this behavior reduced tangents to only 7% of the intervals for the remainder of the study. The bottom graph displays the mother's use of a *timeout* procedure for long trials, defined as trials lasting more than two 10-sec intervals after the initial instruction. After a baseline period in which timeout was never used, the mother responded to training in this behavior by applying timeout for five of eight, or 63%, of the long trials during the remaining daily sessions, and for the only long trial that occurred during the postcheck session block. The absence of a data point for Session Block 27 indicates that no long trials occurred during that block.

The top graph in Figure 2 presents the mother's perfect trials and the second graph presents the child's correct responses, both as percentages of total trials. These two graphs are similar, in that they display a progressively increasing pattern in the levels of desired mother and child behavior across successive parent-training inputs, culminating in near-perfect responding in the final stage of the study. By contrast, the child's inappropriate behavior, displayed in the third graph, exhibited an initial decrease in frequency (during the first two parent-training conditions), followed by a clear-cut resurgence in a later training condition to a level that exceeded even baseline rates of the behavior. Training in the use of a timeout procedure immediately decreased the rate of inappropriate behavior to a stable, near-zero level.

The bottom graph in Figure 2 shows the average duration of instructional trials, calculated as the mean number of 10-sec intervals

per trial, across session blocks. Trial duration maintained a highly uniform pattern across the first three conditions, increased slightly after the third parent-training input, then rose dramatically after the fourth training input: during the second session block in this condition, it averaged 22.4 intervals, which is equivalent to more than 3.5 min per trial. Due to the extended length of some trials in this condition, five of eight sessions were terminated at the maximum length of 25 min before all trials had been completed. After training was initiated on timeout, however, the length of trials dropped immediately to below baseline levels.

DISCUSSION

This study analyzed the training of a mother to modify five subclasses of her attention to her child's noncompliance with instructions, and also displayed the changes in her child's behavior correlated with these events. Experimental decreases in three subclasses of the mother's social attention to undesired child responses were associated with systematic but incomplete improvements in some desired child responses. Subsequent modification of a fourth subclass, consisting of all remaining misplaced social attention, improved the child's rate of correct compliance, but also resulted in a substantially increased rate of inappropriate child behavior, a considerably longer average trial duration, and a corresponding reduction in the mean number of completed trials. Complete remediation of all target child behaviors was achieved after training of a timeout procedure for noncompliance with instructions.

These results replicate those of Herbert *et al.* (1973) and Wahler (1969) in demonstrating the failure of differential social attention to increase appropriate behavior in the absence of punishment for inappropriate behavior. The present study extended the previous findings by examining the effects of sequential changes in isolated classes of parent attention on three classes of child behavior. The results provide

Fig. 2. Selected parent and child behaviors, as a function of training on parent behaviors, across session blocks. Dotted vertical lines represent the introduction of successive parent-training inputs as denoted by the labels above the graph. Stars indicate data from postcheck sessions.

additional information for evaluating the possible issues involved in the failure (at a crucial stage in the study) of the differential social-attention procedure.

Herbert *et al.* offered six possible explanations for this kind of unpredicted side effect of differential attention: (a) an extinction burst effect; (b) high resistance to extinction due to intermittent schedules of parental reinforcement; (c) stimulus control function of differential reinforcement for counter-control by the child, in the form of increased undesired behavior; (d) decreases in the overall density of parental attention caused by differential attention; (e) the possibility that punishing as well as reinforcing stimuli are contained within the total package called "parent attention"; and (f) the increased opportunity for inappropriate behavior by the child when the parent is restrained from continual intervention. Of these, it seems that three are now unlikely, given that in the present study the unpredicted increase in undesired child behavior did not occur until the fourth parent intervention. That is, an extinction burst, high resistance to extinction, and stimulus control by differential attention for counter-control, all should have been seen with the initial intervention(s). However, changes in the density of parent attention, which had been occurring since the first intervention, may by the fourth intervention have reached a critical low point. It is also possible that the fourth intervention, discontinuation of tangents (by now primarily physical), in fact stopped a parent technique that had a punishing function for much of the child's undesired behavior. Finally, it is possible that stopping such physical tangents by the parent simply allowed the child a great deal more time in which to be inappropriate. Thus, the design of the present study contributes to a somewhat less ambiguous interpretation of the occasional undesirable side effect of an otherwise useful and natural technique.

Two common characteristics among the small body of unsuccessful applications of differential

attention by parents (Herbert *et al.*, 1973; Wahler, 1969; the present study) together distinguish these studies from many other successful uses of differential attention. First, the mothers in these studies exhibited a propensity before training to follow virtually every child behavior with attention; thus, the use of differential attention consisted almost entirely of removing social attention following undesired child behavior, rather than increasing the rate of attention to desired responses or shifting attention from undesired to desired responses. Second, the categories of child behavior targeted for modification in each of these studies—deviant, oppositional, and inappropriate behavior—were broad response classes, rather than a single, discrete child response; thus, the differential attention technique was applied simultaneously to multiple, diverse undesired behaviors. If this commonality of characteristics is related to the experimental findings, it may provide a key to understanding the failure of differential social attention.

While the present findings still leave some unanswered questions regarding an explanation of the child-treatment effects, they provide strong evidence of an effective package for training parents to employ behavior-management techniques, in that initial instructions and daily feedback led to efficient and durable changes in each subclass of the mother's behavior. This study does not provide an analysis of the function of individual components of the parent-training package, nor does it indicate whether the mother could have been trained concurrently to modify multiple subclasses of her attention. Nevertheless, the total package offers an efficient alternative to other successful training packages employing verbal feedback (*e.g.*, Cooper, Thomson, and Baer, 1970; Wahler, 1969) by showing that feedback delivered only at the completion of daily sessions can be sufficient to modify a mother's behavior effectively.

The postcheck data provide encouraging evidence of the durability of parent-training and

child-treatment effects. These results are particularly meaningful, considering that the mother was given no instructions or reminders of the treatment procedures at the beginning of the postcheck sessions. Evidence of the use of the treatment techniques was limited to the experimental setting; however, the mother reported informally that she applied the techniques at home, also.

This research provides a basis for both optimism and concern. This study and other parent-training investigations have provided ample evidence that parents can be trained with relatively simple and economical techniques as effective child-treatment agents. Yet the occasional unpredicted, undesired effects of differential social-attention procedures demand that these procedures be used cautiously in clinical programs and that they receive further intensive scientific study. It is only by understanding the conditions under which these procedures are and are not effective that useful information can be provided for widespread social intervention programs.

REFERENCE NOTES

1. Johnson, M. R. *Operant techniques in parent training: A critical review*. Unpublished manuscript, University of Kansas, 1972.
2. Pinkston, E. M. and Herbert, E. W. *Modification of irrelevant and bizarre verbal behavior using a mother as therapist*. Paper presented at the meeting of the American Psychological Association, Washington, D.C., September 1971.

REFERENCES

- Berkowitz, B. P. and Graziano, A. M. Training parents as behavior therapists: A review. *Behaviour Research and Therapy*, 1972, **10**, 297-317.
- Bijou, S. W., Peterson, R. F., and Ault, M. H. A method to integrate descriptive and experimental field studies at the level of data and empirical concepts. *Journal of Applied Behavior Analysis*, 1968, **1**, 175-191.
- Cooper, M. L., Thomson, C. L., and Baer, D. M. The experimental modification of teacher attending behavior. *Journal of Applied Behavior Analysis*, 1970, **3**, 153-157.
- Herbert, E. W. and Baer, D. M. Training parents as behavior modifiers: self-recording of contingent attention. *Journal of Applied Behavior Analysis*, 1972, **5**, 139-149.
- Herbert, E. W., Pinkston, E. M., Hayden, M. L., Sajwaj, T. E., Pinkston, S., Cordua, G., and Jackson, C. Adverse effects of differential parental attention. *Journal of Applied Behavior Analysis*, 1973, **6**, 15-30.
- Johnson, C. A. and Katz, R. C. Using parents as change agents for their children: A review. *Journal of Child Psychology and Psychiatry*, 1973, **14**, 181-200.
- Knight, M. F. and McKenzie, H. S. Elimination of bedtime thumbsucking in home settings through contingent reading. *Journal of Applied Behavior Analysis*, 1974, **7**, 33-38.
- O'Dell, S. Training parents in behavior modification: A review. *Psychological Bulletin*, 1974, **81**, 418-433.
- Wahler, R. G. Oppositional children: a quest for parental reinforcement control. *Journal of Applied Behavior Analysis*, 1969, **2**, 159-170.
- Williams, C. D. The elimination of tantrum behavior by extinction procedures. *Journal of Abnormal and Social Psychology*, 1959, **59**, 269.

Received 13 November 1975.

(Final acceptance 21 April 1976.)