Does Pay for Performance Increase or Decrease Perceived Self-Determination and Intrinsic Motivation?

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Laboratory and field studies examined the relationships of reward for high performance with perceived self-determination and intrinsic motivation. Study 1 found that pay for meeting a performance standard had positive effects on college students’ perceived self-determination and competence, expressed task enjoyment, and free time spent performing the task. Furthermore, reward’s incremental effect on expressed task enjoyment was mediated by perceived self-determination and competence. Study 2 established that perceived self-determination mediated positive relationships between employees’ performance-reward expectancy and perceived organizational support, positive mood at work, and job performance. Study 3 demonstrated that performance-reward expectancy was positively related to employees’ expressed interest in daily job activities, with this relationship being greater among employees having a high desire for control.

Individualistic views of human nature, embedded in humanist and social-cognitive theories of motivation, propose that persons pursue their unique potentialities and resist constraints on freedom of action. Jean Jacques Rousseau (1712–1778), an influential proponent of individualism, believed that openness to new experience and spontaneity in thought and action were required for self-actualization. Rousseau (1762/1974, 1782/1995) depicted the exploration of short-term whims and long-term avocations as fundamental to human development, and he strenuously objected to social restrictions on how people conduct their lives. Such accounts suppose an innate motive for autonomy or self-determination, involving “a sense of freedom to act or make choices; avoiding the feeling of being pressured, constrained, or coerced” (Ford, 1992, p. 89). Deci and Ryan’s (1985, 1987) cognitive evaluation theory (CET) elaborates these conceptions and incorporates a related assumption having far-reaching theoretical and empirical implications: Tangible reward is assumed to be an aversive form of social control that lessens perceived self-determination and thereby reduces enjoyment of activities for their own sake (intrinsic motivation).

Deci and Ryan (1987, p. 1025) stressed the motivational primacy of controlling whether and how activities are carried out:

When autonomous, people experience themselves as initiators of their own behavior; they select desired outcomes and choose how to achieve them. Regulation through choice is characterized by flexibility and the absence of pressure. By contrast, being controlled is characterized by greater rigidity and the experience of having to do what one is doing.

According to Deci and Ryan, perceived autonomy can be reduced by various means, including the requirement to achieve a performance objective. Moreover, being offered a reward for reaching a performance standard (performance-contingent reward) would produce a greater reduction of self-determination than being asked to achieve the standard without the promise of reward (Deci & Ryan, 1985, p. 77).

The effects of performance-contingent reward on perceived autonomy and intrinsic motivation have practical as well as theoretical importance. For example, the grades given to students are contingent on showing knowledge of the subject matter. In business, bonuses or wage increments may be given for improvements over past performance or for surpassing others’ performance. Of particular significance is the requirement of fulfilling a specific performance standard, as opposed to a vague, nonspecific performance objective (e.g., the instruction to do a good job or to do one’s best). The more explicit the required performance standard, according to CET, the greater should be the decrement in perceived autonomy (Deci & Ryan, 1985).

Despite the widespread use of performance-contingent rewards in everyday life and behavioral research and its important implications for CET, a search of the empirical literature revealed not one published study that investigated the effects of performance-contingent reward on perceived autonomy. Therefore, we examined the relationships of performance-contingent reward with self-determination and intrinsic motivation among college students who were presented a novel task and among employees engaged in their normal work activities.
Performance-Contingent Reward and Self-Determination

Deci and Ryan (1987, p. 1026) argued that “rewards tend to be experienced as controlling, which of course makes sense, as rewards are typically used to induce or pressure people to act in ways different from what they would do freely.” On this basis, rewards would reduce intrinsic motivation. Two studies examining the effects of tangible reward on perceived autonomy reported incremental effects rather than the decremental effect predicted by CET (Freedman & Phillips, 1985; Overkseld & Svartdal, 1998). These studies rewarded task participation or completion. CET predicts stronger decremental effects of reward on perceived autonomy when individuals are given a performance objective (Deci & Ryan, 1985, p. 77).

On the other hand, CET may correctly assume that the imposition of a performance standard reduces perceived autonomy and intrinsic motivation but incorrectly presume that reward further decreases perceived self-determination. Pryor (1985, p. 172) suggested that, “If we have information about how to get the environment to reinforce us, then we control our environment; we are no longer at its mercy... So subjects like to learn through reinforcement not for the obvious reason— to get food or other rewards—but because they actually get some control over what is happening.” Eisenberger and Cameron (1996) similarly suggested that when a previously unavailable reward is made contingent on meeting a specific criterion of performance, greater self-determination is perceived. We agree with Deci and Ryan (1987) that reward in everyday life is usually based on utilitarian considerations, being believed necessary to induce desired performance. However, we suggest that the utilitarian use of reward conveys not social control, but freedom of action. In our view, the promise or repeated use of reward conveys that (a) the person, group, or organization giving the reward lacks control over the performance of the potential reward recipient, and (b) the potential recipient can, if he or she so wishes, decline the reward and not act as requested. Thus, performance-contingent reward might increase self-determination rather than reducing it as supposed by CET.

The simple act of being asked to perform a task may reduce perceived self-determination (Deci & Ryan, 1985). For example, college students may perceive their required experimental participation as coercive; the establishment of a performance standard may be experienced as an even greater infringement on freedom. In a similar manner, the daily requirements of one’s job, including performance objectives, may reduce perceived autonomy. We suggest that the expectation of reward partially counters any loss of autonomy produced by the imposition of tasks and performance objectives.

Ascertaining the effects of performance-contingent reward on perceived self-determination and intrinsic motivation requires a control condition receiving the same performance objective and favorable performance feedback as received by the rewarded group; otherwise, the effects of reward would be confounded with the effects of the performance objective and performance feedback. Hence, Study 1 compared the effects of performance-contingent reward with a control condition involving an equivalent performance objective and favorable performance feedback. The primary hypothesis of Study 1 was that the offer of reward for meeting a performance standard would produce greater perceived self-determination than being given the equivalent performance standard and favorable performance feedback without a reward.

CET assumes that perceived autonomy is positively related to intrinsic motivation. Therefore, we predicted that perceived self-determination would mediate a positive relationship between performance-contingent reward and intrinsic motivation. We used causal modeling in the first study to examine the relationships among performance-contingent reward, perceived self-determination, and intrinsic motivation.

Performance-Contingent Reward and Competence

We wished to differentiate perceived autonomy from perceived competence as possible mediators of the relationship between reward and intrinsic motivation. Deci and Ryan (1985, p. 63) stated that surpassing a performance criterion or receiving favorable performance feedback leads to perceived competence that, in turn, increases intrinsic motivation. Reward was not assumed to provide competence information beyond that afforded by favorable performance feedback. In contrast to this view, several researchers have suggested that reward has symbolic properties related to perceived competence (Harackiewicz, Manderlink, & Sansone, 1984; Harackiewicz & Sansone, 1991; Porter & Lawler, 1968; Sansone & Harackiewicz, 1998; Korniol & Ross, 1976) or self-efficacy (Bandura, 1997; Zimmerman, 1985).

In Harackiewicz’s model of intrinsic motivation (Harackiewicz & Sansone, 1991), performance-contingent reward causes individuals to care more about doing the task well (competence valuation) than does the receipt of a performance objective with favorable performance feedback without a reward. Consistent with this approach, Harackiewicz et al. (1984) found that performance-contingent reward produced greater intrinsic motivation than the same performance objective and favorable performance feedback without reward. More generally, competence valuation has been found to mediate relationships of contextual variables (e.g., competition, reward) and personality (achievement orientation) with intrinsic motivation (e.g., Harackiewicz, Abrahams, & Wageman, 1987; Harackiewicz & Manderlink, 1984).

A second symbolic function of performance-contingent reward may involve the perception of increased competence or self-efficacy (Bandura, 1997; Rosenfield, Folger, & Adelman, 1980). Bandura (1997, p. 221) described the possibility that “rewarding quality of performance enhances perceived competence which, in turn, predicts intrinsic interest.” Because the effects of performance-contingent reward on competence valuation are well established (e.g., Harackiewicz & Sansone, 1991), we turned to the issue of whether performance-contingent reward increases perceived competence.

Two studies found no greater perceived task competence (how well the participants believed they had performed the task) as a result of performance-contingent reward as compared with a control condition involving an equivalent performance standard and favorable performance feedback (Harackiewicz & Manderlink, 1984; Harackiewicz et al., 1984). These two studies used a normative standard of performance wherein participants were led to believe that the receipt of reward depended on surpassing the prior performance of most others. Because people often derive beliefs about their competence by comparing their performance with others (Festinger, 1954; Suls & Wills, 1991), the information that one’s performance has surpassed most of a reference group may
itself strongly indicate ability. Thus, reward in the normative situation might have provided little indication of competence beyond that already afforded by favorable performance feedback.

Reward for meeting an absolute performance standard (e.g., solving a particular number of problems), as opposed to a normative performance standard, might have a stronger effect on perceived competence. In Study 1, we compared the effects of reward for meeting normative versus absolute standards of performance on perceived competence. Because surpassing a performance standard may itself provide an indication of competence (Deci & Ryan, 1985), we tested this hypothesis with a control condition involving the same performance standard and favorable performance feedback.

Reward and Self-Determination at Work

Porter and Lawler (1968) maintained that reward repeatedly received for high performance or the promise of future reward for high performance produces performance–reward expectancies. Many tasks at school or work are performed regularly and are rewarded repeatedly, leading to expectancies of reward for high performance. CET assumes that such expectation of future reward, like the memory of past reward, reduces perceived autonomy and intrinsic motivation (Deci & Ryan, 1985, pp. 201–206).

According to CET, employees’ expectancy of increased pay for high performance should be experienced as more controlling than pay determined by variables independent of performance, such as length of tenure in the organization. The greater the performance–reward expectancy, the greater should be the reduction of perceived autonomy and intrinsic motivation. On the other hand, we suggest that employees’ performance–reward expectancies increase perceived self-determination by conveying that (a) the organization has little control over the employee’s daily job performance beyond minimally acceptable levels, and (b) the employee has the opportunity to choose whether to pursue the reward by altering performance. Study 2 examined the relationship between employees’ performance–reward expectancies and perceived self-determination.

Changes in perceived self-determination, resulting from performance–reward expectancies, might influence a variety of work-related outcomes. Deci, Connell, and Ryan (1989) found that employees given opportunities for greater self-determination evaluated the organization more favorably. We suggest that the organization’s willingness to allow employees independence concerning how they carry out their jobs, conveyed by reward for high performance, might increase employees’ beliefs that the organization is committed to them.

Eisenberger, Huntington, Hutchison, and Sowa (1986) found that employees form global beliefs concerning the extent to which the organization values their contributions and cares about their well-being. Such perceived organizational support was influenced by policies, procedures, and decisions indicative of the organization’s concern with employee welfare and by the organization’s favorable evaluation of employee contributions (e.g., Eisenberger, Cummings, Armeli, & Lynch, 1997; Eisenberger et al., 1986). According to CET, such perceived organizational support should be lessened by performance–reward expectancies. We suppose, instead, that performance–reward expectancies increase perceived self-determination; moreover, employees may view the opportunity to carry out the job in their own way as an indication that the organization trusts their judgment, skills, and loyalty. Therefore, performance–reward expectancy should increase perceived autonomy, which, in turn, should increase perceived organizational support.

Changes in perceived self-determination resulting from performance–reward expectancies might influence employees’ mood at work. Watson, Clark, and Tellegen (1988) described positive mood as involving feelings of enthusiasm, excitement, and alertness. Mood changes dependent on the situation can be distinguished from a predisposition toward positive emotional experience (Watson et al., 1988). Performance–reward expectancies might influence positive mood partly through their effects on perceived autonomy. In the view of CET, low perceived self-determination resulting from strong performance–reward expectancies should lessen positive mood. On the other hand, if performance–reward expectancies were to increase perceived self-determination, as we suggest, this experience of greater freedom might enhance employees’ positive mood at work by fulfilling their basic desire to control their own behavior. We therefore examined the relationship between performance–reward expectancy and positive mood at work, as mediated by perceived autonomy.


Reward, Desire for Control, and Intrinsic Motivation

Burger and Cooper (1979) proposed that people differ systematically in their motivation to control events in their lives. Persons who scored high on a scale measuring desire for control preferred making their own decisions, rather than having decisions made for them, and took actions to avoid a potential loss of control (Burger, 1985, 1992). Burger (1992) noted that his use of the term control was very similar to Deci and Ryan’s (1985) definition of self-determination, and he argued that there are persisting individual differences in such motivation. Burger (1992, p. 96) suggested the effects of reward on perceived autonomy and intrinsic motivation should be stronger among persons with a strong desire for control. Consistent with this view, Thompson, Chaiken, and Hazelwood (1993) found that reward for taking part in an activity with no performance objective produced a greater decremental effect on intrinsic motivation among students with a strong desire for control.

In Study 3, we examined the possible moderating effect of desire for control on the relationship between performance–reward expectancy and intrinsic motivation. According to CET, the expectation of reward for high performance should produce a greater decrease of intrinsic motivation among employees having a strong desire for control than among employees having a low desire for
control. As an alternative, we predicted an incremental relationship between performance-reward expectancy and intrinsic motivation that should be stronger among employees with a high desire for control.

Study 1: Reward, Perceived Self-Determination and Competence, and Intrinsic Motivation

The first study examined the effects of performance-contingent reward on self-determination, perceived competence, and intrinsic motivation. Predictions of the present view, compared with CET, were as follows:

1. Reward for meeting a performance standard would produce greater perceived self-determination than the receipt of an equivalent performance standard and favorable performance feedback without a reward. In contrast, CET predicted a decremental effect.

2. Reward for meeting an absolute performance standard would increase perceived competence, with this effect being greater than with a normative performance standard. By comparison, CET assumed no effect of reward on perceived competence.

3. Performance-contingent reward would increase intrinsic motivation as assessed by expressed task enjoyment and free time spent performing the task following the elimination of reward. CET predicted a decremental effect.

4. Perceived self-determination and competence would mediate the effects of performance-contingent reward on expressed task enjoyment and free time spent performing the task. CET partially agreed, holding that perceived self-determination and competence should be positively related to expressed task enjoyment and free time on task.

College students were randomly assigned to one of four conditions produced by the factorial combination of two types of performance standards (normative vs. absolute) paired with the presence or absence of a reward contingency. All participants were told that their objective was to achieve a high level of performance by distinguishing subtle differences between pairs of similar cartoon drawings. Participants were asked to discover increasing numbers of perceptual differences as they progressed from one pair of drawings to the next. They were told that they would achieve a high level of performance if by their final trial they could find more differences than 80% of their classmates (normative standard) or could find more than three differences (absolute standard).

In the reward condition, participants were told they would receive a $3 payment for meeting the performance standard. After achieving criterion performance, all participants were told they had succeeded, and those in the reward condition were paid. Next, each participant was left alone for 5 min and allowed to look at more pairs of drawings or at general interest news magazines. The experimenter surreptitiously timed how long the student spent looking at the drawings. The experimenter then returned and gave the student a questionnaire concerning (a) the degree of choice he or she felt about whether to carry out the task, (b) his or her perceived competence in the task, and (c) the enjoyment he or she felt at carrying out the task.

Method

Participants and Materials

Participants were 435 college students enrolled in five large sections of a general introductory psychology course. Taking part in the study helped meet the course’s research participation requirement. Each participant was seated at a table facing a wall that had a one-way mirror covered with curtains separated to produce an unobtrusive 8-cm aperture. Curtains were similarly situated on an adjacent wall. On a chair next to the participant was a recent issue of each of two general interest news magazines (Time and Newsweek). On the participant’s table was a notebook containing 21 pairs of similar cartoon drawings, one pair to a page. The two drawings of each pair, differing in six details, originally appeared with the title “Hocus Focus” in nonlocal newspapers. For example, one pair of pictures featured a waiter in a restaurant holding a tray containing an assortment of foods and drinks. These two pictures differed in the shape of one bottle, the shape of the oval window leading to the chef’s station, and so forth. Previous use of the cartoons indicated considerable interest by college students (Eisenberger & Leonard, 1980; Eisenberger & Masterson, 1983; Eisenberger, Masterson, & McDermitt, 1982).

The questionnaire administered at the end of free time period asked the students to express their intrinsic motivation (“How enjoyable did you find the picture task?”) and self-determination (“How much choice did you have as to whether or not to carry out the picture task?”) on a 7-point Likert scale ranging from 1 (very little or not at all) to 7 (very much). Another question addressed the students’ perceived competence (“How poorly or well did you do on the picture task?”) on a 7-point Likert scale ranging from 1 (very poorly) to 7 (very well).

Procedure

The students were told that they were to find detailed differences between the cartoon drawings. All participants were seated with the notebook open to a sample pair of cartoon drawings and were told, “This task involves finding differences between drawings that look similar. Each of these drawings contains six differences. For example [experimenter pointed to sample pair of drawings], two of the differences in this drawing are the fire hydrant and the license plate present in the upper picture but not in the lower picture.”

Participants in the normative-standard, nonreward condition were then told:

If you reach the point at which I let you know you found more differences in a drawing than 80% of your classmates, you will have achieved an excellent level of performance. Remember, as you view one drawing after another, you will be asked to increase the number of differences you find. If you reach the point at which I let you know you found more differences in a drawing than 80% of your classmates, you will have achieved an excellent level of performance.

Participants in the absolute-standard, nonreward condition were told:

If you reach the point at which you find four differences in a drawing, you will have achieved an excellent level of performance. Remember, as you view one drawing after another, you will be asked to increase the number of differences you find. If you reach the point where you can find four differences, you will have achieved an excellent level of performance.

For each participant in the normative-standard, reward condition and the absolute-standard, reward condition, three $1 bills had been laid out on the left side of the table. The money was kept in plain view in order to make the reward salient so that its incremental or decremental effect on perceived self-determination could be more readily demonstrated. Each rewarded group received the same directions as its corresponding nonreward group, with the additional phrase “for which you will receive a reward of $3” stated immediately following each use of the phrase “excellent level of performance.”

The participants were asked to find one difference in the first pair of drawings, two in the second pair, three in the third pair, and four in the fourth pair, at which point they were informed that they had met the performance standard. Participants who failed to find the required number
of differences in a given pair of pictures were asked to find that number of differences in the subsequent pair of pictures. Once this was achieved, the required number of identifications was increased by one on the subsequent pair. In this way, every participant met the performance standard. After completing a pair of drawings in which they identified four differences, students in the normative-standard condition were told, "You surpassed 80% of your classmates, which is an excellent level of performance." Students in the absolute-standard condition were told, "You found four differences, which is an excellent level of performance." In the reward condition, the phrase was added "so here is your reward of $3," and the participants were paid. The experimenter next told all participants, "I have to go get a questionnaire for you to fill out and will be away for 5 or 6 minutes. While you are waiting, you can look at some more drawings or those magazines [experimenter pointed to the two general interest news magazines] if you like."

The experimenter then left through the hallway door, entered the adjacent room, and measured the time the participant spent looking at the drawings during the 5-min free-time period. At the end of the 5-min interval, the experimenter reentered the room and administered the questionnaire.

Results

All statistical tests are two-tailed. We first carried out 2 (reward vs. nonreward) × 2 (normative vs. absolute performance standard) factorial analyses of variance on expressed task enjoyment, free time spent performing the task, perceived self-determination, and perceived competence. There were reliable main effects of reward on self-determination, task enjoyment, and free time. Reward produced greater perceived self-determination than nonreward (respective Ms = 5.73 and 5.15), F(1, 431) = 10.6, p < .001; greater expressed task enjoyment (respective Ms = 5.14 and 4.69), F(1, 431) = 8.60, p < .005; and greater free time spent performing the task (respective Ms = 159.5 and 128.2 seconds), F(1, 431) = 6.58, p < .01. Reward did not have a reliable main effect on perceived competence, F(1, 431) = 2.96; however, perceived competence was influenced by the type of performance standard, F(1, 431) = 8.31, p < .005, and the interaction between reward and type of performance standard, F(1, 431) = 5.16, p < .05. Simple effects tests indicated that, with an absolute performance standard, reward increased perceived competence (respective Ms for nonreward and reward = 5.72 and 6.26), t(431) = 2.75, p < .01, and that reward did not increase perceived competence with a normative performance standard (respective Ms = 6.12 and 6.19), t(431) = .50.

Next, we conducted a path analysis to test the mediating effects of self-determination and perceived competence on the relationship between reward and the two criterion variables (free time and task enjoyment). We used AMOS software (Arbuckle, 1996) and maximum likelihood estimation to calculate the model. Because we were not interested in the causal relationships between perceived self-determination and perceived competence or between expressed task enjoyment and free time, the disturbance terms between these two pairs of variables were left free to vary (e.g., Frone, Russell, & Cooper, 1992). As shown in Figure 1, reward had reliable incremental effects on perceived self-determination, task enjoyment, and free time but not on perceived competence. Perceived self-determination and competence, in turn, affected task enjoyment but not free time.

The reliable relationships between reward and perceived self-determination and between self-determination and task enjoyment allowed the possibility that self-determination partially mediated the relationship between reward and task enjoyment. We assessed partial mediation by calculating the effect of the independent variable on the mediator, multiplying this by the effect of the mediator on the dependent variable, and assessing the statistical significance of the product term (Kenny, Kashy, & Bolger, 1998, p. 260). Kenny et al. noted that this way of calculating partial mediation is logically and mathematically equivalent to the other major way of calculating partial mediation, namely, the determination of how much the effect of the independent variable on the dependent variable is reduced when the presumptive mediating variable is added to the regression equation. We used the product

![Figure 1](image-url)  
*Figure 1. Study 1 path analysis of the effects of performance-contingent reward on perceived self-determination, perceived competence, expressed task enjoyment, and free time spent performing the task. *p < .05. **p < .01.
PAY AND SELF-DETERMINATION

The regression method with path analysis, and we subsequently used the regression method when not using path analysis.

Perceived self-determination reliably mediated the effect of reward on task enjoyment ($\beta = .084$, $SE = .0348$, $Z = 2.43$, $p < .05$). In contrast, because the relationship between self-determination and free time was unreliable, self-determination did not mediate the effect of reward on free time. Although the main effect of reward on perceived competence was unreliable, one should recall that there was a reliable effect of reward on perceived competence among employees given an absolute performance standard. Therefore, we carried out additional analyses concerning the possible mediating effect of perceived competence on the relationship between reward for meeting the absolute standard and the dependent variables (task enjoyment and free time). Regression analyses showed that among participants receiving reward with the absolute performance standard, perceived competence was reliably related to task enjoyment ($\beta = .166$, $F(1, 221) = 6.25$, $p = .01$), but not free time ($\beta = .0520$, $F(1, 221) = .60$. This finding allowed the possibility that perceived competence mediated the relationship between the absolute performance standard of reward and task enjoyment; thus, we carried out an additional hierarchical regression analysis on task enjoyment to assess the reliability of the potential mediation effect (Baron & Kenny, 1986, p. 1177). As shown in Table 1, reward was reliably related to task enjoyment, and this relationship was weakened when perceived competence was entered into the equation ($\beta$ changed from .17 to .14; for this change, $\beta = .0493$, $SE = .0264$, $Z = 1.87$, $p < .06$). Because this effect was only marginally significant, caution is advised for our conclusion that perceived competence mediated part of the relationship between reward for meeting the absolute performance standard and task enjoyment.

**Discussion**

Performance-contingent reward increased students’ subsequent expression of task enjoyment and free time spent performing the task as compared with the receipt of an equivalent performance standard and favorable performance feedback. The large sample size and high reliability of these effects lend confidence to the findings. Using meta-analytic techniques, the results can be combined with those of prior intrinsic studies identified by Eisenberger and Cameron (1998) as (a) setting an explicit standard of performance and (b) providing success feedback for both a rewarded group and an unrewarded control group. The meta-analysis of these studies (listed in the References section) and including the present data indicates that performance-contingent reward has a highly reliable incremental effect on both expressed task enjoyment ($d = .27$, no. of studies = 8, no. of participants = 841, $Z = 3.95$, $p < .001$) and free time spent performing the task ($d = .25$, no. of studies = 5, no. of participants = 673, $Z = 3.17$, $p < .003$). These findings suggest that, contrary to CET, reward for high performance has incremental effects on intrinsic motivation.

Performance-contingent reward increased students’ perception that they were free to choose whether to carry out the assigned task. This finding is inconsistent with the assumption of CET that performance-contingent reward is experienced as an aversive form of social control that reduces perceived autonomy. Instead, the results support the present view that performance-contingent reward increases perceived self-determination by conveying that the person, group, or organization giving the reward has little control over the potential reward recipient; the potential recipient therefore feels free to decide whether to pursue the reward by attempting to attain the performance standard. However, the incremental effects of perceived self-determination and competence on expressed task enjoyment support the theory (Deci & Ryan, 1985). Causal modeling indicated that, in accord with CET, perceived autonomy and perceived competence had independent positive effects on task enjoyment.

As predicted, reward for meeting an absolute performance standard had a greater incremental effect on perceived competence than did reward for meeting a normative performance standard. This result suggests that reward indicates competence when such information is not provided by the knowledge that one has outperformed others.

In contrast to the case with expressed task enjoyment, perceived high autonomy and competence did not increase the free time spent performing the task. Our single-item indicators of perceived self-determination and perceived competence had the drawback that one cannot assess the reliability of these measures. Unreliable measures underestimate the true relationship between the underlying variables that they represent. Therefore, the true relationship of perceived autonomy and perceived competence with the free-time measure of intrinsic motivation may be larger than observed. Furthermore, part of the incremental effect of performance contingent reward on intrinsic motivation may result from processes unrelated to increased perceived self-determination and increased perceived competence. For example, as previously noted, Harackiewicz and her associates found that an increased concern with being competent mediates the effects of performance-contingent reward on intrinsic motivation (e.g., Harackiewicz et al., 1987; Harackiewicz & Manderlink, 1984).

Table 1

<table>
<thead>
<tr>
<th>Step and variable</th>
<th>$B$</th>
<th>$SEB$</th>
<th>$\beta$</th>
<th>$\Delta R^2$</th>
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<tr>
<td>Reward</td>
<td>.28</td>
<td>.11</td>
<td>.17**</td>
<td>.03*</td>
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<td>Step 2</td>
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<tr>
<td>Reward</td>
<td>.23</td>
<td>.11</td>
<td>.14*</td>
<td>.02*</td>
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<tr>
<td>Perceived competence</td>
<td>.24</td>
<td>.08</td>
<td>.18**</td>
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</table>

Note. Task enjoyment: Final model $F(2, 220) = 7.36$, $p < .01$; total $R^2 = .06$, $p < .01$.

* $p < .05$. ** $p < .01$.

**Study 2: Reward and Self-Determination at Work**

The second study examined how expected reward for high performance in usual job activities affects employees’ perceived autonomy and related outcomes. We predicted that expected reward for high performance would increase perceived autonomy. CET, in contrast, predicted that performance–reward expectancy would reduce perceived autonomy. Our view and CET both agree that perceived self-determination should be positively related to perceived organizational support, mood, and job performance.
We chose to assess expectations concerning pay as a salient form of tangible reward related to that used in Study 1. We surveyed employees of a chain of large discount electronics and appliance stores about their expectations that high job performance would bring increased pay, their perceived autonomy, and their perceived organizational support and mood while working. In addition, supervisors rated the performance of each employee. We used several covariates (amount of pay, length of tenure in the organization, and frequency of performance feedback) to control for alternative interpretations of the relationship between performance–reward expectancy and self-determination and between self-determination and perceived organizational support, mood, and performance.

**Method**

**Sample and Procedure**

We administered the survey to 348 employees at nine of the organization’s sites located in the northeastern United States. Forty-two percent of the sample were hourly-paid sales-support employees (e.g., cashiers, clerks, stockers); 34% were hourly-paid salespeople; 20% were salaried sales-support employees; and 4% were salaried salespeople. The mean tenure of these employees was 37.2 months (SD = 37 months), and all had worked for the organization for at least 6 months. Thirty-two percent were women. Using a conference room at each site, employees completed the survey during their regularly scheduled working hours. In this organization, bonuses and pay raises were given for superior performance. To encourage candor, we gave employees verbal and written assurances that their individual responses would be kept confidential and that only group data would be reported to the organization. The surveys were distributed and collected by the investigators in sealed envelopes. Three hundred and twenty-four employees (93%) returned completed questionnaires.

We had each employee’s supervisor rate the employee’s performance using an evaluation scale that we supplied. The supervisors completed these evaluations privately during regular work hours within 1 week following the employee’s completion of the survey. Supervisors received the same guarantees of confidentiality given the participants. In an ideal situation, each supervisor would rate a single employee so as to ensure independence of observations. Our number of subordinates per supervisor (n = 2.6, SD = 1.9, Min = 2, mode = 1, range = 8) was less than in the great majority of organizational studies assessing the relationship between employee attitudes or beliefs and supervisors’ evaluations of performance.

**Measures**

**Covariates.** We obtained information from company records about each employee’s annual earnings (converted to an hourly rate) and number of months employed by the organization. Frequency of performance feedback was obtained from an item taken from Hackman and Oldham’s (1975) Job Diagnostic Survey that was included in the questionnaire administered to the employees: Employees rated the statement “My supervisor on the job almost never gives me any feedback about how well I am doing on my job” on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

**Performance–reward expectancy.** To assess performance–reward expectancy, we asked employees to state the extent of their agreement with the statement, “If I perform well at ______—[name of organization], it leads to higher pay” (Sims, Szilagyi, & McKenney, 1976) on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree).

**Self-determination.** To measure self-determination, we asked employees to state their satisfaction with their “freedom to adopt my own approach to the job” (Ronen, Kraut, Lingoels, & Aranya, 1979) on a 5-point Likert scale ranging from 1 (not at all satisfied) to 5 (extremely satisfied).

**Perceived organizational support.** We used eight items from Eisenberger et al.’s (1986) short version of the Survey of Perceived Organizational Support—which were also used by Armeli, Eisenberger, Fasolo, & Lynch (1998)—to assess the extent to which employees perceived that the organization valued their contributions and cared about their well-being. Sample items include “My organization really cares about my well-being” and “My organization strongly considers my goals and values.” Respondents indicated their extent of agreement with each statement using a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Prior studies surveying a wide variety of occupations and organizations provided evidence for the high internal reliability and unidimensional nature of the survey (e.g., Eisenberger et al., 1986; Eisenberger, Fasolo, & Davis-LaMastro, 1990; Shore & Tetrick, 1991; Shore & Wayne, 1993; Settoon, Bennett, & Liden, 1996; Wayne, Shore, & Liden, 1997). Confirmatory factor analysis of the short version of the survey similarly indicated a unitary factor structure, and the items showed high internal reliability (Cronbach’s alpha of .90; Eisenberger et al., 1997).

**Mood.** Employees rated the extent to which three positive mood terms (active, enthusiastic, and energetic) characterized their feelings on an average day at work; the scale ranged from 1 (very little) to 5 (very much).

**Job performance.** Supervisors responded to eight descriptive items concerning employees’ standard job responsibilities by indicating the extent of their agreement with each statement on a 5-point Likert scale ranging from 1 (disagree) to 5 (very strongly agree). Supervisors were asked to compare actions of the employee with the average of other employees holding similar jobs. To obtain a broad range of standard job responsibilities, we used eight items adapted from Williams and Anderson (1991) and two items adapted from Smith, Organ, and Near (1983). The items are given in Table 2.

**Table 2**  
**Study 2 Factor Loadings for Job Performance Ratings**

<table>
<thead>
<tr>
<th>Statement</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. This employee performs tasks that are expected of him/her.</td>
<td>.84</td>
</tr>
<tr>
<td>2. This employee fulfills responsibilities specified in his/her job description.</td>
<td>.80</td>
</tr>
<tr>
<td>3. This employee works cooperatively with his or her supervisor.</td>
<td>.80</td>
</tr>
<tr>
<td>4. This employee adequately completes assigned duties.</td>
<td>.78</td>
</tr>
<tr>
<td>5. This employee’s attendance at work is above the norm.</td>
<td>.70</td>
</tr>
<tr>
<td>6. This employee exhibits punctuality in arriving at his/her work station on time after breaks.</td>
<td>.65</td>
</tr>
<tr>
<td>7. This employee neglects aspects of the job he/she is obligated to perform.</td>
<td>.63</td>
</tr>
<tr>
<td>8. This employee spends time in idle conversation.a</td>
<td>.61</td>
</tr>
<tr>
<td>9. This employee fails to perform essential duties.a</td>
<td>.58</td>
</tr>
<tr>
<td>10. This employee takes undeserved rest breaks.a</td>
<td>.53</td>
</tr>
</tbody>
</table>

**Note.** Items adapted from Williams and Anderson (1991), except Items 6 and 8, which were taken from Smith et al. (1983).  
Results

Reliabilities and Intercorrelations

The measures of perceived organizational support, mood, and performance showed acceptable levels of internal reliability (Cronbach’s alphas = .89, .80, and .87, respectively). We assessed the unidimensionality of each of these measures using principal-components analyses and scree tests (Tabachnick & Fidell, 1989, p. 635). For each measure, the items produced a single large break in the scree plot involving an eigenvalue greater than 1.0. The percentage of total variance explained by the single factor was 57% in the case of perceived organizational support, 72% for mood, and 49% for performance (see Table 2). Means, standard deviations, and intercorrelations among measures are displayed in Table 3. Of greatest interest, performance–reward expectancy was positively related to perceived self-determination; furthermore, both performance–reward expectancy and perceived self-determination were positively related to perceived organizational support, mood, and job performance.

Mediating Effects of Self-Determination

We used regression analyses to assess the mediating effects of self-determination on the positive relationships found between performance–reward expectancy and perceived organizational support, mood, and performance. To control for differences in pay, tenure, and performance feedback, we used these factors as covariates. We followed the statistical procedures suggested by Kenny et al. (1998, p. 260) to assess mediation.

The first hierarchical regression analysis tested the effects of performance–reward expectancy on self-determination, entering the three covariates (pay, tenure, and performance feedback) in the first step and adding performance–reward expectancy into the equation in the second step. In Step 1, the block of covariates accounted for a reliable amount of variance (ΔR² = .05, p < .01), with reliable individual incremental effects of pay rate (β = .125, p < .05) and performance feedback (β = .201, p < .01) on self-determination. In Step 2, the addition of performance–reward expectancy accounted for a reliable amount of variance (ΔR² = .05, p < .01), with performance–reward expectancy statistically significant (β = .220, p < .01). Therefore, performance–reward expectancy was reliably related to perceived autonomy beyond the effects of the covariates.

Next, hierarchical analyses examined the relationships of performance–reward expectancy and perceived autonomy with perceived organizational support, mood, and job performance (see Table 4). Step 1 regressed perceived organizational support, mood, and performance on the covariates. Step 2 added performance–reward expectancy, which had reliable incremental effects on perceived organizational support, mood, and performance. Step 3 added self-determination, which also had reliable effects on perceived organizational support, mood, and performance.

According to Kenny et al. (1998, p. 260), a reliable drop in the variance explained by performance–reward expectancy in Step 3 would indicate partial mediation. Consistent with Kenny et al.’s formula, we found that the amount of variance in perceived organizational support, mood, and performance that was due to performance–reward expectancy was reliably reduced by the addition of perceived autonomy (respectively, β = .0530, SE = .014, Z = 3.68, p < .01; β = .0138, SE = .006, Z = 2.37, p < .05; β = .0106, SE = .005; Z = 2.29, p < .05). Therefore, perceived autonomy partially mediated the positive relationships between performance–reward expectancies and perceived organizational support, positive mood, and performance at work.

Discussion

Employees with strong performance–reward expectancies showed an increased perception of self-determination concerning how they carried out their usual job activities. This relationship was found controlling for any effects of pay rate, tenure, and performance feedback on perceived autonomy. Reward for high performance appears to strengthen the perception of freedom of action experienced both for college students given novel tasks (Study 1) and employees carrying out their usual job responsibilities (Study 2). These effects are opposite to the decremental effects of reward predicted by CET.

Perceived self-determination mediated a positive relationship of performance–reward expectancy with perceived organizational support, positive mood, and job performance. The expectation of reward for high performance was positively related to employees’ perception of autonomy, which, in turn, was positively related to employees’ belief that the organization valued their contributions and cared about their well-being. Employees appear to view the opportunity to obtain reward for greater performance as indicating increased freedom of action, and they attribute this autonomy to

Table 3
Study 2 Scale Properties and Intercorrelations

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Performance–reward expectancy</td>
<td>3.25</td>
<td>2.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Self-determination</td>
<td>2.22</td>
<td>1.12</td>
<td>.24**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Perceived support</td>
<td>3.98</td>
<td>1.36</td>
<td>.45**</td>
<td>.47**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Mood</td>
<td>2.83</td>
<td>1.51</td>
<td>.26**</td>
<td>.24**</td>
<td>.40**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Performance</td>
<td>3.69</td>
<td>1.66</td>
<td>.12*</td>
<td>.21**</td>
<td>.19**</td>
<td>.15**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Pay (in dollars per hour)</td>
<td>16.44</td>
<td>21.60</td>
<td>-.11</td>
<td>.12*</td>
<td>.06</td>
<td>.12*</td>
<td>.25**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Tenure (in months)</td>
<td>37.20</td>
<td>37.00</td>
<td>-.09</td>
<td>.05</td>
<td>.09</td>
<td>.13*</td>
<td>.12*</td>
<td>.37**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Performance feedback</td>
<td>3.84</td>
<td>2.07</td>
<td>.23**</td>
<td>.19**</td>
<td>.20**</td>
<td>.14*</td>
<td>.12*</td>
<td>-.09</td>
<td>-.07</td>
<td></td>
</tr>
</tbody>
</table>

Note. Study 2 N = 324.

* p < .05.  ** p < .01.
the organization’s commitment to their well-being and the organization’s positive evaluation of their contributions. Although the positive association between performance-reward expectancy and perceived autonomy is inconsistent with CET, the theory can explain the positive association between experienced self-determination and perceived organizational support. The latter result is consistent with Deci et al.’s (1989) finding that managers’ orientation toward supporting their subordinates’ autonomy was positively related to the subordinates’ trust in the organization. Employees attribute favorable motives to the organization (perceived organizational support) when they perceive that the organization allows them greater freedom to carry out their jobs as they so choose.

Employees who experienced high autonomy, stemming from performance-reward expectancy, reported that they felt more active, enthusiastic, and energetic on a typical day at work. As with perceived organizational support, the contribution of reward to positive mood by means of autonomy is inconsistent with CET. However, the relationship between self-determination and positive mood agrees with the view that autonomy is an important determinant of human happiness and satisfaction (e.g., Maslow, 1943; Rogers [Rogers & Skinner, 1956]; Deci & Ryan, 1987). Furthermore, the positive relationship between perceived autonomy and employee performance is consistent with Deci and Ryan’s (1985, 1987) view that high intrinsic task interest causes people to give greater attention to their tasks and therefore to perform better.

To summarize, the positive associations of perceived autonomy with perceived organizational support, mood at work, and job performance are consistent with CET; however, the incremental relationship between performance-reward expectancy and self-determination is opposite to the prediction of CET.

Study 3: Reward, Desire for Control, and Intrinsic Motivation

Burger (1992) suggested that people who have a strong desire for control would show a heightened reaction to conditions of reward that alter perceived autonomy, with resultant changes in intrinsic motivation. Our view predicted that performance-reward expectancy among employees would be positively related to intrinsic motivation, with this positive association being greater for employees with a high desire for control. CET predicted that performance-reward expectancy would be negatively related to intrinsic motivation, with this negative association being greater among employees with a high desire for control. Both our view and a CET-based view predicted the relationship between performance-reward expectancy and intrinsic motivation would be specific to work-related tasks; no relationship was predicted between the expectancy of reward for work activities and intrinsic interest in non-work-related activities carried out in the workplace (e.g., socializing).

We administered a questionnaire designed to assess performance-reward expectancy, desire for control, and intrinsic motivation to a new sample of employees drawn from the same organization examined in Study 2. We asked employees to list the five job-related activities in which they spent the most time on a typical day and to rate their interest in each activity. We assessed the relationship between performance-reward expectancy and intrinsic motivation in these activities, as moderated by desire for control. To assess the specificity of the effects of performance-reward expectancy and desire for control on intrinsic motivation for work activities, we asked the employees to list the five non-work activities on which they spent the most time in the workplace. We examined the effects of performance-reward expectancy for work activities and desire for control on the expression of intrinsic task interest for work versus nonwork activities. As in the second study, we controlled for pay rate, tenure in the organization, and performance feedback.

Method

Sample and Procedure

We administered the survey to 367 employees at nine of the organization’s sites located in the northeastern United States. Three hundred and
Table 5

<table>
<thead>
<tr>
<th>Statement</th>
<th>Factor loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I would prefer to be a leader rather than a follower.</td>
<td>.72</td>
</tr>
<tr>
<td>2. I prefer a job where I have a lot of control over what I do and when I do it.</td>
<td>.71</td>
</tr>
<tr>
<td>3. I enjoy being able to influence the actions of others.</td>
<td>.67</td>
</tr>
<tr>
<td>4. When it comes to orders, I would rather give them than receive them.</td>
<td>.64</td>
</tr>
<tr>
<td>5. I enjoy having control over my own destiny.</td>
<td>.63</td>
</tr>
<tr>
<td>6. I enjoy making my own decisions.</td>
<td>.58</td>
</tr>
<tr>
<td>7. I try to avoid situations where someone else tells me what to do.</td>
<td>.57</td>
</tr>
<tr>
<td>8. I consider myself to be generally more capable of handling situations than others are.</td>
<td>.53</td>
</tr>
<tr>
<td>9. I prefer to avoid situations where someone else has to tell me what it is I should be doing.</td>
<td>.51</td>
</tr>
</tbody>
</table>

thirty-eight employees (92%) returned completed questionnaires. Forty-four percent of the sample were hourly-paid sales-support employees; 32% were hourly salespeople; 20% were salaried sales-support employees; and 4% were salaried salespeople. The mean tenure of these employees was 34.4 months (SD = 35.3 months), and 34% were women. We used regression analyses to examine the relationship between performance-reward expectancy and intrinsic motivation, as moderated by desire for control and using pay rate, tenure, and performance feedback as covariates. Procedures for questionnaire administration were the same as in Study 2.

**Measures**

**Covariates.** Measures of pay rate, tenure, and performance feedback were comparable to those used Study 2.

**Performance-reward expectancy.** We used the same item and response alternatives as in Study 2.

**Desire for control.** We used 9 items from the Desire for Control Scale (Burger & Cooper, 1979) that seemed appropriate for employees (see Table 5). Respondents indicated their extent of agreement with each statement using a 7-point Likert-type scale ranging from 1 (strongly disagree) to 7 (strongly agree). The source article reported an interitem reliability of .80.

**Intrinsic motivation.** To assess intrinsic motivation for work activities, we asked employees to "list 5 job-related activities you spend the most time on during an average day," providing the examples of socializing with coworkers, daydreaming, and taking coffee breaks. The employees responded on the same scale used for the work-related activities.

**Results**

**Reliabilities and Intercorrelations**

The items measuring desire for control showed an acceptable level of internal reliability (Cronbach's alpha of .78). We assessed the unidimensionality of this measure using a principal-components analysis and scree test (Tabachnick & Fidell, 1989, p. 635). The items produced a single large break in the scree plot involving an eigenvalue much greater than 1.0 (See Table 5). Means, standard deviations, and intercorrelations of each measure are displayed in Table 6. Of greatest relevance, performance-reward expectancy was positively associated with work activity interest and was not reliably associated with social activity interest.

**Moderating Effects of Desire for Control**

We used hierarchical regression analyses to assess moderating effects of desire for control on the relationship between performance-reward expectancy and work task interest and between performance-reward expectancy and nonwork activity interest (see Table 7). To reduce potential collinearity between the interaction terms and their component variables, we centered all independent variables (Aiken & West, 1991). Control variables of pay rate, duration of organizational tenure, and frequency of performance feedback were entered in the first step; performance-reward expectancy and desire for control were added in the second step; and the multiplicative composite of performance-reward expectancy and desire for control was added in the third step to assess the interaction between performance-reward expectancy and desire for control. The expectancy of reward for high performance in work activities was reliably related to work activity interest but was not related to nonwork activity interest. Thus, the relationship between the expectancy of reward for high performance and intrinsic motivation was specific to job performance. Furthermore, there was a reliable interaction, in the positive direction, between performance-reward expectancy and desire for control on work activity interest, but there was no interactive effect on nonwork activity interest.

To examine the reliable interaction in more detail, we plotted regression lines representing the relationship between perfor-

### Table 6

**Study 3 Scale Properties and Intercorrelations**

<table>
<thead>
<tr>
<th>Measure</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Performance-reward expectancy</td>
<td>3.34</td>
<td>2.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Desire for control</td>
<td>4.46</td>
<td>0.93</td>
<td>- .02</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Work activity interest</td>
<td>5.77</td>
<td>2.03</td>
<td>.20**</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Nonwork activity interest</td>
<td>6.16</td>
<td>2.17</td>
<td>.06</td>
<td>.10</td>
<td>.29**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Pay (in dollars per hour)</td>
<td>17.15</td>
<td>22.48</td>
<td>-.11*</td>
<td>.07</td>
<td>.13*</td>
<td>-.01</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Tenure (in months)</td>
<td>33.40</td>
<td>34.30</td>
<td>-.06</td>
<td>-.02</td>
<td>.13*</td>
<td>-.05</td>
<td>.26**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Performance feedback</td>
<td>3.81</td>
<td>1.91</td>
<td>.14**</td>
<td>.06</td>
<td>.13*</td>
<td>.12*</td>
<td>.05</td>
<td>-.04</td>
<td></td>
</tr>
</tbody>
</table>

**Note.** Study 2 N = 338.  
* p < .05.  ** p < .01.
Table 7  
Study 3 Hierarchical Regression Analysis for Work Activity Interest and Nonwork Activity Interest

<table>
<thead>
<tr>
<th>Step and variable</th>
<th>Work activity interest</th>
<th>Nonwork activity interest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>SE B</td>
</tr>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay (in dollars per hour)</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td>Tenure (in months)</td>
<td>.01</td>
<td>.00</td>
</tr>
<tr>
<td>Performance feedback</td>
<td>.13</td>
<td>.06</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay (in dollars per hour)</td>
<td>.01</td>
<td>.00</td>
</tr>
<tr>
<td>Tenure (in months)</td>
<td>.01</td>
<td>.00</td>
</tr>
<tr>
<td>Performance feedback</td>
<td>.10</td>
<td>.06</td>
</tr>
<tr>
<td>Performance-reward expectancy</td>
<td>.19</td>
<td>.05</td>
</tr>
<tr>
<td>Desire for control</td>
<td>-.02</td>
<td>.11</td>
</tr>
<tr>
<td>Step 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pay (in dollars per hour)</td>
<td>.01</td>
<td>.00</td>
</tr>
<tr>
<td>Tenure (in months)</td>
<td>.01</td>
<td>.00</td>
</tr>
<tr>
<td>Performance feedback</td>
<td>.09</td>
<td>.06</td>
</tr>
<tr>
<td>Performance-reward expectancy</td>
<td>.19</td>
<td>.05</td>
</tr>
<tr>
<td>Desire for control</td>
<td>-.03</td>
<td>.11</td>
</tr>
<tr>
<td>Reward × Desire for Control</td>
<td>.10</td>
<td>.05</td>
</tr>
</tbody>
</table>

Note.  Work activity interest: Final model F(6, 331) = 5.78, p < .01; total R² = .09. Nonwork activity interest: Final model F(6, 331) = 1.58, p > .10; total R² = .03.
* p < .05.  ** p < .01.

Performance-reward expectancy and work task interest at low, medium, and high levels of desire for control (i.e., 1 SD above and below the mean and at the mean; Aiken & West, 1991; Cohen & Cohen, 1983). As shown in Figure 2, simple slope analyses indicated no significant relationship between performance-reward expectancy and work activity interest among employees having a low desire for control, r(331) = 1.23, p > .10. In contrast, we found reliable relationships in the positive direction between performance-reward expectancy and work activity interest among employees having medium and high desires for control, respectively, r(331) = 3.72, p < .01, and r(331) = 4.12, p < .01. Thus, the relationship between performance-reward expectancy and work activity interest became more positive at higher levels of desire for control.

Discussion

A positive relationship was found between employees’ performance-reward expectancy and work activity interest, as moderated by desire for control. The stronger the desire for control, the greater was the observed relationship between performance-reward expectancy and intrinsic motivation. Because the performance-reward expectancy pertaining to work activities, no relationship between this expectancy and intrinsic motivation for nonwork activities occurring in the workplace was expected or found. The findings are not consistent with the prediction of CET of an inverse relationship between employees’ performance-reward expectancy and intrinsic motivation that should be greater among persons with a high desire for control. Employees who were most concerned with self-determination took the greatest interest in their work activities when those activities were associated with expectations of reward for high performance. Persons with a high desire for control are evidently attracted to activities they can control (Burger, 1992); reward for high performance leads to the perception of self-determination, attracting the interest of individuals who have a high level of desire for control.

General Discussion

The pattern of findings suggests that reward for high performance increases perceived autonomy, intrinsic motivation, and related outcomes. Study 1 found that pay for meeting a performance criterion had positive effects on students' perceived self-determination and competence, expressed task enjoyment, and free time spent performing the task; furthermore, the incremental effect of reward on expressed task enjoyment was mediated by perceived self-determination and competence. Study 2 established that perceived self-determination mediated positive relationships between employees' performance-reward expectancies and perceived organizational support, mood at work, and job performance. Study 3 demonstrated that performance-reward expectancy was positively related to employees' expressions of interest in their ongoing work activities, this relationship being greater among employees having a high desire for control. Reward for high performance increased perceived autonomy and intrinsic motivation among college students who were given a novel task and among employees who were carrying out their usual job responsibilities. Students who were promised pay for meeting a performance standard in a novel task perceived that they had more control over whether to carry out the task than did students doing the task with the same performance objective and success feedback but without reward. Employees with strong expectancies of pay for high performance in their usual job activities perceived greater control over how they carried out their jobs than employees with lesser performance-reward expectancies. These effects are the opposite of what CET supposes, namely, that reward for meeting a performance criterion is an invasive form of
social control that reduces perceived autonomy and intrinsic motivation (Deci, 1995; Deci & Ryan, 1985, 1987).

In everyday life, people may learn that performance-contingent reward is frequently used as an incentive to gain cooperation: Parents, teachers, and employers provide favorable consequences for changes in skills, knowledge, or behavior they believe will occur by giving rewards. As a consequence, rewards convey that (a) the person, group, or organization giving the reward has low control over the potential reward recipient’s actions, and (b) the potential recipient can, if he or she so wishes, decline the reward and not act as directed. The promise of reward for carrying out a novel task therefore increases the perception of free choice concerning whether to carry out the task. Furthermore, the expectation of reward for high performance in ongoing activities increases the perception of choice concerning how the activities are to be carried out.

The first study indicated that reward for meeting a performance standard produces greater perceived self-determination than being given the performance standard and favorable performance feedback but without a reward. Because setting a performance criterion can reduce perceived self-determination (Deci & Ryan, 1985), we do not assume that performance-contingent reward will necessarily produce greater perceived autonomy than performing the task without a performance standard. Whether or not reward will completely overcome any decremental effects of a performance standard on perceived autonomy may depend, in part, on the arbitrariness of the performance standard. An imposed performance standard may produce a larger decrement of self-determination than a performance standard established in consultation with the participant.

Study 1 found that reward for meeting an absolute performance standard, but not a normative standard, increased perceived competence. The information that one’s performance has surpassed most of a reference group may provide an informative cue for competence. In contrast, absolute performance standards offer limited information concerning ability (Aronson, Wilson, & Akert, 1995, p. 173), allowing a larger informational role for reward. The incremental effect of reward on perceived competence complements previous findings that performance-contingent reward increased competence valuation (Harackiewicz et al., 1987; Harackiewicz & Manderlink, 1984).

Perceived autonomy and competence mediated the positive relationship between performance-contingent reward and college students’ expressions of novel-task enjoyment (Study 1). Causal modeling found that perceived autonomy and perceived competence had distinct positive effects on expressed task enjoyment, supporting CET. Perceived autonomy also mediated the positive relationships between employees’ performance–reward expectancies and perceived organizational support, mood at work, and work performance (Study 2). Although CET incorrectly predicted the direction of performance-contingent reward’s effect on perceived self-determination, CET is consistent with the obtained relation-
ships of perceived self-determination and competence with intrinsic motivation and related outcomes.

In Study 1, perceived autonomy and ability, resulting from performance-contingent reward, increased participants' expressed task interest but not the free time spent performing the task. Perhaps multiple-item measures of perceived self-determination would provide a more sensitive assessment than the single-item measure we used. Additional mediating variables, including competence valuation, may also contribute to the positive effect of performance-contingent reward on intrinsic motivation (e.g., Harackiewicz et al., 1987; Harackiewicz & Manderlink, 1984).

Findings by Harackiewicz et al. (1984) suggested that setting a performance standard may reduce intrinsic interest by creating evaluation apprehension. Hence, we do not assume that being rewarded for meeting a performance standard will necessarily produce greater intrinsic motivation than performing a task without a performance standard. The results of Study 1 support other findings indicating that reward can lessen the decremental effects of performance standards on intrinsic motivation (e.g., Harackiewicz et al., 1987; Harackiewicz & Manderlink, 1984).

In Study 2, performance-reward expectancy contributed to employees' perceived organizational support by enhancing experienced self-determination. Workers who, owing to performance-reward expectancies, perceived they had greater freedom concerning how to carry out their jobs concluded that the organization was strongly dedicated to their well-being and appreciated their contributions. Employees may value autonomy for its own sake and as an indication that the organization trusts their judgment, skills, and loyalty sufficiently to give them authority concerning how they carry out their jobs.

Perceived self-determination, resulting from performance-reward expectancy, was positively related to employees' mood at work. Employees who perceived high self-determination reported stronger feelings of enthusiasm, excitement, and alertness on the job. Perceived self-determination may directly influence human happiness and satisfaction (e.g., Maslow [1943], Rogers [Rogers & Skinner, 1956], Deci & Ryan, 1985); in addition, the opportunity to carry out job activities in one's own way may encourage the exploration of skills and talents, leading to a more positive mood (Csikszentmihalyi, 1990; George & Brief, 1992).

Perceived autonomy mediated the incremental relationship between performance-reward expectancy and work performance, as evaluated by employees' supervisors. The positive association between perceived self-determination and performance follows from theories proposing that perceived autonomy increases work motivation (Alderfer, 1969; Herzberg, 1966; Maslow, 1943) and from cognitive social accounts maintaining that perceived autonomy increases the enjoyment of ongoing activities (Deci, 1995; Deci & Ryan, 1987).

Study 3 found a positive relationship between employees' performance-reward expectancies and expressions of interest in daily work activities, with this effect being greater among employees with a high desire for control. Some views of human motivation assume pay merely provides a basis for satisfying basic biological needs rather than helping to meet higher-order needs, such as autonomy (e.g., Herzberg, 1966; Maslow, 1943). Such accounts fail to consider the important symbolic functions of pay and other tangible rewards received for high performance (Alderfer, 1972; Harackiewicz et al., 1984; Porter & Lawler, 1968). The present finding that desire for control positively influenced the relationship between employees' performance-reward expectancy and intrinsic motivation agrees with Burger's (1992) results that persons with a high desire for control seek controllable situations and find them especially enjoyable.

The results have practical implications. Our laboratory study suggests that reward can be used to increase the intrinsic motivation of persons who have been assigned performance objectives (cf. Bandura, 1986, 1997; Carton, 1996; Dickinson, 1989; Eisenberger & Cameron, 1996; Flora, 1990; Harackiewicz et al., 1984; Mawhinney, 1990; Reitman, 1998). Furthermore, in our field studies, the perception of increased self-determination resulting from reward for high performance was associated with beneficial consequences for both the employees and their work organization. Employees who perceived increased autonomy, owing to performance-reward expectancies, had greater perceived organizational support and a more positive mood at work, and they also showed superior work performance. These results are consistent with evidence that employees experiencing high autonomy are more satisfied with their jobs (Deci et al., 1989); the present data indicate that such perceived self-determination is related to the expectation of reward for high performance.

Greater perceived freedom, resulting from performance-reward expectancies, evidently increases employees' intrinsic motivation, causing them to carry out their job responsibilities more effectively. Even in low-level jobs, intrinsic motivation may influence employee performance. For example, cashiers may take extra time and effort to acquire knowledge concerning the location of merchandise about which they may be asked, may make fewer errors, may be more courteous and friendly with customers, and so forth.

The incremental relationship found between expected reward for superior performance and intrinsic motivation was greater for employees with a high desire for control. This finding suggests the utility of allowing employees some degree of choice concerning the basis for their pay. For example, many sales organizations allow workers to select a combination of low base pay and commission on sales or to choose higher base pay, with or without an annual bonus. Other organizations might adopt such options in order to meet the autonomy needs of employees having a high desire for control.

Our findings have implications for the relationship between reward and creativity. Numerous studies have reported that reward promised for carrying out a task reduces creative performance (Hennessey & Amabile, 1988). Reward is often assumed to reduce creativity by causing tasks to be "defined more narrowly simply as a means to an end rather than as an opportunity for exploration and play" (Amabile & Cheek, 1988, p. 60). Such extrinsic motivation was argued to distract attention from the activity, thereby reducing the spontaneity and flexibility of performance (Amabile, 1983, 1990). In contrast, recent findings suggest that making reward explicitly dependent on creative performance increases creativity (Eisenberger & Armeli, 1997; Eisenberger, Armeli, & Pretz, 1998). Future research might examine whether these varied effects of reward on creativity are mediated by perceived self-determination.

Conclusions

People evidently understand that the use of reward in everyday life is utilitarian, involving the reward-giver's lack of control over the recipient; the person, group, or institution providing the reward
generally does so because of the belief that positive consequences are necessary to obtain the cooperation of the potential reward recipient. To allow CET to better explain the self-determination results, the presumption of an inverse relationship between reward and perceived autonomy might be replaced by the assumption that reward increases perceived self-determination. Furthermore, CET could be modified to incorporate an incremental effect of performance-contingent reward on perceived competence. These suggested changes notwithstanding, our findings of positive relationships of perceived autonomy and competence with intrinsic motivation and related outcomes support the core assumption of CET that perceived autonomy and competence lead to greater intrinsic motivation.

References

References marked with an asterisk designate free-time studies included in the meta-analysis. References marked with a dagger designate studies on expressed task interest included in the meta-analysis.


