ORGANIZATIONAL BEHAVIOR AND HUMAN PERFORMANCE 8, 217–229 (1972)

The Effects of Contingent and Noncontingent Rewards and Controls on Intrinsic Motivation

EDWARD L. DECI[1]
University of Rochester

Theories of management and work motivation distinguish between two kinds of rewards—extrinsic and intrinsic. Extrinsic rewards are ones such as money and verbal reinforcement which are mediated outside of the person, whereas intrinsic rewards are mediated within the person. We say a person is intrinsically motivated to perform an activity if there is no apparent reward except the activity itself or the feelings which result from the activity. All of the theories of work motivation which consider both kinds of rewards assume that the effects of the two are additive. This paper examines that assumption by reviewing a program of research which investigated the effects of external rewards and controls on intrinsic motivation. It was reported that a person's intrinsic motivation to perform an activity decreased when he received contingent monetary payments, threats of punishment for poor performance, or negative feedback about his performance. Noncontingent monetary payments left intrinsic motivation unchanged, and verbal reinforcements appeared to enhance intrinsic motivation. A cognitive evaluation theory was presented to explain these results, and the theory and results were discussed in relation to management.

Since the advent of scientific management (Taylor, 1911), piece-rate payments (or wage incentives) have been commonly used for motivating employees. Such systems (which date back to preindustrial times) tie a person's financial rewards directly to his performance by paying him a set rate for each unit of output which he produces. The motivational assumption underlying piece-rate payments—as well as sales commissions, bonus plans, etc.—is that a person will perform effectively to the extent that his rewards are made contingent upon effective performance (cf. Vroom & Deci, 1970).

There is considerable support in the psychological literature for this assumption about motivation. The behaviorists have substantiated and refined the Law of Effect (Thorndike, 1932), which states simply that

[1] The ideas in the introduction of this paper draw heavily on Vroom and Deci (1970). I am indebted to Victor Vroom for his ideas and collaboration. I would like to thank John Miller for making helpful comments on an earlier draft of the manuscript, and Wayne Cascio, Larry Coff, Jim Gould, and Stanley Kaplan for assistance in data collection.

when a response is followed by a reinforcement it will have an increased probability of recurrence. Piece-rate payments presumably reinforce the response of producing output and should, therefore, strengthen that response.

The use of piece-rate payments can also be defended by the psychological literature on expectancy theories of motivation (e.g., Vroom, 1964; Atkinson, 1964). The underlying assumption in these theories is that man's behavior is goal directed (Tolman, 1932); in other words, man will engage in behavior which he believes will lead him to desired end states. Hence, if someone is working for piece-rate payments, one might expect that he would produce efficiently in order to get substantial wages.

For this motivational system to work effectively, it is necessary that there be clear standards for performance which the workers understand. Then, performance has to be monitored, and rewards must be administered consistently. Further, the output must be quantifiable so that performance can be measured, and jobs should be relatively independent so that a worker has control of his own production rate (for more detail on this, see Vroom & Deci, 1970).

This approach to employee motivation utilizes externally mediated rewards, i.e., rewards administered by someone other than the employee himself. In so doing, the management is attempting to control the employee's behavior so he will do what he is told, in the way and in the amount that he is told.

Although this system seems to have advantages for motivating employees, there are also many limitations to it. Perhaps the most serious is that only certain kinds of reinforcements can be externally mediated. These are tangible rewards including money, promotions, and fringe benefits, as well as verbal or social reinforcements. These rewards can satisfy what Maslow (1943, 1970) has called "lower-order" needs; however, they do not take account of "higher-order" needs for self-esteem and self-actualization (Maslow, 1943, 1970). Many studies have reported that employees consider higher-order needs to be important (e.g., Morse & Weiss, 1955) and that there is a positive relationship between opportunity for self-expression and job satisfaction (Vroom, 1962). It follows then that there are many important motivators of human behavior which are not under the direct control of managers and, therefore, cannot be contingently administered in a system of piece-rate payments.

More recent approaches to management (e.g., Likert, 1961; Argyris, 1957; McGregor, 1960) have assumed that man can be intrinsically motivated to perform effectively; that is, they assume that individuals can be motivated by the job itself and can derive satisfaction from doing the job well. These approaches focus on higher-order needs where the rewards

are mediated by the person himself, and they stress the importance of getting the worker ego-involved in his work and committed to doing it well.

There are two essential aspects to motivating employees intrinsically. The first involves designing tasks which are interesting and which necessitate creativity and resourcefulness—what White (1959) calls "effectance" motivation—and the second involves allowing workers to have some say in decisions which concern them so they will feel like causal agents in the activities which they engage in. DeCharms (1968) has suggested that man has a need for feelings of personal causation and that the essence of intrinsic motivation is a feeling of free choice and commitment.

The newer participative management theories suggest several means of eliciting intrinsic motivation. Employee participation in decision making is stressed as a means of getting employees more ego-involved. The employees are given a voice in decisions which affect them, and they are given greater latitude in the way they do their jobs. There is less reliance on authority as a control mechanism, and employees are judged by their results. These newer theories also suggest that jobs should be enlarged or enriched so as to be more challenging (cf. Myers, 1970; Lawler, 1969). Leavitt (1962) has suggested that challenging jobs may be even more important than allowing participation in decision making, though the most intrinsically motivating jobs are the ones which have both.

These theorists believe that participative management is the most effective way of achieving high performance (e.g., Likert, 1961) and also more conducive to mentally healthy employees (e.g., Maslow, 1965). There are some experimental results which substantiate that organizations which have implemented these practices are more productive and have higher levels of employee satisfaction (Likert, 1967; Marrow, Bowers, & Seashore, 1967). Further, Kornhauser (1965) found that there is a positive relationship between employees' reports of the degree to which they get to use their special abilities on the job and strong mental health.

Most theories of work motivation (e.g., Porter & Lawler, 1968) assume that the effects of these two kinds of rewards—intrinsic and extrinsic—are independent, or additive. This suggests, therefore, that work should be structured to arouse intrinsic motivation and also that workers should be rewarded extrinsically (and contingently) for doing well. It now seems appropriate to examine this assumption of the additivity of the effects of the two kinds of rewards. Are piece-rate payments or other extrinsic reward systems which tie rewards (especially money) to performance com-

patible with participative management, which focuses on intrinsic motivation? That is, will a person's intrinsic motivation to do a job remain unaffected by external rewards?

Two recent papers (Deci, 1971, 1972) have presented evidence that when money was paid to subjects for performing intrinsically motivated activities, and when that money was made contingent on their performance, they were less intrinsically motivated after the experience with money than were subjects who performed the same activity for no pay.

The first paper (Deci, 1971) presents two studies which investigated the effects of contingent payments on intrinsic motivation. The first was a laboratory study in which each subject participated in three one-hour sessions of puzzle-solving. Pilot testing substantiated that the puzzles were indeed intrinsically motivating. Both the experimental group and control group did the same activity (viz., attempt to solve four puzzles) during each of the three sessions. The only difference between the two groups was that the experimental subjects were paid one dollar per puzzle solved during the second session. During each of the three sessions, subjects were left alone in the experimental room for an eight minute "free choice" period. They could work on the puzzles, read magazines, or do whatever they liked, so it was reasoned that if they worked on puzzles when there was no apparent reward and when there were other things to do then they must be intrinsically motivated to perform the activity. Comparisons were then made between the experimental and control groups on the amount of free choice time they spent working on the puzzles in the first and third sessions. The results indicated that there was a significant decrease in the experimental subjects' intrinsic motivation from sessions I to III relative to the controls' intrinsic motivation. In other words, the experimental subjects had lost intrinsic motivation (i.e., they spent less free choice time working on the puzzles) as a result of their experience of doing the activity for pay.

These results were replicated in a controlled field experiment (Deci, 1971) which took place over a 16-week period in a college newspaper. Subjects were staff members who wrote headlines for the college newspaper and who were unaware that an experiment was being performed. As in the laboratory study, subjects who were paid for their performance ($.50 per headline written) showed a decrease in intrinsic motivation which was evident as much as eight weeks after the payments had stopped.

The results were again replicated in another laboratory study (Deci, 1972) using a somewhat different experimental paradigm. This general paradigm will now be described in some detail since it was used in several

investigations, including one which provided data that will be presented for the first time in this paper.

GENERAL PARADIGM

Each subject participated for a one-hour session during which he spent most of his time working on a puzzle called Soma. The puzzle is composed of seven different pieces, each of which is made to look like it is three or four one-inch cubes. The pieces can be fitted together to form millions of configurations—only a few of which were used for these experiments.

During a session, the subject was asked to reproduce either three or four configurations which had been drawn on paper for him. The time to complete each configuration was measured with a stop watch, and if a subject were unable to do a configuration within ten minutes he was stopped and told how to do it. This let him know that all the configurations were possible.

When a subject reported to the waiting room he was met by the first experimenter who took him to the experimental room where he was seated at a table. The experimenter then left through a door at the back of the experimental room so that he would be outside the room observing through a one-way window. The subject knew of course that the experimenter was observing him, and he communicated with the experimenter through an intercom.

On the table in front of the subject were the seven puzzle pieces—each with a number on it so that the experimenter could refer to it over the intercom. To the left of the subject was a stack of the configurations that he would be asked to reproduce. To his right were three other configurations. The top one of the three was a sample; the other two will be discussed below. On another table to the subject's right were the microphone, speaker, recent issues of three magazines (*New Yorker, Time,* and *Playboy*), and an ashtray.

When the experimenter got to his position behind the one-way window, he read the instructions to the subject. The subjects were told that this was a study of certain problem-solving concepts, and that they would be asked to solve either three or four puzzle problems (depending on which experiment it was). After the instructions were read, the experimenter told the subject to look at the sample to his right, told him how it could be solved, and allowed about a minute for him to manipulate the pieces and solve it. The subject then worked on the puzzles in turn.

In each of the experiments, the experimental manipulation was made during this puzzle-solving period. Subjects were in one of the following conditions: they were rewarded with money, either contingently or non-

contingently; they were threatened with punishment for poor performance; they were given either positive or negative feedback about their performance; or they were control subjects who received no reinforcements, either positive or negative.

To obtain the dependent measure of motivation, the experimenter left his position for a period of eight minutes following the puzzle solving. The pretext was as follows: When a subject had completed the four puzzles, the experimenter said that he had done all the problem solving which he had to do, but there was one more thing which he would be asked to do, and that was to complete a short questionnaire. Since it was an experiment in problem solving, the subject would be asked a few questions about the way he had solved the puzzles. However, there were four different sets of questions, only one of which would be the most appropriate for this subject and that would be determined by how he had done on the puzzles. To select the appropriate set of questions, data from the session would be fed into a computer through a teletype. To do this, the experimenter would have to leave for a short time, five to ten minutes. The subject was told that he could do anything that he liked during that time, but he was asked to stay in the room. The experimenter left his position and entered the experimental room through the back door and exited through the front door. He then climbed a small set of steps outside the room and left the lab area through a door at the top of the stairs. The subject still in the experimental room could hear him climb the stairs and open and close the door.

As the first experimenter left the room, he signalled to a second experimenter to go to the outside of the one-way window to observe the subject. The second experimenter got to his position behind the one-way window through a different door which the subjects did not know existed, and there was no indication that the subjects suspected they were being observed during this "free-choice" period.

Hence, the subject was alone in the room and was unaware that he was being observed, so he was free to work on the puzzles, read magazines, or do anything he liked. Intrinsic motivation to perform the task was assumed to be reflected in the amount of time out of the eight minutes which he spent working on the puzzles. It was reasoned that if he worked on the puzzles during this free-choice time when he could do other things, then he must be intrinsically motivated to do the activity. The amount of time out of the eight minutes which the subject spent working on the puzzle was determined by the second experimenter who used a stop watch to record the time. The second experimenter was blind to the condition and to the hypotheses of the experiments.

Since any subject who was unable to do a configuration within the ten

minutes allowed was told the solution and allowed to do it, the possibility that the Zeigarnik (1927) effect would influence whether or not he worked on the puzzle in the eight-minute free choice period was minimized.

The configurations whose drawings were in the pile to his right under the sample during the entire experiment were impossible ones to do. This precluded the possibility that a subject would finish a configuration during the free-choice period and have that be a causal factor in determining whether or not he continued working on the puzzle.

After eight minutes, the first experimenter returned to the room and asked the subjects to complete the questionnaire.

RESULTS AND THEORY

As mentioned earlier, using this paradigm Deci (1972) replicated the finding that subjects who were paid one dollar per puzzle solved showed a decrease in intrinsic motivation.

Further, Deci and Cascio (1972) reported that when subjects were threatened with punishment for poor performance, their intrinsic motivation also decreased. These experimental subjects were told that if they were unable to solve a puzzle within the ten minutes allotted, a buzzer would sound indicating that their time was up. They were then given a brief exposure (about one second) to the buzzer so they would know that it was truly noxious. Hence they were performing because they were intrinsically motivated and because good performance would allow them to avoid a punishment (the buzzer). The results indicated that those who solved puzzles under threat of punishment were less intrinsically motivated during the free-choice period than subjects who solved the same puzzles with no threat of punishment.

Deci has suggested a cognitive evaluation theory to explain this change in intrinsic motivation. It concentrates on a person's perception of why he is doing the activity. When he is intrinsically motivated, the perceived locus of causality (Heider, 1958) of that behavior is within himself. He is doing it because it provides him with some sort of internal satisfaction. However, when he performs the activity for external reinforcements such as money, he comes to perceive that he is doing it for the money. The perceived locus of causality changes from within himself to the environment; that is, he cognitively reevaluates the activity as one which he does because it provides him with external rewards. In other words, the first process by which intrinsic motivation can be affected is a change in perceived locus of causality.

On the other hand, Deci (1971, 1972) has reported that verbal reinforcements do not decrease intrinsic motivation; in fact, they appear to enhance it. In the Deci (1971) study, the three-session paradigm described

earlier was used. In this study, the experimental subjects were rewarded with verbal statements such as, "That's very good, it's the fastest anyone has solved this one," each time they solved a puzzle. The control group received no rewards. The results indicated that subjects who received verbal rewards were more intrinsically motivated following that experience than subjects who received no rewards. These results were replicated for males (Deci, 1972) using the one-session methodology described above.

The essential difference between money and verbal rewards is that verbal rewards may not be phenomenologically distinguishable from the feelings of satisfaction which the person gets for doing the activity. Hence, the verbal reinforcements strengthen his intrinsic motivation because they provide additional positive value which becomes associated with the activity; so the subject is more likely to perform the activity in the absence of external rewards. According to the cognitive evaluation theory then, the second process by which intrinsic motivation can be affected is that of feedback. Positive feedback increases the total positive value properties (Koch, 1956) associated with the activity by strengthening the person's sense of competence and self-determination. This makes him more intrinsically motivated to perform the activity.

In another experiment using the one-session paradigm, Deci and Cascio (1972) showed that negative feedback resulting from bad performance on an intrinsically motivated activity caused a decrease in intrinsic motivation. According to the cognitive evaluation theory, the psychological process underlying this decrease is the same as the process by which positive feedback enhanced intrinsic motivation. The negative value associated with the failure and the resulting threat to the person's sense of competence offsets some of the positive value associated with the activity, thereby causing a decrease in intrinsic motivation.

It was suggested (Deci & Cascio, 1972) that the relation between feedback and intrinsic motivation may not be monotonic. With positive feedback, if there is too much feedback, the person may become dependent on it just as he becomes dependent on money, and this would lead to a decrease in intrinsic motivation. Further, too much positive feedback could cause the person to perceive that he is being ingratiated (Jones, 1964), and this would also lead to a decrease in intrinsic motivation. With negative feedback, a very small amount could serve as a challenge to the person, making him more intrinsically motivated. However, when there is enough negative feedback to threaten his sense of competence and self-determination, it will lead to a decrease in intrinsic motivation.

Interpreting these results in relation to theories of work motivation, it seems clear that the effects of intrinsic motivation and extrinsic motivation are not additive. While extrinsic rewards such as money can certainly

motivate behavior, they appear to be doing so at the expense of intrinsic motivation. As a result, contingency payment systems do not appear to be compatible with participative management systems. Likert (1967, p. 113) has stated, "Basing the compensation of a manager of a profit center largely upon his performance has much to commend it . . . ." While this could certainly motivate the manager, it could also interfer with his intrinsic motivation, which is an integral part of Likert's System 4 management.

Given these results, it becomes interesting to ask whether it is the money *per se*, or the money administered contingently which causes the decrease in intrinsic motivation. The next experiment was designed to investigate that question. Does money affect intrinsic motivation when it is administered for an activity in a way that is not contingent upon performance?

The general paradigm employed in this study was the one-session paradigm described in detail above. The subjects in the experimental group were told that they would be paid $2 for participating in the experiment since there were research funds available for paying subjects, and they would receive the money in cash at the end of the experiment. The control subjects did exactly the same thing as the experimental subjects except that there was no mention of money to the controls.

The control condition in this experiment was identical to that in the Deci (1972) experiment. The experimental condition was also the same as the "money only" condition in the previous experiment except that in the previous experiment subjects were paid $1 for each puzzle they solved (out of four) whereas in this experiment each subject received $2 regardless of performance. The critical difference then is that the money paid to experimental subjects in this experiment is not contingent on performance whereas it was in the previous study. The control groups in the two experiments were treated identically, although the experimenter was different in the two experiments.

Table 1 presents the experimental data. Subjects in the control condi-

TABLE 1
NUMBER OF SECONDS SPENT BY EXPERIMENTAL AND CONTROL SUBJECTS WORKING ON THE PUZZLES DURING THE EIGHT-MINUTE "FREE-CHOICE" PERIOD

	Control	Experimental
Noncontingent payment study	190.2 $n = 16$	192.8 $n = 24$
Contingent payment study, Deci (1972)	208.4 $n = 16$	108.6 $n = 16$

TABLE 2
A SUMMARY OF THE EFFECTS OF VARIOUS EXTERNAL REWARDS AND CONTROLS ON INTRINSIC MOTIVATION

External reward or control	Effect on intrinsic motivation
Contingent monetary payments	Decrease
Noncontingent monetary payments	No change
Threats of punishment	Decrease
Positive feedback	Increase
Negative feedback	Decrease

tion who received no money for solving puzzles spent an average of 190.2 seconds out of the 480 seconds of free-choice time working on the puzzles, whereas the experimental subjects who received $2 for participating spent an average of 192.8 seconds. Clearly there is no difference. On the other hand, in the contingent-payment experiment (Deci, 1972) there was a significant difference. The control subjects spent an average of 208.4 seconds while the experimental subjects, who were paid $1 for each puzzle they solved, spent only 108.6 seconds.

The small difference between the control groups in the two experiments does not even approach significance ($t = .22$) and may be due to chance or to the fact that a different experimenter conducted the two studies.

When payments were made contingent upon performance, the subjects' intrinsic motivation decreased, whereas when payments were not contingent upon performance, intrinsic motivation did not decrease. These findings are consistent with the cognitive evaluation theory. When money is contingent, the subjects are more likely to perceive that they are performing for the money. Their doing the activity is instrumental to their receiving rewards, so they perceive the rewards as the reason for the activity. On the other hand, when rewards are noncontingent, performance is not tied directly to rewards. Consequently, the subjects are less likely to perceive that the rewards are the reason for their performance.

In summation. The experimental results give support to the cognitive evaluation theory which proposes that intrinsic motivation may be affected either through the process of change in perceived locus of causality or the process of feedback. These experimental results are summarized in Table 2.

DISCUSSION

To understand the importance of these results for organizations, it is necessary to distinguish between keeping a person on the job and motivating him to perform effectively on that job. To attract and keep a per-

son in an organization, it is necessary to satisfy his needs (Ross & Zander, 1957). He will have to be paid a competitive salary and given other comforts. However, satisfying a worker does not guarantee that he will be motivated to perform well on the job (Brayfield & Crockett, 1955; Kahn, 1960; Vroom, 1964).

Let us, therefore, consider how payments and intrinsic factors relate to satisfaction on the one hand and effective performance on the other. Paying workers is necessary to attract them to jobs and keep them satisfied with those jobs. However, in order to use money as a motivator of performance, the performance has to be perceived by the worker as being instrumental to his receiving the money (Vroom, 1964; Lawler, 1971). This is generally accomplished by making pay contingent upon performance. In other words, it is not the money per se which motivates performance but rather it is the way that it is administered. To use money as an extrinsic motivator (or controller) of behavior it has to be administered contingently. However, we have seen that not only are there many difficulties in making such a system work effectively, but also such a system decreases intrinsic motivation.

On the other hand, a system for motivating employees such as participative management which—through participation and job enlargement—attempts to arouse intrinsic motivation, appears to motivate effective performance at the same time that it satisfies higher-order needs. In fact, Lawler and Porter (1967) show that effective performance leads to satisfaction, although there may be individual differences in this (Hackman & Lawler, 1971).

Since advocates of participative management stress the importance of intrinsic motivation, the earlier experimental results (Deci, 1971, 1972) which demonstrate that money decreases intrinsic motivation have led some antagonists to the conclusion that workers should not be paid. Clearly, such a prescription is absurd for anyone interested in more than vacant jobs.

The importance of the present noncontingent payment study is that money does not decrease intrinsic motivation if it is paid noncontingently. It is possible to pay workers and still have them intrinsically motivated. Hence, the writer favors the prescription that we concentrate on structuring situations and jobs to arouse intrinsic motivation, rather than trying to structure piece-rate and other contingency payment schemes. Workers would be intrinsically motivated and would seek to satisfy their higher-order needs through effective performance. The noncontingent payments (or salaries) would help to satisfy the workers and keep them on the job especially if the pay were equitable (Adams, 1965; Pritchard, 1969). At the same time the money would help keep the higher-order needs

salient by satisfying the lower ones (Maslow, 1943; Alderfer, 1971), and in so doing it would not decrease intrinsic motivation.

REFERENCES

ADAMS, J. S. Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology,* Vol. II, New York: Academic Press, 1965, pp. 267–299.

ALDERFER, C. P. *Human needs in organizational settings.* New York: Free Press, 1971.

ARGYRIS, C. *Personality and organization.* New York: Harper, 1957.

ATKINSON, J. W. *An introduction to motivation.* Princeton, N. J.: Van Nostrand, 1964.

BRAYFIELD, A. H., & CROCKETT, W. H. Employee attitudes and employee performance. *Psychological Bulletin,* 1955, **52,** 396–424.

DE CHARMS, R. *Personal causation: The internal affective determinants of behavior.* New York: Academic Press, 1968.

DECI, E. L. The effects of externally mediated rewards on intrinsic motivation. *Journal of Personality and Social Psychology,* 1971, **18,** 105–115.

DECI, E. L. Intrinsic motivation, extrinsic reinforcement, and inequity. *Journal of Personality and Social Psychology,* 1972, in press.

DECI, E. L., & CASCIO, W. F. Changes in intrinsic motivation as a function of negative feedback and threats. Paper presented at the Eastern Psychological Association Convention, April, 1972.

HACKMAN, J. R., & LAWLER, E. E. Employee reactions to job characteristics. *Journal of Applied Psychology Monograph,* 1971, **55,** 259–286.

HEIDER, F. *The psychology of interpersonal relations.* New York: Wiley, 1958.

JONES, E. E. *Ingratiation.* New York: Appleton-Century-Crofts, 1964.

KAHN, R. L. Productivity and job satisfaction. *Personnel Psychology,* 1960, **13,** 275–287.

KOCH, S. Behavior as intrinsically regulated: Work notes towards a pre-theory of phenomena called "motivational." *Nebraska Symposium on Motivation.* Lincoln Neb.: Univ. of Nebraska Press, 1956, pp. 42–87.

KORNHAUSER, A. W. *Mental health of the industrial worker: A Detroit study.* New York: Wiley, 1965.

LAWLER, E. E. Job design and employee motivation. *Personnel Psychology,* 1969, **22,** 426–435.

LAWLER, E. E. *Pay and organizational effectiveness: A psychological view.* New York: McGraw–Hill, 1971.

LAWLER, E. E., & PORTER, L. W. The effect of performance on job satisfaction. *Industrial Relations,* 1967, **7,** 20–28.

LEAVITT, H. J. Unhuman organizations. *Harvard Business Review,* 1962, **40,** 90–98.

LIKERT, R. *New patterns of management.* New York: McGraw–Hill, 1961.

LIKERT, R. *The human organization.* New York: McGraw–Hill, 1967.

MARROW, A. J., BOWERS, D. G., & SEASHORE, S. E. *Management by participation.* New York: Harper, 1967.

MASLOW, A. H. A theory of human motivation. *Psychological Review,* 1943, **50,** 370–396.

MASLOW, A. H. *Eupsychian management.* Homewood, IL: Irwin–Dorsey, 1965.

MASLOW, A. H. *Motivation and personality* (2nd Ed.) New York: Harper & Row, 1970.

MCGREGOR, D. *The human side of enterprise.* New York: McGraw–Hill, 1960.

MORSE, N. C., & WEISS, R. S. The function and meaning of work and the job. *American Sociological Review,* 1955, **20,** 191–198.

MYERS, M. S. *Every employee a manager.* New York: McGraw–Hill, 1970.

PORTER, L. W., & LAWLER, E. E. *Managerial attitudes and performance.* Homewood, IL: Irwin–Dorsey, 1968.

PRITCHARD, R. D. Equity theory: A review and critique. *Organizational Behavior and Human Performance,* 1969, **4,** 176–211.

ROSS, I. C., & ZANDER, A. Need satisfaction and employee turnover. *Personnel Psychology,* 1957, **10,** 327–338.

TAYLOR, F. W. *Principles of scientific management.* New York: Harper, 1911.

THORNDIKE, E. L. *The fundamentals of learning.* New York: Teachers College, 1932.

TOLMON, E. C. *Purposive behavior in animals and men.* New York: Appleton-Century-Crofts, 1932.

VROOM, V. H. Ego-involvement, job satisfaction, and job performance. *Personnel Psychology,* 1962, **15,** 159–177.

VROOM, V. H. *Work and motivation.* New York: Wiley, 1964.

VROOM, V. H., & DECI, E. L. An overview of work motivation. In V. H. Vroom and E. L. Deci (Eds.), *Management and motivation.* Baltimore, MD: Penguin, 1970. Pp. 9–19.

WHITE, R. W. Motivation reconsidered: The concept of competence. *Psychological Review,* 1959, **66,** 297–333.

ZEIGARNIK, B. Das Behalten erledigter und unerledigter Handlungen. *Psychologische Forschung,* 1927, **9,** 1–85.

RECEIVED: September 23, 1971