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Intrinsic Motivation:
More Smoke Than Fire**

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Motivation research makes a basic distinction between intrinsic and extrinsic motivation. In general, researchers define intrinsic motivation as that which arises from performing the task. An employee may feel motivated to perform the task because doing so gives them a feeling of accomplishment, mastery, and/or self-fulfillment. Extrinsic motivation, on the other hand, comes from outside the individual, and results from the expectation of receiving external rewards such as salary, benefits, incentives, promotions, and recognition in exchange for job performance. This means the tools of compensation and benefits professionals are extrinsic rewards. These tools have the goals of enhancing extrinsic motivation and increasing organizational performance.

A recurring claim in the popular management literature is that extrinsic rewards diminish intrinsic motivation, and this problem is so serious that it can render extrinsic incentives for performance of any kind as ineffective or even counterproductive. This claim has become so commonplace that many managers and employees assume that it is true and that it is proven by decades of academic research.

Two prominent commentators on rewards, Alfie Kohn and Daniel Pink, have done much to popularize the claim of an undermining effect of extrinsic rewards, relying on one-sided discussions of research to make the case. Kohn, a former schoolteacher, authored a famous Harvard Business Review article entitled, "Why incentive plans cannot work" (Kohn 1993b). He states in his book, "The bottom line is that *any* approach that offers a reward for better performance is destined to be ineffective" (Kohn, 1993a, p.119). He further claims, "Possibly the most compelling reason that incentive systems fail is . . . (that) extrinsic motivators not only are less effective than intrinsic motivation but actually reduce intrinsic motivation. . . . Furthermore, *the more closely we tie compensation (or other rewards) to performance, the more damage we do*" (p. 140). Daniel Pink, a political speechwriter turned writer of best sellers, addressed rewards in Drive (Pink 2009). He

listed “seven deadly flaws” of extrinsic rewards, including “They can extinguish intrinsic motivation” and “They can diminish performance.” Such claims are commonplace in the management literature.

If extrinsic rewards have such negative effects on intrinsic motivation that they cannot be effective, compensation and benefits is destined to be a miserable profession indeed. The issue is therefore of central importance to rewards professionals. However, we show here that extrinsic rewards do not undermine intrinsic motivation and effects on intrinsic motivation do not render extrinsic rewards ineffective. Furthermore, focusing only on intrinsic motivation is not a practical strategy for work organizations. Total motivation is a function of external plus internal motivation, and extrinsic motivation cannot be ignored.

We first consider theories that bear on the impact of extrinsic rewards on intrinsic motivation. Next, we will discuss a specific study by two of the authors to demonstrate that extrinsic rewards can actually increase intrinsic motivation. We will broaden the discussion by summarizing lessons from the extensive research on the effects of extrinsic rewards on intrinsic motivation. Finally, we will draw some important implications for practice.

Theoretical Explanations for Effects of Extrinsic Rewards on Intrinsic Motivation

It is not obvious that extrinsic rewards interfere with intrinsic motivation. Indeed, it is possible that intrinsic and extrinsic motivation are separate, unrelated, and additive, as many researchers and theorists have argued. That is, employees may be motivated by both intrinsic rewards and extrinsic rewards at the same time or neither, and one type of motivation may be independent of the other. What is the basis, then, for believing that extrinsic rewards may decrease or increase intrinsic motivation? Table 1 outlines the major theories that bear on this question.

Insert Table 1 about here

Cognitive Evaluation Theory (CET) is by far the most influential theory on this topic.

Laboratory studies in the early 1970s indicated that under certain conditions extrinsic rewards could decrease intrinsic motivation. Edward Deci and his colleagues (e.g., Deci and Ryan 1985) developed Cognitive Evaluation Theory to explain the results. The theory indicates that psychological needs for autonomy and competence underlie intrinsic motivation. Extrinsic rewards affect intrinsic motivation depending on how recipients interpret them. If recipients believe that the rewards provide positive information about their own competence and self-control over results, intrinsic motivation will increase. If recipients interpret the results as indicating external control, decreasing their feelings of self-control and competence, intrinsic motivation decreases.

Deci's classic 1971 laboratory experiment with college students illustrates the effect. Subjects performed an interesting task, using a Soma puzzle cube to replicate drawings before them, for an hour on each of three consecutive days. During an eight-minute period in the middle of the session, the subjects were observed as they were left alone; they were free to play with the puzzle or to read magazines left in the room. The control group received no monetary reward for their effort at any time. The experimental group received no compensation on day 1, an incentive of \$1 per puzzle completed on day 2, and no compensation on day 3. The experimental group spent significantly more time than the control group playing with the puzzle in their free time on day 2 (when they received an incentive) but significantly less on day 3 (when the incentive was suddenly withdrawn). This was interpreted as evidence that the extrinsic reward for the experimental group had significantly reduced their intrinsic motivation to engage in the task.

The theory predicts that different types of rewards will, on average, have different effects. Task-noncontingent rewards (such as benefits) are based on something other than performing the task, such as employment. The theory predicts that they will have no effect on intrinsic motivation because they convey no information about competence or control. Task-contingent rewards are given for doing or completing an activity (such as salary). The theory predicts that these will, in

general, have a negative effect on intrinsic motivation because they will be experienced as controlling. Finally, performance-contingent rewards (such as monetary incentives) are given for performing an activity well, matching a performance standard, or exceeding a criterion. The theory predicts that these will be experienced as highly controlling, thus diminishing intrinsic motivation, but the reward also conveys information about competence that reduces the negative effect.

Cognitive Evaluation Theory also predicts that the social context will have important effects on intrinsic motivation. Interpersonal pressure to perform is predicted to have negative effects, social cues can have positive or negative effects depending on their messages about control and competence, verbal rewards (positive feedback, praise) that are controlling are predicted to undermine intrinsic motivation but verbal rewards that are informational (e.g., “you did very well compared to others”) will have positive effects, as long as they are not experienced as controlling.

It is useful to reiterate that this theory indicates that extrinsic rewards can be administered in ways that have no effect or actually increase intrinsic motivation. This is in contrast to strident claims in the popular business press that all extrinsic rewards decrease intrinsic motivation.

The Overjustification Effect uses a psychological framework known as attribution theory. This perspective argues that people make retrospective attributions about their own behavior based on what they did and the social context in which their behavior occurred (Lepper, Greene, and Nisbett 1973). The theory suggests that rewarding people for an interesting activity leads them to attribute their behavior to the extrinsic reward rather than to their intrinsic interest in the activity. Thus, intrinsic motivation is lower than if there were no extrinsic reward.

Although the basis for a negative effect of extrinsic rewards on intrinsic motivation is different in the overjustification effect and Cognitive Evaluation Theory, the theories are similar in many respects. Both theories rest primarily on laboratory research by psychologists, both focus on ways in which extrinsic rewards can undermine intrinsic motivation, and both make similar predictions. However, Cognitive Evaluation Theory is more complete and influential.

The overjustification effect has received much attention in the education field. The meta-analysis relevant to this theory (Tang and Hall 1995) reviewed 50 studies, all of which used students (from preschoolers to college students) as subjects. This presents a potential problem for the overjustification effect: employees who are used to being paid for their work may respond differently to monetary rewards than the subjects of these studies. As Deci et al. (1999) report, negative effects on intrinsic motivation are more serious for children than college students. They suggest (p.656) that this may be because “college students have greater cognitive capacity for separating the informational and controlling aspects of rewards and are more accustomed to operating with performance-goal orientations, so they may be more ready to interpret rewards as indicators of their effective performance than as controllers of their behavior.” We would speculate that such differences are even greater between preschoolers and employed workers.

Self-Determination Theory (Deci and Ryan 2005) is a broad theory of motivation in work organizations. It recognizes the limitations of Cognitive Evaluation Theory in such settings, such as a reliance on laboratory studies, lack of attention to differences in types of work and organizational climate, and so on. Self-determination theory distinguishes various types of motivational states, considers different organizational conditions that may make extrinsic rewards more effective than intrinsic rewards (for example, organizational climate and boring versus routine work), examines individual differences in orientation toward intrinsic versus extrinsic motivation, and discusses managerial behavior that can enhance intrinsic motivation. In short, the theory maintains the predictions of Cognitive Evaluation Theory while expanding upon them to indicate organizational conditions under which the predictions do not apply or are less relevant in real-world settings.

General Interest Theory is an outgrowth of work by Eisenberger, Pierce, and Cameron (1999) that criticizes the limitations of Cognitive Evaluation Theory. General Interest Theory indicates that the content of tasks and the context in which they are presented increase intrinsic

motivation to the extent that they indicate that performing the task helps satisfy needs, wants, or desires. On the other hand, task content and context reduce intrinsic motivation when they communicate that the task is trivial or irrelevant, or at odds with the individual's needs, wants, and desires. In this formulation, rewards are one element of context.

Rewards are important in this theory primarily because they have symbolic value. Rewards for performance can signal that importance of achievement, that the individual is competent, and that the task is important, all of which increase intrinsic motivation. The theory suggests that personality and culture affect intrinsic motivation by influencing needs and desires. For example, intrinsic motivation is reinforced more in some organizational cultures than others, and some types of people (e.g., those with high need for achievement) are more likely to feel intrinsic motivation.

This theory is important to reward professionals because it makes the opposite predictions of Cognitive Evaluation Theory concerning the use of incentives. CET holds that performance-contingent rewards in general will be seen as controlling, pressuring, and stressful and therefore will decrease intrinsic motivation, and that more specific performance standards will be seen as even more controlling, further decreasing intrinsic motivation. By contrast, General Interest Theory predicts that offering rewards for performance enhances perceptions of competence, self-determination, and good feelings toward the context. Moreover, specific performance standards increase intrinsic motivation more than vague standards. Rather than experiencing standards as stressful, striving for the standard leads the individual to feel greater competence and self-control.

Finally, **Motivation Crowding Theory** (Frey and Jegen 2001) integrates economic theories of monetary incentives with psychological theories. Most economic theories emphasize extrinsic incentives as causes of behavior and do not consider intrinsic motivation. Motivation crowding theory assumes that extrinsic rewards "crowd out" intrinsic motivation if individuals perceive the rewards to be controlling. However, rewards "crowd in" intrinsic motivation if individuals perceive the rewards as supportive, which bolsters self-esteem and feelings of self-determination. Crowding

out can have negative effects on performance that are not predicted by normal economic theories of incentives. For example, volunteers in charitable organizations work less if they receive payment for their efforts, and tardiness in day care centers increases if parents are fined for being late in dropping off their children. In these cases, the reward signals that the person's relationship with the organization has been transformed from a personal choice into an economic arrangement. However, it is important to note that the experience in volunteer organizations may not be relevant to workplace settings where people expect to be paid for their work.

Theories are important in helping explain why a particular effect may occur and in what conditions the effect might be expected. However, research is important in determining which theories are correct. We turn next to an example of field research on our topic, before summarizing the research literature more broadly.

A Field Study of Rewards and Intrinsic Interest: Fang & Gerhart, 2012

A recent study (Fang & Gerhart 2012) examined whether pay for performance diminishes intrinsic interest in a study of white-collar employees from eight Taiwanese companies. The firms represented six different industries (petrochemicals, construction, insurance, commercial transport, chemicals, and electrical appliances/computer components). The authors predicted that pay for individual performance would have a positive rather than a negative impact on intrinsic interest (a concept that is similar to but broader than intrinsic motivation).

The authors hypothesized that the relationship would be positive for two reasons. First, employees covered by pay for performance plans tend to perceive these plans as increasing their sense of personal competence and feelings of control in the workplace. This is because employees under these plans receive concrete evidence of their personal competence in the form of higher pay, and because the plans encourage employees to feel that they control the conditions that lead to higher pay. According to Cognitive Evaluation Theory, feelings of greater competence and increased autonomy should be associated with greater intrinsic interest, not less. Second, the

authors predicted that different types of employees would be attracted to and would remain in organizations with pay for individual performance than those without it. Those who are attracted to pay for individual performance plans are more likely to perceive themselves as competent, high performers who will benefit from the plans. Such employees are less likely to experience negative effects on intrinsic interest from pay for individual performance; rather they are likely to embrace such plans. This is a “sorting effect.” Employees who are most likely to experience negative effects on intrinsic motivation from pay for individual performance are likely to choose to work in organizations that do not have pay for individual performance, and those least likely to experience negative effects on intrinsic motivation will be drawn to organizations with such plans.

The results of the study were consistent with the hypotheses. Their findings included the following:

- The correlation between intrinsic motivation and extrinsic motivation was a positive, moderately strong .22 after correcting for measurement error. That means that there is no tradeoff between intrinsic and extrinsic motivation for the average employee. An employee tends to be high or low on both types of motivation.
- Regression analyses indicated that the strength of pay for performance was positively (not negatively) related to employees’ intrinsic interest. The regression coefficient was a relatively strong .38, indicating that for each standard deviation increase in pay for performance, intrinsic interest is .38 higher.
- The relationship between pay for individual performance and intrinsic motivation was due largely to the effects of pay for performance plans on employee feelings of competence and autonomy, and personality characteristics (internal locus of control, orientation toward intrinsic rewards, and orientation toward extrinsic rewards) helped explain employee differences on these feelings of competence and autonomy.

- There was evidence of the hypothesized sorting effect. Employees tend to gravitate toward organizations with pay for individual performance if they are higher on two personality characteristics: orientation toward extrinsic rewards and internal locus of control, meaning that they feel more ability to control their own fate. In other words, those who feel most able to benefit from pay for individual performance tend to be attracted to organizations offering it. Unlike laboratory experiments, in which subjects are randomly assigned to different treatment conditions, employees are not randomly distributed across companies. The study was the first to examine the sorting effect, and it suggests that negative effects of extrinsic rewards on intrinsic motivation are much less likely to happen in the real world than in the laboratory.

Are the findings of this study anomalous, or are they consistent with other studies finding that extrinsic rewards for performance lead to neutral or positive effects on intrinsic motivation? We consider the broader research literature next.

Summary of Findings from the Research Literature

Here we summarize key research findings. Contrary to Pink's assertion (2009, p. 39) that a negative effect of extrinsic rewards on intrinsic motivation is "one of the most ignored" findings in social science, there have been well over 100 studies of this topic in the laboratory and applied settings, drawn from the fields of psychology, business, education, and economics. A number of detailed reviews of this literature help us to summarize these studies. We will take a "review of reviews" approach here, rather than trying to exhaustively cover all of the studies in the field. Our focus will be on reviews that (a) appear in peer-reviewed journals and (b) have been published during the past 20 years.

Table 2 lists the major reviews of research that meet our criteria. Some reviews make a narrative summary of the literature, others use what researchers term "meta-analysis." In general, narrative reviews tend to be more oriented toward theory building, while meta-analytic reviews

tend to be more oriented toward testing whether theories are supported by the literature. Meta-analysis has become the primary method of reviewing the literature in the social sciences. It permits a statistical aggregation of different studies, permitting stronger conclusions about such matters as effect size and conditions under which effects do and do not occur (that is, moderating and mediating effects).

Insert Table 2 about here

Areas of Consensus. Scholars from different perspectives agree on many important points, while there are differences of opinion about others. Here, we summarize a set of conclusions that represent the consensus of the vast majority of motivation researchers. Subsequently, we present a set of conclusions that are more controversial. Conclusions upon which there appears to be consensus in the literature include the following.

1. **The research does not demonstrate that “incentive plans cannot work” due to negative effects on intrinsic motivation.** Motivation is the sum of extrinsic motivation and intrinsic motivation. Even scholars who believe that extrinsic rewards reduce intrinsic motivation do not hold that the effect overwhelms extrinsic motivation and makes overall motivation negative. The popular claim that rewards undermine intrinsic rewards to such an extent that rewards fail is not consistent with research. As Deci et al. (1999, p.657) put it, “There is no lack of agreement . . . about the power of rewards to control behavior. It is clear that rewards can be used as a technique of control. CET specifically proposes that it is because people are controlled by rewards that they become less intrinsically motivated.”
2. **It is possible for extrinsic rewards to result in increased as well as decreased intrinsic motivation.** This conclusion is endorsed by the authors of all five major theories discussed above, for different reasons. For example, Lepper (one of the original authors of the overjustification hypothesis) and his colleagues (1999) point out that, “. . . even (the)

earliest studies included clear demonstrations of conditions under which extrinsic rewards failed to undermine, or even enhanced, intrinsic interest.” They estimate (p.672) that over 80% of published studies are explicitly designed to demonstrate interaction effects, that is conditions under which a negative effect of extrinsic rewards on intrinsic motivation is likely to occur compared to conditions under which no effect or a positive effect is likely to occur. Social cues, supervisor behavior, feedback about performance, and organizational climate can help employees see rewards as being associated with increased competence and self control, thereby increasing intrinsic motivation. This means that sweeping statements of a negative effect of extrinsic rewards on intrinsic motivation that are found in popular polemics go far beyond the evidence.

- 3. Rewards have no detrimental effect on intrinsic motivation for boring, routine, and tedious work.** Although we do not believe that extrinsic rewards have detrimental effects on intrinsic motivation for interesting work (more on this below), it is important that no major scholar in this field argues for a detrimental effect on intrinsic motivation for boring, routine, or tedious tasks. That is because these tasks lack intrinsic motivation to begin with. This matters because even in advanced economies, a huge percentage of the work offers little intrinsic motivation and the work would not be done without extrinsic rewards. Jobs with low intrinsic motivation include many in fast food restaurants, offices, factories, retail stores, and call centers. Even professional jobs that are highly intrinsically motivating typically include a mix of tasks that are interesting and boring, and managers do not want skilled employees to ignore the boring tasks. The job design literature suggests many ways of increasing intrinsic motivation for many boring tasks. Nevertheless, much of the work of our economy is unlikely to be completed to an acceptable standard of performance without extrinsic rewards. A final note is that General Interest Theory applies to both interesting

and boring work; it argues that performance contingent rewards actually tend to increase intrinsic motivation for less interesting work.

4. **Some rewards have positive to neutral effects on intrinsic motivation.** Verbal rewards (praise) significantly increase intrinsic motivation according to multiple reviewers from different camps. Rewards that are provided simply based on participation in the organization and that are not contingent on performance typically do not affect intrinsic motivation, because they convey no information about employee competence or self-control. Employee benefits and service awards are examples of rewards that fit this type.
5. **Some rewards have consistent detrimental effects on intrinsic motivation.** Rewards simply for participating in a task reduce intrinsic motivation. This suggests that salary, which is pay simply for doing a job, may have negative effects on intrinsic motivation. (Recall the decreased intrinsic motivation of paid volunteers in charitable organizations.) However, the practical considerations of this finding are limited. Most jobs would never be filled if organizations did not offer compensation for them.

Disagreement Over Performance-Contingent Incentives. There is sharp disagreement in the literature about whether performance contingent rewards (that is, incentives) have consistent negative effects on intrinsic motivation. Deci and his colleagues, who see incentives as generally having negative effects, have had fierce disagreements with Eisenberger and his colleagues, who see generally positive effects. A detailed review of the debate is beyond the scope of this paper, but here we come down on the side of Eisenberger et al. and General Interest Theory as better fitting the research evidence, for several reasons.

First, too much of the support for CET and related theories depends on laboratory conditions that simply do not apply to real-world incentive designs. The 1971 Deci study discussed above is the typical design for laboratory experiments. The incentive is provided for one session and then withdrawn in the next session arbitrarily. What incentive plan in the real world operates

that way? There are many possible explanations for the reduced intrinsic interest of subjects who expected to receive and reward but did not; most notably, the effect may be due to a negative reaction to the act of withholding the reward. Interestingly, laboratory results are far weaker when they are based on subjects' reports about their level of internal motivation than for the amount of free time they spend on the task. Deci gives far less weight to be self-reports of intrinsic motivation, but we believe that self-reports are a direct measure of the psychological state of interest.

We would be more comfortable with the results of such laboratory experiments if they were consistent with field study results, but this is not the case. After Deci et al. (1999)'s meta-analysis found strong support for the negative effects of rewards on intrinsic motivation, Eisenberger et al. (1999) reanalyzed a subset of 43 field studies from Deci's sample and found the opposite results. Rewards that were contingent on explicit performance goals increased (rather than decreased) intrinsic motivation, especially when considering self-reported intrinsic motivation.

Second, research in the decades since the introduction of Cognitive Evaluation Theory has undermined the conceptual foundation for this approach. CET rests on the belief that rewards undermine feelings of competence and self-control, especially when rewards are accompanied by pressure, high standards, and competitiveness. Considerable research has demonstrated that in fact rewards tend to increase feelings of competence and self-control, and that high standards, pressure, and competitiveness can actually enhance these effects. These results are consistent with our own personal experience. Many employees view earning incentives as an absorbing and enjoyable game rather than a dreaded tool of management control. We therefore do not see a plausible psychological mechanism for effects that Deci and colleagues claim.

Thus, our reading of the literature is that negative effects of rewards on intrinsic motivation can occur and can be manufactured in laboratory conditions, but they are not the norm in the real world. As Eisenberger and Cameron (1996, p.1154) argue, " (The) claimed negative effects of

reward on task interest and creativity have attained the status of myth, taken for granted despite considerable evidence that the conditions producing these effects are limited and easily remedied.”

Implications for Practice

The tools of the trade for rewards professionals are extrinsic rewards, namely salary, incentives, benefits, and recognition. Many rewards professionals have read popular accounts of the negative impact of rewards on intrinsic motivation and the failure of rewards. They must wonder if the research really proves that their life’s work is an exercise in futility. They also must wonder whether, in the end, employees will come to view their reward systems as undermining employees’ sense of competence and self-control.

However, our reading of the research on this topic shows that rewards clearly tend to increase performance, and this is because they increase total motivation (extrinsic + intrinsic). Detrimental effects of extrinsic rewards are not inevitable, and appropriate use of rewards can increase intrinsic as well as extrinsic motivation. Negative effects on motivation can be averted systematically by clearly understanding the conditions that could create a negative effect and avoiding them.

Perhaps the most important lesson from the research is that the effects of the reward depend on the social context in which it is provided. If the reward is appropriately implemented, it should enhance rather than undermine intrinsic motivation – making the incentive effect that much more powerful than if it relies on extrinsic motivation alone. This requires, for example, appropriate communication about the importance of the task and the nature of the incentive; specific, meaningful performance goals; appropriate feedback and support from supervisors; selection systems that help sort out those who do not fit the desired culture (and reward strategy) of the organization; and an organizational culture in which incentives are supported by managers and employees. This discussion reminds us that contextual factors are at least as important to success or failure of reward programs as the technical merits of the programs.

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Table 1

Theories Concerning the Effects of Extrinsic Rewards on Intrinsic Motivation

Theory	Key Reference	Major Claims Concerning Effects of Extrinsic Rewards
Cognitive Evaluation Theory	Deci and Ryan 1985	Under certain conditions, extrinsic rewards <u>undermine</u> intrinsic motivation
Attribution Theory / The Overjustification Effect	Lepper, Greene, and Nisbett 1973	Intrinsic motivation may be <u>decreased</u> by extrinsic incentives
Self-Determination Theory	and Deci 2005	Under certain conditions, extrinsic rewards can <u>enhance</u> intrinsic motivation
General Interest Theory	Eisenberger, Pierce, and Cameron 1999	Under certain conditions, extrinsic rewards can <u>enhance</u> intrinsic motivation
Motivation Crowding Theory	Frey and Jegen 2001	Intrinsic motivation can be <u>crowded out</u> by extrinsic motivation created by incentives

Table 2**Major Literature Reviews in Peer-Reviewed Journals, 1992 – 2002**

Source	Primary Discipline	Type of Review	Comments
Cameron and Pierce (1994)	Psychology	Meta-analysis	Reviews 101 studies on the effects of rewards on intrinsic motivation; major challenge to Cognitive Evaluation Theory
Deci, Koestner, and Ryan (1999)	Psychology	Meta-analysis	Reviews 128 studies; the most important review supporting Cognitive Evaluation Theory
Eisenberger and Cameron (1996)	Psychology	Narrative	Theory-building focus; challenges Cognitive Evaluation Theory
Eisenberger, Pierce, and Cameron (1999)	Psychology	Meta-analysis	Meta-analysis of 43 applied (non-laboratory) studies; challenges Cognitive Evaluation Theory in applied settings
Frey and Jegen (2001)	Economics	Narrative	Reviews the literature from an economics perspective, includes economic studies not considered elsewhere
Kunz and Pfaff (2002)	Economics	Narrative	Considers whether incentives negatively affect intrinsic motivation, thereby undermining agency theory, a theory of incentives in economics
Rawsthorne and Elliot (1999)	Psychology	Meta-analysis	Review of laboratory studies; excludes studies using performance-contingent rewards, including pay
Tang and Hall (1995)	Education, Psychology	Meta-analysis	Review of 50 laboratory studies using students as subjects (ranging from preschoolers to college students)
Wiersma (1992)	Psychology	Meta-analysis	Reviews 20 early studies; concludes that rewards undermine intrinsic motivation but increase performance