OPPOSITIONAL CHILDREN: A QUEST FOR PARENTAL REINFORCEMENT CONTROL¹

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The present study attempted to examine changes in parental reinforcement value as a function of parental use of timeout and differential attention. Subjects were two children classified by their parents as highly oppositional to parental requests or commands. Results showed that the children's oppositional behavior varied predictably with the presence and absence of parental use of timeout and differential attention. As expected, parental reinforcement value for the children was higher during treatment periods than during baseline periods.

A recent longitudinal study by Robins (1966) specified childhood behavior patterns that appear to predict serious psychiatric disturbances in adults. Essentially, this study showed that young children who display frequent "antisocial" behavior tend to exhibit similar behaviors as adults, to the point that they are likely to be labeled sociopathic.

Antisocial behavior as defined by Robins included a variety of behaviors, such as truancy, lying, and stealing. Of greater interest to the present study, however, was the finding that many of these "antisocial" children had parents who were quite lax in providing discipline and supervision. The children tended to be quite oppositional to social requirements and their parents were unable or unwilling to cope with the problem. Robins attests to the importance of such disciplinary problems by describing instances in which strict or adequate discipline for some of these children decreased the probability that they would develop adult sociopathic disorders.

The importance of developing effective treatment techniques for antisocial children is certainly illustrated by the Robins study. Many of these children oppose requirements set by their parents, their schools, and their communities in general; if one were to focus treatment on any single broad aspect of their

behavior, that behavior would probably be defined as oppositional or negativistic. Thus, if their oppositional tendencies could be modified early in life, chances of later psychiatric problems might be reduced greatly.

From the standpoint of reinforcement theory, the modification of oppositional child behavior presents some interesting practical and theoretical problems. Most reinforcement theorists assume that a child's deviant behavior is supported by appropriately contingent attention provided by the child's parents, his teachers, his peers, *etc.* In other words, one might assume that these people are sources of positive reinforcement for the child and that the sources are responsible for maintaining the child's deviant behavior. Thus, extended observation of the child and members of his immediate social community should reveal roughly consistent attention contingencies for the deviant behavior. Furthermore, manipulation of these contingencies should produce predictable effects on the child's deviant behavior. That is, frequency counts of his deviant behavior should decrease when the contingencies are absent and increase when the contingencies are present. A number of investigations (*e.g.*, Hawkins, Peterson, Schwied, and Bijou, 1966; Harris, Wolf, and Baer, 1964) have provided clear support for these predictions; parents and teachers can be trained to utilize their positive reinforcement power to produce dramatic therapeutic changes in deviant child behavior.

Although these "contingency shifting" procedures have been shown to be effective in modifying several types of deviant child be-

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havior, they have been markedly ineffective in dealing with oppositional behavior, at least as far as parent-child interactions are concerned. The author (Wahler, 1968) studied five families containing extremely oppositional children. In this study, efforts were made to eliminate parental attention contingencies for the children's oppositional behavior, while maintaining the contingencies for cooperative behavior. Figure 1 presents a summary of the

findings: although the parents became differentially attentive to their children's cooperative behavior, frequency counts of oppositional behavior were unchanged from the baseline. Fortunately, a timeout procedure proved effective in obtaining therapeutic results. In this procedure, the parents were instructed to isolate their children (in their bedrooms) immediately after oppositional behavior occurred, and to continue their social approval

Fig. 1. Mean number of oppositional and cooperative behaviors and their parental attention contingencies. Means are based on the behavior of five parent-child cases. All observations were made during 20-min clinic playroom sessions, held once a week.

after cooperative behavior. As Fig. 1 indicates, dramatic and rather stable changes occurred in the children's behavior.

The failure to obtain therapeutic changes through the simple contingency shifting procedure could have been due to several factors. One of these factors—the question of parental reinforcement value—was chosen as the focus of the present study. Conceivably, the contingency shifting procedure was ineffective because the parents themselves were not reinforcing to the children. To carry this contention further, perhaps the timeout procedure produced changes in parental reinforcement value; perhaps the stability of the children's cooperative behavior during follow-up was due to the increased reinforcement power of the parents' social attention. The only bases for this assumption were two frequently reported observations: (1) the children appeared to approach their parents more frequently during the treatment and follow-up sessions than during the baseline sessions; (2) although parental use of the timeout procedure was infrequent during follow-up, the children's cooperative behavior remained at a stable level.

The present study further investigated oppositional child behavior. Specifically, the study was designed to answer some of the preceding questions concerning parental reinforcement value.

METHOD

Subjects, Apparatus, and Observers

The subjects were two early elementary school-age boys and their parents. In both cases, the parents sought psychological help because of their children's oppositional behavior. Both sets of parents reported marked difficulties in getting their children to obey parental requests or commands; they described their children as "stubborn", "negativistic", and "headstrong". In both cases, all observations and experimental manipulations were carried out in the children's homes.

Recordings of child and parent behaviors were obtained through a behavior checklist similar to one described by Hawkins *et al.* (1966). The method essentially required an observer to make coded checks for the occurrence of a behavior class and its stimulus contingencies within successive 10-sec intervals; any occurrence of a class, regardless of its

duration during an interval, was scored as a single unit.

All observers were sophisticated in the use of operant techniques and natural science principles of observation. Approximately half of the data were collected by single observers who were, unfortunately, aware of the sequence of procedural steps involved in the study. However, at periodic intervals, reliability checks were made by procedurally naive observers.

General Procedure

Several of the initial home sessions were used to adapt the subject and his parents to the observer's presence and to obtain written records of parent-child interactions. These records were analyzed in the following way: the child's responses were grouped into classes on the basis of physical or functional similarities among the separate responses. For example, screaming and crying were considered together because of their generally similar physical characteristics; the child's behavioral failures to obey parental commands, although physically dissimilar, were considered together because of their relationship to common stimulus events, namely parental commands. Parental behaviors occurring immediately after a child response class were considered as a single stimulus class, labeled Parent Social Attention.

Observer reliability and baseline observations. When behavior and stimulus classes were formulated, efforts were made to obtain frequency counts of selected classes. The previously described paper and pencil checklist was now utilized for all remaining sessions. Each observation session was 40 min in length.

Three classes of child behavior were recorded in this study: oppositional and cooperative behavior were defined in a functional sense as specific responses following parental requests or commands. When a parental request or command was presented to the child, observers scored his future behavior as either oppositional or cooperative, depending on whether or not the instruction was followed. In order for one unit of cooperative behavior to be scored, the child had to comply with the instruction for a full 10 sec. Thus, any period of non-compliance during a 10-sec interval resulted in that interval being scored as oppositional. Observers continued to score the child's

behavior into these two categories until he completed the parental requirement or until a new parental request or command was presented; oppositional or cooperative scoring was then considered in light of the new parental instruction.

Social approach behavior was also defined functionally, in this case as verbal or physical behavior that clearly involved the child's parents. In addition, this category required that the behavior not be parent-initiated. For example, talking to a parent, physical contact with a parent, and playing with a parent were all considered instances of social approach behavior as long as the behavior was not immediately preceded by some parental action involving the child. Once this category was scored, it was also scored in future intervals if the child-parent interaction continued. If the interaction stopped for a full interval, future interactions, in order to be scored as social approach behavior, had to be child-initiated.

Two classes of parent behavior were recorded: parental social attention was considered a single stimulus class, composed of the behavior of either or both parents. Any verbal or physical behavior that clearly involved the child was scored into this category as long as it closely followed a category of his behavior (within the same or the following 10-sec interval). The principal parental behaviors composing this category included talking to the child, physical contact with him, and non-verbal play. The parental behaviors of eye contact and looking at the child were also initially scored into this category, but observer reliability problems required that they be omitted.

Parental instructions were scored because of their function in defining the child's oppositional behavior. Any requests or commands were scored into this stimulus category. Before all observation sessions, the parents were told to provide instructions for their child. The instructions presented were taken from a list of household chores that the parents considered aversive to their child (*e.g.*, carrying out the garbage, picking up the newspapers). The parents were also told to feel free to use instructions to terminate undesirable behaviors (*e.g.*, jumping on the couch). During the baseline sessions, these were the only directions given to the parents.

After reliability check sessions, an agreement or disagreement was tallied for each 10-sec interval and the percentage of agreements for the observers was computed for each response and stimulus class. Observer reliability was evaluated for half the sessions within each baseline and experimental period; agreement percentages were always better than 90%, undoubtedly due to the simple nature of the classes. Baseline observations were continued until frequency counts of all behavior and stimulus classes appeared stable across sessions. At that point, the experimental procedures were initiated.

Timeout and contingency changes. After the baseline sessions, the parents were instructed in the use of a combination timeout and differential attention program. They were told to isolate their children (in their bedrooms) immediately following the occurrence of oppositional behavior. The children were to remain isolated for approximately 5 min unless they exhibited undesirable behaviors such as screaming or crying; if these behaviors occurred, the children were to remain in isolation until the behavior terminated. The parents were told also to be especially sensitive to their children's cooperative behavior, regardless of when it occurred. Any occurrence of cooperative behavior was to be immediately followed by parental approval, administered in any manner the parents desired. The parents were also told to keep a daily record which listed the number of timeouts used per day.

The above instructions were provided after the parents were given a brief explanation of reinforcement theory. Marked emphasis was placed on the importance of rigid adherence to the treatment procedures. In fact, the parents were told to think of themselves as mechanical reinforcement and punishment dispensers, operable by specific actions of their children.

Parental training in the above techniques was carried out just before an observation session. The length and number of training sessions varied considerably for the two sets of parents involved in this study. For the first set, only four training sessions were required and these varied from 30 to 65 min (including timeout periods). The second set of parents required seven sessions, which varied from 30 to 105 min (including timeout periods).

During the training sessions (as in the observation sessions), the author told the parents to provide instructions for their child. The instructions presented were again taken from a list of household chores that the parents considered aversive to their child. After an instruction was delivered, the "trainer" was careful to note the child's behavior as either oppositional or cooperative, to note parental social attention contingencies, and to note the promptness of the timeout technique. Whenever a timeout was administered, the trainer and parents used the 5-min timeout period to discuss problems in the application of the procedure. A training session was concluded when observer records revealed prompt timeouts (within 10 sec after oppositional behavior) and correctly contingent parental attention.

A 40-min observation session followed the training sessions. These sessions were characterized by two features: (1) the observers no longer interacted with the parents and, (2) the parents used the differential attention technique *only*. The elimination of timeout during the observation sessions was based on a decision to maximize the child's opportunity to produce oppositional behavior during the sessions. Given such conditions, one could evaluate not only the proportion of parental instructions followed, but also the child's readiness to follow them (as reflected in total number of oppositional units and the latencies between parental instructions and cooperative behavior). If the parents had been permitted to use timeout, and to use it correctly, oppositional behavior would have been restricted to one 10-sec unit per instruction; thus, the possibility of a latency measure of oppositional behavior would have been eliminated.

Experimental demonstrations of parental control. As later data will show, the parents were able to implement the treatment procedures, and implementation was followed by predictable changes in the children's behavior. At this point, experimental sessions were scheduled to assess the role of the treatment procedures in producing the results that were recorded.

Experimental tests were conducted by instructing the parents to resume their baseline contingencies for the child's behavior. After several of these sessions, all parents were instructed to resume the timeout and differential

attention program. These instructions were in effect for the duration of the study.

Assessment of parental reinforcement value. To evaluate the previously discussed reinforcement change hypotheses, a simple test of parental reinforcement value was performed at four separate points in the study: at the end of Baseline #1; at the end of Experimental Treatment #1; at the end of Baseline #2; and at the end of Experimental Treatment #2.

The test of reinforcement value is described in detail elsewhere (Gewirtz and Baer, 1958). Briefly, this test requires the child to drop marbles in either of two holes of a wooden box. Both parents observe the child for a 4-min baseline and then both provide their approval following marble drops in the non-preferred hole. After 10 min of this differential attention procedure, the test is concluded and a single parental reinforcer effectiveness score is computed. This score represents a change in the per cent of marble drops in the non-preferred hole from baseline through the differential attention period: more specifically, the median per cent marble drops in the non-preferred hole over the 10-min differential attention period is subtracted from the non-preferred percentage obtained during the fourth minute of baseline.

In summary, it proved possible to evaluate changes in parental reinforcement value as a function of parental use of the contingency management program. If the reinforcement change hypothesis is valid, parental reinforcer effectiveness scores should be higher during the treatment period than during the baseline periods.

RESULTS

Case No. 1

Billy (age 6) was referred for psychological treatment by his parents because of his consistent tendency to oppose commands set by either parent. According to the parents, he often refused to go to bed on time, refused to eat certain foods, and refused to comply with most everyday requests such as cleaning up his room. Billy also tended to be quite distractible and for some time the parents attributed his oppositional behavior to his "inability to pay attention". At the time of his referral, however, both parents felt that he

Table 1

Training session data for Billy's parents: number of timeouts used by parents; mean latency per session between Billy's oppositional behavior and parental use of timeout; proportion of parental attention following Billy's oppositional responses.

Sessions	Baseline				Timeout and Differential Attention					Baseline No. 2		Timeout and Differential Attention								
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7	8	9
Number of Timeouts Used by Parents	-	-	-	-	5	7	3	-	-	-	-	5	-	-	-	-	-	-	-	-
Mean Latency (in 10-sec units) between Oppositional Behavior and Parental Use of Timeout	-	-	-	-	5.0	0.8	0.0	-	-	-	-	0.0	-	-	-	-	-	-	-	-
Per cent of Parental Social Attention Following Oppositional Behavior (based on total attention following oppositional and cooperative behavior)	-	-	-	-	15	7	2	-	-	-	-	2	-	-	-	-	-	-	-	-

was also very stubborn. Neither of Billy's two younger siblings presented similar problems.

Billy's first-grade teacher pointed out that he also tended to be fairly oppositional in the classroom. However, she did not consider him to be a serious problem at this point.

Home observations included Billy, his parents, and two siblings. The observations were scheduled on a once-a-week basis during the evening hours after dinner; during the sessions, the parents were told to keep all the children inside the house.

Interactions between Billy and his parents were infrequent; for the most part, Billy ignored his parents and they ignored him. When interactions did occur they were likely to be parent initiated, generally involving their attempts to curtail his active play or to get him to follow other instructions. Both parents responded to Billy's oppositional behavior by reasoning, arguing with him, or threatening him; on several occasions he was also spanked.

Table 1 describes parental performance during the training sessions. As this table shows, Billy's parents "caught on" to the training procedures rapidly, requiring only four sessions to master the timeout and differential attention technique.

Figure 2 describes Billy's oppositional behavior and parental reinforcer effectiveness

scores over all observation sessions. As expected, Billy's oppositional behavior varied in accordance with parental responses to his behavior; frequency counts of oppositional behavior were much lower during treatment sessions than during baseline sessions. Of greater interest, however, are the parental reinforcer effectiveness scores obtained during the various baseline and treatment periods. Parental reinforcement value for Billy was clearly a function of the treatment program; the reinforcer effectiveness scores increased, decreased, and then increased, correlated with the presence and absence of the contingency management program.

Table 2 provides several sources of information. First, it is apparent that the parents varied their differential attention to Billy's behavior in accordance with the treatment program. While they were very attentive to Billy's oppositional behavior during baseline periods, they shifted their attention to cooperative behavior during the treatment periods. Secondly, fluctuations in Billy's oppositional behavior were not due to fluctuations in number of parental instructions. That is, parental instructions were presented at fairly consistent frequencies over all sets of sessions. In addition (although not seen in Table 2), an examination of the pacing of parental instructions within sessions showed little variation over all sessions.

Fig. 2. Number of Billy's 10-sec oppositional units and parental reinforcer effectiveness scores over baseline and treatment periods. All observations were made during 40-min sessions held once a week in Billy's home. Reinforcer effectiveness scores were obtained through a choice task (see text) conducted at the end of certain observation sessions.

A further examination of Table 2 supports the frequency data of Fig. 2. Notice that the proportion of parental instructions followed, and the latencies between these instructions and cooperative behavior differed between baseline and treatment sessions; as expected from the Fig. 2 data, Billy followed more instructions during treatment periods and with greater speed.

Finally, it is of interest to note that parental use of the timeout procedure decreased markedly over the treatment period. Since Billy's oppositional behavior remained at a low level during treatment, this finding should be considered in connection with parental reinforcer effectiveness scores (Fig. 2). It is possible that Billy's high level of cooperative behavior was maintained primarily by enhanced reinforcement properties of his parent's social attention. While this contention could not be evaluated by the present study, it does seem to be a likely possibility.

A plausible explanation for the increased parental reinforcement value is seen in the data of Table 3. As this table indicates, Billy's spontaneous social approaches to his parents showed marked frequency differences between baseline and treatment sessions. Billy approached his parents more frequently during treatment than during baseline sessions; and, as Table 3 shows, Billy's parents were continuously responsive to these approaches. On the basis of laboratory work by Cairns (1963), these interaction changes could be meaningful. Cairns showed that the strength of a social reinforcer can be increased if it is made contingent upon some aspects of the child's social approach behavior. That is, if the child is first given approval by an adult for dependency behavior, that adult's social attention increases in reinforcement power.

Possibly, the timeout procedure used in this study increased the likelihood of Billy's social approach behavior by suppressing his most

prevalent responses—oppositional behavior. In other words, one might assume that the probability of social approach behavior would be higher for a cooperative child than for an oppositional child. Thus, if Cairns' findings are relevant to the observations presented in

Table 2

Observation session data for Billy and his parents: number of parental instructions presented to Billy; number of these instructions followed by Billy; mean latency per session between parental instructions and Billy's compliance; proportion of parental attention following Billy's oppositional responses; parental record of weekly timeouts for Billy.

Sessions	Baseline				Timeout and Differential Attention					Baseline No. 2		Timeout and Differential Attention								
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7	8	9
Number of Parental Instructions	10	15	12	8	16	19	12	9	13	12	14	19	7	10	16	13	10	18	14	12
Number of Parental Instructions Followed	2	3	4	1	8	15	12	8	13	2	3	19	7	9	16	13	10	18	14	12
Mean Latency (in 10-sec units) between Parental Instructions and Cooperative Behavior	15.0	25.0	15.2	32.0	3.9	0.4	1.7	3.7	0.8	13.5	10.3	0.6	0.8	1.7	0.4	3.0	3.0	0.0	0.2	0.0
Per cent of Parental Social Attention following Oppositional Behavior (based on total attention following oppositional and cooperative behavior)	81	72	80	93	46	19	23	10	3	98	96	16	4	0	2	0	1	0	0	2
Weekly Timeout (Parental Record)	-	-	-	-	39	24	7	12	4	0	0	9	4	1	0	3	0	1	0	1

Table 3

Billy's spontaneous social approaches to his parents and parental attention following the approaches.

Sessions	Baseline				Timeout and Differential Attention					Baseline		Timeout and Differential Attention								
	1	2	3	4	1	2	3	4	5	1	2	1	2	3	4	5	6	7	8	9
Approaches to Parents	6	10	4	3	8	19	30	24	33	4	2	50	31	29	51	43	39	53	60	51
Parental Attention Following Approaches	6	8	4	3	8	19	30	23	33	4	2	48	31	29	50	43	39	53	60	51

Table 3, one would predict an increase in parental reinforcement value. Of course, it could be argued that changes in Billy's social approach behavior were a simple function of increased parental reinforcement value, that these changes had no causal influence on parental reinforcement changes. Obviously, this study raises more questions than it answers.

Case No. 2

Sammy (age 5) was brought to the clinic by his parents because he tended to be quite "destructive" and "extremely stubborn". Both parents found it difficult to obtain cooperation from Sammy and at the time of their referral felt that he, rather than they, controlled household activities. If either parent attempted to enforce their few rules for Sammy, he usually erupted into such violent tantrums that they quickly relented.

Sammy was an only child, born after his mother had suffered a number of miscarriages. Both parents had been extremely concerned about his physical welfare and admitted that they had "spoiled him" by giving whatever he desired. While they were still very concerned about his welfare, both stated they were "irritated" with him most of the time.

Home observations included Sammy and both parents. The observations were scheduled on a once-a-week basis during the evening hours after dinner; the parents were told to keep Sammy inside the house for all sessions.

As in Case No. 1, interactions between Sammy and his parents were infrequent. Most of these exchanges were verbal and most were initiated by the parents, who attempted to inhibit Sammy's rough play with toys and household furniture. In most instances, Sammy opposed this parental interference, often by whining, crying, or physically fighting the parents. Parental responses to this behavior usually involved reasoning or arguing with him, or bringing out the "belt"; if the latter strategy was not followed by cooperative behavior, the belt was often used, with temporary success.

Table 4 describes the performance of Sammy's parents during the training sessions. Compared to Billy's parents, these people experienced difficulty in mastering the training procedure. Five initial sessions and two post-reversal sessions were required to complete the training requirements; a comparison of the latency and differential attention data between this table and that in Table 1 will

Table 4

Training session data for Sammy's parents: number of timeouts used by parents; mean latency per session between Sammy's oppositional behavior and parental use of timeout; proportion of parental attention following Sammy's oppositional responses.

Sessions	Baseline					Timeout and Differential Attention						Baseline No. 2		Timeout and Differential Attention						
	1	2	3	4	5	1	2	3	4	5	6	1	2	1	2	3	4	5	6	7
Number of Timeouts Used by Parents	-	-	-	-	-	6	8	4	9	3	-	-	-	3	4	-	-	-	-	-
Mean Latency (in 10-sec units) between Oppositional Behavior and Parental Use of Timeout	-	-	-	-	-	4.7	1.6	3.2	3.5	0.7	-	-	-	1.0	0.0	-	-	-	-	-
Per cent of Parental Social Attention Following Oppositional Behavior (based on total attention following oppositional and cooperative behavior)	-	-	-	-	-	53	14	3	4	2	-	-	-	3	2	-	-	-	-	-

Fig. 3. Number of Sammy's 10-sec oppositional units and parental reinforcer effectiveness scores over baseline and treatment periods. All observations were made during 40-min sessions held once a week in Sammy's home. Reinforcer effectiveness scores were obtained through a choice task (see text) conducted at the end of certain sessions.

describe the difference in training effectiveness for the two sets of parents.

Figure 3 describes Sammy's oppositional behavior and parental reinforcer effectiveness scores over all observation sessions. As expected, Sammy's oppositional behavior varied in accordance with parental responses to this behavior; frequency counts of oppositional behavior were much lower during treatment sessions than during baseline sessions. As was true for Case No. 1, parental reinforcer effectiveness scores for Sammy were clearly a function of the treatment program; the scores increased, decreased, and then increased when they were correlated with the presence and absence of the contingency management program.

Table 5 provides further information on Sammy's behavior and parental reactions to this behavior. It is clear that the parents shifted their social attention from Sammy's oppositional behavior during baseline to

cooperative behavior during the treatment sessions. Secondly, fluctuations in Sammy's oppositional behavior were not due to fluctuations in number of parental instructions. Although the number of parental instructions varied over the observation sessions, the variations were not in a direction expected to reduce oppositional behavior. That is, more instructions were given during the treatment sessions than during the baseline sessions (as was true of Case No. 1, parental pacing of the instructions within sessions did not vary much over all sessions).

Data from Table 5 also support the frequency data of Fig. 3. Notice that the proportion of parental instructions followed, and the latencies between these instructions and cooperative behavior, differed between baseline and treatment sessions; as expected from the Fig. 3 data, Sammy followed more instructions during treatment periods and with greater speed.

Table 5

Observation session data for Sammy and his parents: number of parental instructions presented to Sammy; number of these instructions followed by Sammy; mean latency per session between parental instructions and Sammy's compliance; proportion of parental attention following Sammy's oppositional responses; parental record of weekly timeouts for Sammy.

Sessions	Baseline					Timeout and Differential Attention						Baseline No. 2		Timeout and Differential Attention						
	1	2	3	4	5	1	2	3	4	5	6	1	2	1	2	3	4	5	6	7
Number of Parental Instructions	8	14	12	16	15	22	18	19	15	13	17	13	15	20	19	23	14	17	12	16
Number of Parental Instructions Followed	3	2	1	2	3	4	16	14	13	13	17	9	2	19	19	23	14	17	12	16
Mean Latency (in 10-sec units) between Parental Instructions and Cooperative Behavior	13.3	27.5	25.0	20.0	24.0	15.2	0.6	2.7	4.0	3.9	1.5	3.9	21.5	0.5	1.0	0.1	2.7	0.1	0.0	0.1
Per cent of Parental Social Attention Following Oppositional Behavior (based on total attention following oppositional and cooperative behavior)	77	81	72	88	71	41	38	15	21	8	15	98	95	10	9	0	2	0	0	1
Weekly Timeout (Parental Record)	-	-	-	-	-	40	16	19	20	6	7	0	0	12	1	3	0	1	0	0

Table 6

Sammy's spontaneous social approaches to his parents and parental attention following the approaches.

Sessions	Baseline					Timeout and Differential Attention						Baseline		Timeout and Differential Attention						
	1	2	3	4	5	1	2	3	4	5	6	1	2	1	2	3	4	5	6	7
Approaches to Parents	4	7	2	9	8	7	3	15	17	24	38	6	2	40	28	45	33	51	36	48
Parental Attention Following Approaches	4	6	2	7	8	7	31	15	17	24	38	6	2	40	28	44	33	51	36	47

Table 5 also presents the parents' recorded use of the timeout procedure. As in Case No. 1, parental use of the timeout procedure decreased markedly over the treatment period. Thus, in view of enhanced parental reinforcement value, Sammy's frequent cooperative behavior during treatment could have been maintained by reinforcement properties of his parents' contingent social attention.

Again, consistent with Case No. 1, Sammy's social approach responses to his parents were far more frequent during treatment sessions than during baseline sessions; Table 6 describes this finding. Thus, correlational evidence is available to suggest an explanation for increases in parental reinforcement value.

DISCUSSION

The present data lead to two conclusions: (1) parental use of the combined timeout and differential attention program effected dramatic and stable changes in the children's oppositional behavior; (2) parental reinforcement value increased as a function of the above program.

While the first conclusion comes as no great surprise (based on prior research; *e.g.*, Wahler, 1968), the systematic changes in parental reinforcement value present some puzzling questions. First, if parental reinforcement value was initially quite low, why should the timeout procedure be effective? Timeout is conceptualized as removing the child from sources of positive reinforcement, presumably social reinforcement. Therefore, if the parents were ineffective sources of positive reinforcement, the timeout procedure should have had little punishing influence. The fact that the procedure did work may mean that the parents were of significant reinforcement value during baseline or that timeout removed the child from significant sources of non-social reinforcement (*e.g.*, toys or television programs).

Secondly, if parental reinforcement value was initially quite low, what was maintaining the children's oppositional behavior during baseline? This question is also relevant to the earlier study (Wahler, 1968), which showed that eliminating parental social attention contingencies for oppositional behavior did not affect the strength of this response class. A plausible answer to this question involves the definition of oppositional behavior used in

these studies. Although oppositional behavior was recorded as a class of responses, it is best described as the absence of cooperative behavior. In other words, the child was considered oppositional if he did not cooperate following parental requests or commands. Apparently, then, oppositional children present behavioral deficits rather than excessive frequencies of specific behaviors. Examined in this light, the relevant question is not one of behavior maintenance but rather of how to account for low frequencies of cooperative behavior. If the parents were in fact poor sources of positive reinforcement, this question poses no problem.

Finally, how did the timeout and differential attention program effect changes in parental reinforcement value? While we have chosen to focus on the previously discussed work by Cairns (1963), it is apparent that other speculations are possible. For example, the parents described themselves as enjoying their children much more after treatment than before treatment. Informal observations supported these descriptions; the parents appeared to talk more frequently with their children, smile more frequently, and have more physical contact with them. It may be, then, that changing the children's behavior through timeout led to changes in parental behavior, changes that were quite reinforcing to the children. This possibility, and that suggested by the work of Cairns, are both subject to empirical tests.

REFERENCES

- Cairns, R. B. *Antecedents of social reinforcer effectiveness*. Paper read at the biennial Society for Research in Child Development meeting, April, 1963.
- Gewirtz, J. L. and Baer, D. M. Deprivation and satiation of social reinforcers as drive conditions. *Journal of Abnormal and Social Psychology*, 1958, 57, 165-172.
- Harris, F. R., Wolf, M. M., and Baer, D. M. Effects of adult social reinforcement on child behavior. *Young Children*, 1964, 20, 8-17.
- Hawkins, R. P., Peterson, R. F., Schwied, D., and Bijou, S. W. Behavior therapy in the home: amelioration of problem parent-child relations with the parent in a therapeutic role. *Journal of Experimental Child Psychology*, 1966, 4, 99-107.
- Robins, L. N. *Deviant children grown up*. Baltimore: Williams & Wilkins Co., 1966.
- Wahler, R. G. *Behavior therapy for oppositional children: love is not enough*. Paper read at Eastern Psychological Association meeting, 1968.

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