CONTINGENCY CONTRACTING WITH SCHOOL PROBLEMS

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Contingency contracting procedures used in managing problems with school-age children involved analyzing teacher and/or parental reports of behavior problem situations, isolating the most probable contingencies then in effect, the range of reinforcers presently available, and the ways in which they were obtained. The authors prepared written contracts delineating remediative changes in reinforcement contingencies. These contracts specified ways in which the child could obtain existing individualized reinforcers contingent upon approximations to desired appropriate behaviors chosen as incompatible with the referral problem behaviors. Contract procedures were administered by the natural contingency managers, parents and/or teachers, who kept daily records of contracted behaviors and reinforcers. These records were sent to the authors and provided feedback on the progress of the case. Initial results of this procedure have been sufficiently encouraging to warrant recommending an experimental analysis of contingency contracting as a clinical method.

This paper discusses our adaptation of operant methodology to deal with school children's problem behaviors in the setting of a diagnostic and remediation center. The methods described are based primarily on the structuring of available reinforcement contingencies to reinforce approximations to the desired appropriate school behaviors. The data presented are preliminary but suggest that systematic research in these methods might be very fruitful. The term "contingency contract" was borrowed from L. P. Homme (1966), who used written contracts with adolescent potential dropouts to spell out the reinforcers that were to follow completion of academic tasks. The present contract involved a somewhat different procedure. The contingency contract was a written explanation of the changes in contingencies to be used by the natural contingency managers, parents and/or teachers. It usually also contained: (1) a written schedule of desired behaviors (such as approximations to school attendance or behaviors involved in appropriate school achievement) with assigned point values, and (2) a written schedule of high probability behaviors (Premack, 1965) (individually defined rewards, privileges, preferred activities) with assigned exchange values.

The efficacy of structuring reinforcement contingencies to shape or maintain adaptive behavior in children is evident in a growing volume of behavior studies (Staats, Minke, Finley, Wolf, and Brooks, 1964; Ullmann and Krasner, 1965; Homme, 1966; Nolen, Kunzelmann, and Haring, 1967; O'Leary and Becker, 1967; Bushell, Wrobel, and Michaelis, 1968; Wolf, Giles, and Hall, 1968; McKenzie, Clark, Wolf, Kothera, and Benson, 1968; Hewett, Taylor, and Artuso, 1969). The present procedure was devised to see if viable changes in child behavior could be brought about by guiding parents and teachers in procedures of contingency control where frequency counting, direct observation, and direct manipulation by professionals were not immediately possible. Problems with which these procedures have been used have ranged from persistent school runaway behavior, school non-attendance, hyper-aggressivity, and stealing, to achievement motivation in underachieving students. Subjects were public school children, first through eleventh graders, from the seven parish areas served by the Louisiana Tech Special Education Center; all lived at a distance of 10 to 85 miles from the Center. The procedures described were initially the result of the need to deal with situational difficulties of sometimes near-crisis dimensions for the families and schools involved. Since most of these problems were of situational origin, the

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primary intervention procedures thought necessary were those of minimal prescriptive restructuring to alleviate the immediate problem.

Formulation of a contingency contract generally approximated the following pattern. Initially, referral information indicated if a problem might be largely one of motivation rather than academic programming. In considering the use of a contract, some sign was needed that the child could actually do or had done what was expected of him (such as inconsistent grades, intelligence test results, or adequate achievement test scores). If the child was badly in need of special academic programming, motivation by means of a contract might have been detrimental, unless that programming could have been provided in that setting. Also, if special programming would have been sufficient for motivation in and of itself, there would obviously have been no need for a contract.

After referral, the first step was to interview the child's adult agents. If the school appeared incapable of following the exigencies of a contract explicitly, only the parents and home were involved. If the home was unlikely to cooperate and the school would, only the school was involved. In most cases both agencies entered in, even though personal interviews might have been only with parents. Parents who had exhausted all available external sources of remediation and who were still concerned about their child's problems appeared to be the most willing to restructure their child-management contingencies.

Parents and teachers were told that it would be better not to attempt to write a contract unless they definitely wanted such help and were willing to involve their own personal effort in its success. This was done for at least two reasons: (1) If the system were to be attempted half-heartedly, it would not be enforced consistently and whatever extinction procedures were necessary would not occur. (2) If the agents were to give up on the system at the point where the child was testing it most severely, they would probably terminate with the maladaptive behavior at a higher peak and one even more resistant to change than before.

Initial interviews with the natural contingency managers were used to provide answers to the following questions:

1. What specifically were the key problem behaviors and how often did they occur? These primary behaviors were isolated and some provisions for counting their pre-intervention frequency were made to provide "baseline" data.
2. What was the typical or occasional consequence of these problem behaviors? Careful interviewing at this point provided a fairly complete list of usual consequences and some estimate of the schedules of their usage which appeared to be maintaining the maladaptive behavior.
3. What were the events, privileges, pastimes, foods, and material possessions which already served as reinforcements for this child? These were usually obtained by asking the parents or teachers what the child liked to do if he had the opportunity, what he spent the most time doing, what he would work for, and if any other consequence might possibly serve as a reinforcing event. Parents and teachers were usually able to provide a fairly complete list of reinforcers for their children in a roughly hierarchical arrangement of value to the child. For each reinforcer the parent was queried as to how the child at that time gained access to these reinforcers. In almost all cases, access to desired reinforcers was not being made contingent upon approximations to the desired behavior.
4. What might be used as a definite punishment or extinction consequence of an undesirable behavior if needed? This question was usually posed to the parents in the form of asking what the child would work to avoid, what seemed to be the most effective punishment if punishment were needed, and how easily might the parents or teachers be able to legislate specific punishing contingencies if they were found to be necessary. Here again, parents or teachers were usually able to identify a rough hierarchy of events which the child would work to avoid.

Once these basic questions were answered, the problem became one of how to change the contingencies in order to utilize reinforcers

already available. The written contract had to be clear, complete, useful as ongoing data to judge its effectiveness, and simple enough to carry out that its demands did not make it aversive to the agents enforcing it. The child was presented with the record sheets and the new regimen by his parents or teacher. In most cases he took his weekly sheet of earned points to school where his teacher gave him points as earned and then brought it home where his parents gave him points earned at home. Points earned at school and home were spent on a daily and weekly basis. His weekly record sheet of points spent was kept at home for easy reference by the child.

Behavioral change was monitored by building into the contract methods of measuring the problem behavior before the contract went into effect, of graphing progress continually, and of measuring the problem behavior after intervention with the contract had been completed. Independent records from the schools (such as grades, attendance records, incidences of maladaptive behavior) were obtained in addition to parental report forms.

The contracts generally fell into two ways of arranging contingencies once the problem behaviors and available reinforcers had been delineated. In the first, receipt of the reinforcers was simply made contingent on adaptive behaviors that were incompatible with the problem behaviors. For example, R's parents and teachers complained that he did not complete homework or class assignments unless he did so very carelessly and that he did not work or listen to directions without constant reminders and "pushing". R's contract was formulated as follows:

Contingency Contract:

This contract defines the ways in which R can earn points by doing specific things at school and at home that would be necessary for his academic growth (*i.e.*, completing class assignments and homework). He exchanges these points for preferred activities or money (*i.e.*, going places, watching television, Coke money, *etc.*). He can earn an approximate maximum of 50 points per day or 250 points per week under this schedule.

R's teacher marks his points earned each day on his weekly record sheet of

points earned (Fig. 1) and sends home an average of one graded paper per day for which he gets additional points. His mother gives him points for homework done at home and keeps a record of points spent on the appropriate weekly sheet (Fig. 2). When R wants to spend his points, he is allowed to and given verbal praise for having worked well enough at school to have enough points. When he does not have sufficient points for something he wants, a simple statement that he does not yet have enough points is made. It is crucial that R receive these privileges only when he has the required number of points already on his chart.

It appears that R's non-working at school results in getting more attention from adults than his working ordinarily does. Switching the tables on him should result in increased effort on his part. Efforts should be made to give R attention and approval when he is working and behaving as we would hope. Inappropriate behavior or non-working should result in little attention (punishment, reminders, scolding included) given to him. Insofar as possible, R should learn that he will be ignored when he is not working or behaving appropriately, but when he does put forth effort and behave appropriately, people are proud of him and give him attention.

In comparing six weeks' grades for the report before intervention and the report after intervention, R's grades stayed the same in three subjects, improved one letter in two subjects, and improved two letters in one subject.

In the second general method of contract arrangement, the behavioral steps leading toward the desired terminal behavior were arranged in sequential, programmed fashion. Receipt of the reinforcers was then made contingent on these steps. In the case of S, a "school phobic" child, points were earned for approximations or steps toward full school attendance where she had previously had problems: getting out of bed (5 points); getting dressed (5 points); having breakfast (5 points); no crying before school (5 points); no illness before school (5 points); going to schoolbus (5 points); getting on schoolbus (5 points); going to class (5 points); going into classroom

(5 points); staying in class (5 points per 15 min); no crying at school (5 points); no illness at school (5 points); homework started with no reminders (15 points), with one reminder (10 points), with two reminders (5 points), completed (5 additional points). S exchanged points for: TV viewing, renting toys or books, helping mother in kitchen (25 points per 30 min); outside play time (50 points per 30 min); having friends over or going to visit friends (100 points); going out privilege (150 points); overnight visit with friend (200 points); spend-

Week of: _____

<i>R earned points for:</i>	<i>Mon.</i>	<i>Tues.</i>	<i>Wed.</i>	<i>Thurs.</i>	<i>Fri.</i>	<i>TOTALS</i>
Homework:						
completed (3 points)						
well done* (5 additional)						
Class assignments:						
completed (1 point each)						
well done* (2 additional)						
with no more than 2 misspelled words or						
careless arithmetic errors						
(1 additional)						
Listening and complying to directions						
without reminder (1 point each time)						
Daily grades:						
A (10 points)						
B (6 points)						
C (3 points)						
D (1 point)						
Homework:						
started with no warnings (5 points)						
one warning (3 points)						
two warnings (2 points)						
three warnings (1 point)						
completed by supper time (2 additional)						
TOTALS						

*BONUS: Baseball glove as soon as R earns 75 points total in these two "well done" categories

Fig. 1. Weekly record sheet of points earned.

Week of: _____

<i>R exchanged his points for:</i>	<i>Mon.</i>	<i>Tues.</i>	<i>Wed.</i>	<i>Thurs.</i>	<i>Fri.</i>	<i>Sat.</i>	<i>Sun.</i>	<i>TOTALS</i>
Outdoor time								
(5 points per ½ hour)								
Television viewing time								
(5 points per ½ hour)								
Kitchen time (cooking privileges)								
(5 points per ½ hour)								
Driving (as parents direct)								
(10 points per ½ hour)								
Going out privilege								
(10 points per event)								
Staying with friend all night								
or having one over for night								
(25 points per event)								
Money (up to limit set by parents)								
(5 cents per point)								
TOTALS								

Fig. 2. Weekly record sheet of points spent.

ing money (1 point per penny); plus an additional bonus of one article of new clothing for going to school one full week. The terminal state desired in S's case, full school attendance without resistance, was attained on the eighth school day after the contract was initiated and maintained throughout the rest of that and the next school year.

An essential part of the program was the inclusion of a built-in feedback system. Most of the contracts provided for parents or teachers to mail completed record forms to us weekly. Upon their receipt, blank forms were sent them for another week. Agents were initially given two weeks' worth of forms to allow for one week's transit in the mails. Parents and/or teachers were encouraged to write or call as problems or questions arose. The information gleaned from the obtained record forms was used to initiate telephone conference calls or visits to the agents or to clarify or change the contracts as behavior shifts occurred. This follow-up was crucial. Even if the contingency change as designed had "hit" upon the right combination of reinforcement schedules, consistent encouragement of the parents or agents of the contract was often necessary in order to maintain the behavior until new patterns of interaction had become more solidified.

In many cases, fading procedures from the contract were instituted at the child's request. A fading procedure was seldom needed to wean the child away from the contract system. In most cases, the children themselves gave agents clues as to when to cease the program or how to ease it back to a more natural set of contingencies. In others, external situations caused a natural change back to more natural behavior management, such as the end of the school year. Parents often indicated a reluctance to terminate the contract before the end of the school year. Only a few resumed use of the contract at the beginning of the subsequent school year.

Parents and school personnel have communicated to the contract writers their enthusiasm about the procedures and results, and have often referred other cases for similar treatment. The fact that the contracts use reinforcers already present in the child's environment, rather than introducing new ones, seems to have appeal to the natural contingency managers with whom we have worked.

Training the natural contingency managers inductively through the prescriptive, precise procedures of the contracts seems to result in the principles being learned more completely than when we have attempted to teach the principles of modifying behavior before dealing specifically with the problem behavior at hand.

Optimally, the use of direct observation in the home or the school to ascertain the agent's compliance with the contract, plus the use of multiple baseline procedures to validate the efficacy of the contract on other problem behaviors for the same child, would have provided more data for the validity of the procedures beyond parent and school reportings. Even here, the establishment of a functional relationship between the instigation of the contract and the changes that accrue would be subject to the problems of indeterminacy and changes in expectation (Rosenthal and Jacobson, 1968). Relying on the agent's report of behavior alone also posed difficulties in determining the actual course of the behavior as it was occurring. On the one hand, if the contract was being consistently enforced and still was not working as expected, the possibility existed that the authors of the contract had not eliminated the salient reinforcers maintaining the problem behavior or had not provided strong enough reinforcers to change it to a more adaptive form. In this case, a new combination or revision of the old combination of reinforcers in the old contract was necessary. On the other hand, it appeared to be risky to assume that the system needed changing too soon. Many of the maladaptive behaviors were thought to have been shaped by the child's being able to "wait out" or "outlast" adult contingencies. If this were the case, the problem became one of encouraging the adult agents to maintain the newly initiated contingencies in order to break the control-counter-control cycle being tested by the child. Further studies are now in progress using multiple baseline and independent observation in the home and school to clarify further the processes involved.

A primary concern of professionals often is one of maximum efficiency in meeting the behavioral crises of individual cases while continuing their professional efforts in other endeavors. If experimentally verified, the "contingency contract" method offers one possible

avenue to resolve in a clinical setting the perpetual "minimax" conflict of bringing about maximal behavioral change with minimal expenditure of professional time and money. The prospects of the natural contingency managers in the child's situation, teachers and parents, actually administering the new procedures may be one means of closing the gap between the availability of professional staff and the press of public demand for their services.

In summary, the application of reinforcement theory in the form of written contingency contracts as specific directions through which the natural contingency managers can change problem behaviors appears to be a potentially useful tool for professionals dealing with children's problems. The effect of such contracting appears to be largely dependent upon: (1) the capacity of the professionals who prepare the contingencies to derive from verbal information those contingencies that appear to be maintaining the problem behavior and then to change them, and (2) the relative ability of the adults involved to maintain the contingencies spelled out by the contract.

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