

# Developments in Business Simulation & Experiential Exercises, Volume 8, 1981

## BEHAVIORAL CONSEQUENCES OF REWARD REGARDING EMPLOYEE ABSENTEEISM IN AN INDUSTRIAL SETTING AN OPERANT CONDITIONING APPROACH

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### ABSTRACT

An attempt was made to alter the behavioral responses of twenty-one hourly industrial employees regarding their work attendance. This quasi-experiment provided a lottery incentive plan over a ten week period. Re-suits were analyzed in terms of absenteeism, production, and improvement in quality of life at work. In each area of evaluation, a positive result ensued. Reactions to behavioral implementation within the industrial setting are discussed.

### INTRODUCTION

Numerous studies have been performed during the past fifteen years implementing a behavioral change concept for employees in an industrial and laboratory environment. Behavioral modification has been investigated in this Study in an industrial setting, in an effort to reduce absenteeism, increase production and improve the quality of work on the job. There have been a number of methods used to improve these several areas; of particular interest has been the reward or lottery approach, with variations resulting in continuous and variable reward reinforcement schedules. Varying degrees of participatory interaction have also been used, with corresponding results depending on the design and implementation.

Certainly the work of B.F. Skinner (1953) has been the fountainhead for most of the studies using operant conditioning as a means to alter employee behavior (Nord, 1969). In addition, many other researchers have applied the concept of operant conditioning in various studies as suggested by Walter Nord, 1969; Jablonsky and DeVries, 1972; Honig, 1966; Berger Cummings and Heneman, 1975.

Using incentive plans and implementing them in terms of continuous and variable reward (Latham and Dossett, 1978) has proven quite successful, both for the employer and the employee. The Latham & Dossett study found that cost was reduced, productivity increased and the reaction by the employees, both managerial and subordinate, were positive regarding this plan. Other studies (Pedalino and Gamboa, 1974) used a lottery system incentive in a version of poker, which resulted in a lowering of absenteeism among industrial employees.

The basis of this study is drawn from the studies by Latham and Dossett, 1976; and Pedalino and Gamboa, 1974, with these variations. This study attempts to rationalize the use of behavior modification in a realistic construct, in an industrial setting, while evaluating the comparative change of production, absenteeism and human resource reaction in the incentive plan. The study by Lawler and Hackman (1969), utilizing employee participation and incentive plans, established a guideline and provided further insight for the current study. vs. additional studies, Yukl, Wexley and Seymore, 1972; and Yukl and Latham, 1975; provided further references, although both of these studies primarily researched variable and continuous

reward as the explanatory variable in reducing employee absenteeism.

### METHOD

#### Sample

The study was conducted in an industrial moulding manufacturing site in Florida. The employees consisted of men and women (21), all of which had been with the company for at least a year prior to the start of this study. All were full time employees, all were experienced at their jobs and all were compensated based on a cost of living increase, adjusted quarterly to their current wage. Income was deemed average or slightly above for these positions. All employees were nonunion.

#### Procedure

Because of the limited number of employees at this site, and the physical set-up of the Site thereby preventing any separation among employees, the typical experimental and control group structure could not be utilized. Therefore, a comparative analysis procedure was constructed where all employees currently employed and active in the ten week study had to have been employed during the same period of time a year ago. From a total of 27 employees, 21 matched according to this requirement. The rate of absenteeism and production was established in the control period (first ten weeks of 1979) and compared with the experimental period (first ten weeks of 1980). Production was adjusted for inflationary variation and price differentials between the two periods. Absenteeism for these 21 employees were recorded during both periods. In order to establish a goal, the control period, absenteeism average was used as a base line (Pedalino and Gamboa, 1974), for comparative analysis. An employee not present at work, except for vacation, jury duty, bereavement, or paid holiday, was considered absent from the job.

A reward system was presented in the form of a poker game. The principal was to reinforce approved behavior, to modify or alter the existing behavior of these employees that was disapproved by management. The poker game was designed to permit, on the basis of chance, the employee with the perfect attendance to win. Each week an employee who had perfect attendance at work would qualify for a random selection of a playing card from a standard deck of 52 playing cards. At the end of five weeks, the employee with the best hand won a prize equal to \$25.00. The names of those employees eligible for a card were posted conspicuously for all to see. Winners were also announced by posting their name in the same place.

### RESULTS

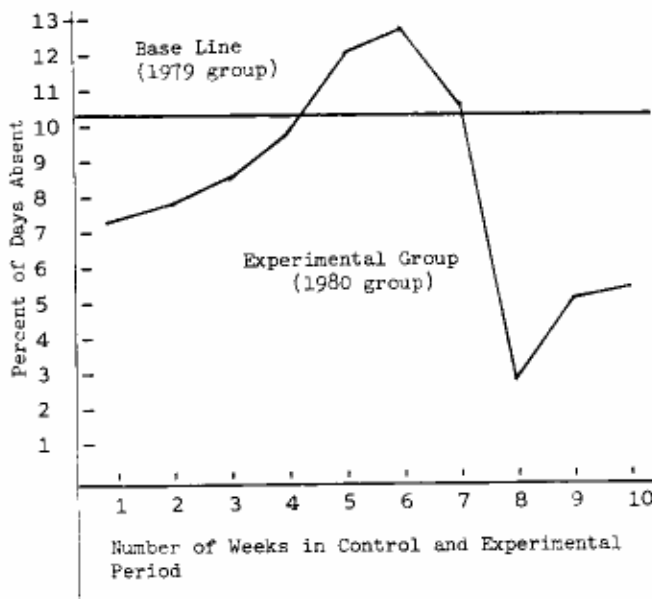
The results of this study are outlined below in terms of the three criterias of absenteeism, production, and improvement of work life.

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## Absenteeism Criteria

Figure 1 illustrates the results of this experiment. The control or baseline period of 1979, based on the total number of days absent, resulted in an absenteeism rate of 10.26%. During the experimental period, the rate of absenteeism was reduced to 8.28%, or a reduction of 19.29%. The result of this decrease between baseline, (which management decided was an unacceptable rate), and the experimental period was tested for statistical significance by a single-tailed *t* test ( $t = 7.44$ ,  $P < .05$ ). A single-tailed test was implemented since a single direction was evaluated between the control period and the experimental period with regard to employee absenteeism.

FIGURE I  
COMPARISON OF CONTROL AND EXPERIMENTAL WORK GROUPS



## Production Criteria

The second criterion for analysis was production. Here, a direct comparison was made between the control period (first 10 weeks of 1979) and the experimental period (first 10 weeks of 1980) in terms of orders shipped during each time period. In 1979, a total of 119 orders were shipped during the first 10 week period as compared to 130 orders shipped in the first 10 weeks of 1980, or an increase of 9.24%. A further examination of the type of orders shipped revealed that in 1980, there were 15 special moulds manufactured and shipped, compared to 56 of the same category manufactured and shipped in 1979, or an increase of 33.9% in this specific area. (Special moulds are more difficult to produce, take longer and are sold at higher prices than standard moulds).

## Behavior Criteria

The final criterion, improvement of work life, was evaluated through responses made by these 21 employees, from a written questionnaire. This questionnaire was primarily designed to elicit positive or negative responses regarding the employee's reaction to management, their job itself, and their feelings about their environment and the company.

These employees were asked to rate the questions on a scale of 1 to 5, with 5 being the highest rating.

No attempt has been made, at this point, to validate or determine reliability of this questionnaire. The intention here is to record employee reactions only, and any generalization concerning these responses would be pure conjecture. Nevertheless, these results are summarized below.

On the questions relating to management, these employees affirmed their positive reaction by 54.5% with 28.7% of the employees recording a negative feeling toward management. These employees had a very positive reaction toward the company (62.3%) and a relatively small negative feeling (14.3%). The number of employees who felt there was no change in their feelings toward the company was 23.4%. In a similar manner, their reaction toward their work environment represented a positive feeling (48.4%) with a negative of 24.2% and a no change in their feeling toward their environment of 27.3%. The evaluation of no change was determined by analyzing the rating scale in this manner. A rating score of 1 and 2 was considered positive, 3 was considered no change or uncommitted, 4 and 5 was considered negative, 1 and 2 negative, and 3 was considered no change or uncommitted, (Thurston, 1928). The final questions referred to the job specifically, and here 38.2% reflected a positive feeling, with 35.2% expressing a negative feeling toward their job.

Granted that there was no pre-experimental group questionnaire concerning the employees' attitudes in these areas, the results of this post-questionnaire of the experimental group can be viewed as directional by management.

## DISCUSSION

There are a number of limitations that should be identified in this research. First, no control group operated concurrently with the experimental group. Second, no pre-test was given prior to the study to determine the disposition of these employees to the company, management and their jobs specifically. And therefore, no comparison could be made with the present questionnaire as it was applied in this study.

Several results indicated in this study have confirmed the conclusions drawn by other research. The decline in absenteeism was significant. Similar to that reported by Pedalino and Gamboa (1974), and the rate of productivity increase was also significant, and similar to the results discussed by Latham and Dossett (1978). In the area of improvement in work life, several comments should be made.

As indicated by the results obtained, the most significant aspect was in responses directed toward the job itself and the company in general. These employees were almost divided equally in their positive and negative assessment of their jobs in the company. Even though 76.2% of all employees favored the program itself, this factor did not influence a majority of these employees toward a favorable feeling of their job. A major consideration of the incentive program was to improve work life (Hackman and Suttle, 1977) in this instance, perhaps, it did not succeed. At least there was no improvement as a comparison between positive over negative attitudes. Since there was not a pre-study on attitudes, there is no way to evaluate the post-study in terms of improvement over conditions that existed prior to the incentive program.

A similar situation could be stated for the responses toward the company. Although a majority (62.3%) had a positive feeling toward the company, a large percent (23.4%) was uncommitted. This non-committal group

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could be viewed as a flaw in the incentive program, since a positive direction was the objective, and in effect no change occurred in this segment

Several intriguing occurrences took place in this research that require further discussion. The basic principal of operant conditioning, as proposed by Skinner (1953, 1954) and Others (Honig, 1966), concerns the immediacy of the reward following the correct behavior. Further, several proposals by Skinner (1966) and others (Yukl, Wexley and Seymore, 1972; Yukl and Latham, 1975; Latham and Dossett, 1918), view variable reinforcement as a stronger inducer than continuous reinforcement. The present research really falls into neither category. That is, reinforcement must be considered continuous, but Occurred only twice over the ten week period. Even with this minimal schedule, positive results developed.

The incentive itself has to be evaluated as well. The monetary reward was paid after each five week period with a relatively small dollar incentive. Even under these conditions, employees perceived the reward as adequate. Interaction between employee and management did not change during the study, therefore negating any "Hawthorne effect". Both the reward itself, and the schedule appear to be inadequate in light of current and past research. Yet the results of this research are positively directed, although no clear indication as to why this occurred has been discovered even after the questionnaire was thoroughly evaluated.

The concept of operant conditioning, as a tool of management, has been developing for more than fifteen years. However, research must firmly establish whether the change in employee behavior is a temporary result, (Pedalino and Gamboa, 1974; Yukl, Wexley, and Seymore, 1972; Yukl and Latham, 1975) affected by a schedule of reinforcing incentives, or if the employee has Internalized and accepted the change as part of his perceived outlook in the business environment. Further research is needed to evaluate the consequences of operant conditioning with the concept of improving life at work for the employee. In both instances, the evaluation must lead to a positive direction in productivity and profit or the results only become interesting from a laboratory and not a practical aspect.

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