Group Incentives and Performance: A Study of Spontaneous Goal Setting, Goal Choice and Commitment

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Building on previous results at the individual level, this study tested the differential effects of three forms of group incentives on aspects of group goal setting, and group performance. Relationships among group incentives, spontaneous goal setting, chosen group goal level, goal commitment, and group performance were examined. Results indicate that placing pay at risk increased the level of spontaneous group goal setting. Also, groups with the most pay at risk chose higher goals. For these groups, chosen group goal level mediated the group incentives-group performance relationship.

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Increasingly, team and group incentives are being used by organizations (Gross, 1995) and are yielding positive results (Hansen, 1997; Hatcher & Ross, 1991; Welbourne & Cable, 1995). Substantial field evidence exists for the relationship between group incentives and group performance (Hansen, 1997; Kaufman, 1992). Empirical evidence at the individual level shows that incentives may influence performance, in part, through their influence on goal setting (Lee, Locke & Phan, 1997; Terborg & Miller, 1978; Wright, 1992, 1990, 1989). Additionally, research has shown how organizational contextual variables such as monetary incentives and self-set goal level instructions influence goal valences (Moussa, 2000). Others have studied processes that mediate the relationship between group goals and group performance (Weingart & Weldon, 1991; Weldon, Jehn & Pradhan, 1991). However, there is still much to be learned about the relationships among monetary incentives, goal
setting, and performance, particularly at the group level (Knight, Durham & Locke, 2001). In 1968, Locke proposed that goals may mediate the effects of incentives on performance. Tolchinsky and King (1980) noted that this mediation hypothesis was one of the least developed aspects of goal-setting theory. Twenty years later, this still remains true in the main, with the limited results to date described as “puzzling and inconsistent” (Lee et al., 1997).

Locke, Shaw, Saari and Latham (1981) suggested that rewards might affect performance by influencing three different aspects of goal setting. First, they suggested that the prospect of monetary rewards might induce a greater degree of spontaneous goal setting. Second, they proposed that incentives might affect the level at which goals are set. Finally, they suggested that money might affect the degree to which people commit to goals. Although aspects of these three hypotheses have been tested at the individual level (Riedel, Nebecker & Cooper, 1988; Wright, 1990), these hypotheses have yet to be tested in a group setting. Given work organizations’ rapid increase in the use of pay-for-performance and incentive plans at the group or team level, this is clearly an area in need of further exploration and clarification.

We believe that the effectiveness of group incentives can be explained, in part, through the use of goal-setting theory. Given the multiplicity of possible goals within groups (Zander, 1980), goal setting may emerge spontaneously as groups attempt to allay the ambiguity in possible goals. According to Zander (1980), four types of goals can exist in groups: each member’s goal for the group, each member’s goal for himself or herself, the group’s goal for each member, and the group’s goal for itself. With no predetermined goals, groups might set goals spontaneously to allay ambiguity about appropriate performance. As Hollensbe and Guthrie (2000) suggest, this might be particularly true in groups that are small, efficacious, functionally interdependent, and strongly normative. In a study of processes that mediate the group goal-group performance relationship, Weingart and Weldon (1991) found that when given a group goal, some group members spontaneously translate it into a specific individual goal. Interestingly enough, these authors found no effect on group performance; however, their study did not include incentives.

In this experimental study we explored the extent to which the form of payment received by groups working on an interdependent task affected the propensity for group members to engage in spontaneous goal setting, the level of goal chosen by the group, commitment of individuals to group goals, and group task performance. This study builds on the work of Locke et al. (1981). Specifically, it examines the role of incentives in stimulating spontaneous goal setting and goal level chosen, as well as mediating influences in the incentive-performance relationship. More importantly, it is the first study to test the relationships proposed by Locke et al. (1981) in a group setting. Thus, it contributes to existing literature both by exploring understudied issues in the incentive-performance relationship and by extending the study of these issues to groups.

Hypotheses

Our study focused on the relationships among group incentives, the propensity to engage in spontaneous goal setting, chosen group goal level, goal commitment, and task performance. Below we provide arguments and research support for three hypotheses that propose
Group Incentives, Spontaneous Goal Setting, and Group Performance

There has been limited study of Locke et al.’s (1981) idea that incentives might influence the extent to which individuals will engage “spontaneously” in goal setting. Consistent with Locke and Latham (1990), we define spontaneous goal setting as occurring when individuals or groups engage in goal setting in the absence of designated or assigned goals. A limited number of individual-level studies have yielded mixed and inconclusive results. At a broad-brush level, two studies would be characterized as generally supportive (Riedel et al., 1988; Saari & Latham; cited in Locke & Latham, 1990), with three studies characterized as unsupportive (Terborg, 1976; Terborg & Miller, 1978; Wright, 1990). Of the five studies providing evidence, only one (Wright, 1990) was specifically designed to study the influence of incentives on spontaneous goal setting and only two (Riedel et al., 1988; Wright, 1990) had adequate statistical power on which to base conclusions (for example, the sample size for Terborg & Miller’s (1978) relevant analysis was n = 20). Of these two studies, the Riedel et al. (1988) study supported the conclusion that incentives positively influence spontaneous goal setting while (Wright, 1990) did not. Finally, no studies to date have examined spontaneous goal setting as a group-level phenomenon in the context of group-based pay-for-performance plans.

In discussing his failure to find support for the incentives-spontaneous goal-setting hypothesis, Wright concluded that “Although it may not yet be time to sound the death knell for this hypothesis, the results of this study cast further doubt on its validity” (1990, p. 257). Despite Wright’s pessimism, the incentive-spontaneous goal-setting hypothesis is not only
intuitively appealing, it is consistent with a basic tenet of both goal setting and cognitive psychology: “People motivate themselves and guide their actions through the exercise of forethought. They anticipate likely outcomes of prospective actions; they set goals for themselves and select courses of action designed to realize valued futures” (Bandura, cited in Locke & Latham, 1990, p. xii). If people set goals to “realize valued futures,” it is difficult to imagine that the prospect of monetary rewards does not stimulate self-set (i.e., spontaneous) goals. We believe the dearth of studies coupled with the equivocal results and the complete lack of research into this phenomenon in the group pay-for-performance context all argue for further study.

Research in this area is particularly important given the prevalence of group incentive plans that do not designate performance goals per se, but rather have pay formulas and thresholds. In these plans, thresholds are not goals but minimum specifications for when groups begin to earn bonus (Belcher, 1996; Gross, 1995). Hollensbe and Guthrie (2000) described such plans as “open-goal” plans and proposed that groups under such plans would likely engage in spontaneous goal setting. Since goals are not part of the group incentive plan architecture, goals emerge only insofar as groups in these plans set them on their own, motivated by the prospect of rewards. Groups receiving a portion of their pay based on performance might be more motivated to set performance goals than would be the case absent the reward contingency. This proposition has not been tested empirically at the group level.

The above discussion suggests that a possible underlying mechanism in the success of group incentives might be spontaneous goal setting. Further, this spontaneous goal setting might mediate the group incentive–group performance relationship. Hence, the following hypotheses:

H1a: Relative to groups under a fixed-pay plan, spontaneous goal setting will be higher in groups receiving a portion of their pay contingent on group performance.

H1b: Group-level spontaneous goal setting will partially mediate the relationship between group incentives and group performance.

**Group Incentives, Chosen Goal Level, and Group Performance**

Similar to spontaneous goal setting, there is a dearth of studies investigating Locke et al.’s (1981) second contention that monetary incentives might affect goal level choice (Campbell, 1982; Wright, 1989). Chosen goal level specifies a particular level of proficiency (selected by the group) as measured against a standard (past performance). This goal level can vary from a low level (relatively easy goal) to a high level (relatively difficult goal). The relationship between goal level and performance most often is proposed to be linear (O’Leary-Kelly, Martocchio & Frink, 1994; Locke & Latham, 1990). As goal level increases toward high (relatively difficult goal), performance increases; however, when an ability limit is reached with a high goal level, the relationship levels off (Locke & Latham, 1990). Weldon and Weingart (1993) suggested further that the relationship between goal level and expectancy of success is not linear, but at some threshold point, goal level becomes unreasonably high and expectancy of success decreases.
Although the relationship between goal level and performance has been studied (Weldon, Jehn & Pradhan, 1991), limited research has focused on the relationship between incentives and chosen goal level. At the individual level, research by Locke and Shaw (1984), Riedel et al. (1988), and Wright (1989) supported the positive effect of incentives on chosen goal level. In addition, consistent with Locke et al.’s (1981) proposition, research at the individual level (Lee et al., 1997; Riedel et al., 1988; Wright, 1989) found that goal level partially mediated the effect of incentives on individuals’ performance. No studies to date have examined these issues in the group pay context. Inferring from evidence provided by a limited number of studies at the individual level, the following hypotheses are proposed:

**H2a:** When asked to specify a goal, groups receiving a portion of their pay contingent on performance will set higher goals relative to groups under a fixed-pay plan.

**H2b:** Chosen group goal level will partially mediate the relationship between group incentives and group performance.

### Group Incentives, Goal Commitment and Group Performance

Goal commitment is an individual’s “attachment to or determination to reach a goal” (Locke & Latham, 1990, p. 125), and it has been identified as an antecedent to performance (Locke, Latham & Erez, 1988; Wofford, Goodwin & Premack, 1992). Given the centrality of goal commitment to goal-setting theory, the lack of studies directly focusing on the link between incentives and goal commitment is surprising. Additionally, as Wright (1989) reports, the few studies that do exist have suffered from methodological deficiencies, such as inadequate statistical power. As a result, findings to date have been somewhat inconclusive. For example, consistent with arguments made by Locke and Latham (1990), Riedel et al. (1988) found that incentive pay significantly influenced individuals’ tendency to commit to goals and that the positive influence of incentives was magnified as incentive size increased. Likewise, at the individual level, Wright (1989, 1992) found that incentives affected commitment, and goal commitment (partially) mediated the incentives–performance relationship. Other studies, however, have failed to support these relationships (e.g., Lee et al., 1997; Pritchard & Curtis, 1973). Again, no studies to date have examined these issues in the group pay context. Given the multiplicity of goals that might exist in groups, the influence of incentives on individuals’ commitment to group goals is a particularly salient issue (Hollensbe & Guthrie, 2000). Based on this discussion, we propose:

**H3a:** Relative to groups under a fixed-pay plan, groups receiving a portion of their pay contingent on performance will exhibit greater goal commitment.

**H3b:** Group goal commitment will partially mediate the relationship between group incentives and group performance.

Although our overarching interest was in the distinction between fixed and variable pay, we chose to distinguish further between “high variable” and “low variable” pay in our study design. This distinction is important since in organizations pay-for-performance
plans can vary greatly in the amount of pay at risk. For example, a performance bonus can add or subtract 10–20 percent of salary, while a commission-based structure can involve substantially more pay at risk, doubling (or reducing by half) anticipated pay. Because no research has determined the appropriate increment of pay at risk, we chose not to make specific predictions about pay-risk level (beyond fixed and variable). However, we did examine also whether the level of pay at risk (high or low) affected propensity to set goals spontaneously, chosen goal level and goal commitment, as well as whether more risk ultimately affected group performance.

Method

Overview

To test the study hypotheses, an experimental research design was employed. Subject groups were randomly assigned to performing the experimental task under one of three reward conditions: fixed rate of pay, low-variable pay, or high-variable pay.

Subjects

The sample for the study consisted of 270 undergraduate students drawn from management courses at a large Midwestern university. Student samples and laboratory studies are appropriate when the research question is considered universalistic, i.e., when the research question is: Can the hypothesized relationship be demonstrated at all (Kruglanski, 1975)? A controlled laboratory environment is consistent with the relevant stream of research in this area (cf. Lee et al., 1997; Locke & Shaw, 1984; Riedel et al., 1988; Wright, 1989, 1992), which has attempted to limit confounding factors and emphasize internal validity to establish, at a fundamental level, the relationship among incentives, goal-setting, and performance. Prospective students were told that participation in the study would enable them to make “an average of $9, with some earning less and some earning more” for about one hour of time. A sign-up sheet was made available with three spaces allotted for each time block. Each time block, containing a group of three students (90 groups in total), was randomly assigned a treatment. Average subject age was 21.47 years (S.D. = 1.93) with 46% of the participants being male (54% female).

Task

The task for the experiment was a sentence construction activity in which student groups were given a sentence and asked to manufacture words from letters in the sentence and then incorporate the manufactured words into three- to six-word sentences. Each group’s performance was determined by the total number of manufactured words incorporated into sentences that complied with the “production standards” listed on the task instruction sheet (e.g., “You may not use words with apostrophes”; “You may not merely add an “s” (plural) to a word and reuse it. If used in the singular form, it may NOT be used again,” etc.). Subjects participated in three 10-minute trials.
The sentence construction task has been used in prior goal-setting experiments (Locke & Latham, 1990) and is appropriate for this experiment as it creates the potential for interdependent work, a key characteristic of organizational work groups under group incentive plans. Task interdependence exists when members of the group work together to accomplish the task through exchanging information (Tjosvold, 1988), assigning roles to divide labor (Thomas, 1957) or building on one other’s performance (Mitchell & Silver, 1990). Although the sentence construction task could be accomplished independently, in our experiment, this was not how groups chose to pursue it. Rather, we observed that (1) group members interacted to perform the overall task through exchanging information about production standards, discussing the best use of time, and dividing the overall task into subtasks such as recording, generating words, constructing sentences, etc. and (2) group members built on one another’s performance through collective brainstorming, which often had synergistic effects; for example, one member’s contribution (such as the word “can”) triggered another’s contribution (such as the word “candy”).

The sentence construction task differs from a word-generation task such as one used by Weingart and Weldon (1991) in which group members worked at different tables and recorded their responses, silently and independently, on index cards, which were later pooled by the researchers. In the word-generating task in the Weingart and Weldon (1991) experiment, the group’s product was “additive” or the summative combination of outputs (Steiner, 1972; Weldon & Gargano, 1985), involving pooled interdependence (Thompson, 1967). While the sentence construction task in this experience might have been approached in this way, we observed much more reciprocity and exchange as the groups executed the task.

Several weeks prior to the experiment, we pilot-tested the task with 16 groups to determine performance standards for the actual experiment. Observations of groups during the pilot and a post-pilot debriefing confirmed that subjects typically exchanged information, divided the labor, and engaged in the task collectively.

Procedure

Each three-person group was placed in a private experiment room and introduced to the “study of group behavior.” Each person signed a “Consent and Confidentiality Statement” and completed a short demographic form. Participants were next given task instructions and questions were invited and answered. Each group was handed the first “raw material” sentence to be used in generating words and sentences for the first 10-minute trial. At the conclusion of this trial, the groups were introduced to the pay conditions (fixed, low-variable pay, high-variable pay) through a written memo. Group performance was measured as the total number of words produced that were incorporated correctly into sentences. For the variable pay groups, pay was partly a function of performance in the remaining two trials. A description of exact payment methods is included in the following section.

After the introduction of the pay conditions, trial one performance results were communicated to the groups. Groups were next given two minutes for a “group meeting.” They were then given the sentence to be used in generating words-in-sentences for trial two. Following this 10-minute trial, individuals were asked to rate the extent to which the group engaged in “spontaneous” goal setting prior to trial two. After this, performance in trial two was assessed and communicated to groups and efficacy measures relative to the upcoming
performance trial were collected. Next, groups were asked to choose collectively a goal for trial three; this was followed by individual assessments of each subject’s commitment to this group goal. After completion of another two-minute “group meeting,” the groups were given the “raw material” sentence to be used in trial three. At the completion of this 10-minute trial, groups were informed of their trial three performance, administered a manipulation check, and paid (in accordance with their pay condition).

Variables

Payment method. The method of payment to subject groups depended on the randomly assigned experimental condition. Groups (n = 30) in the fixed-pay condition received a flat rate of $9 for their participation. Groups (n = 30) in the low-variable pay and high-variable pay (n = 30) experimental conditions received a portion of their pay based on how well the group performed in the second and third performance trials. In the low-variable pay condition, groups were paid based upon the following formula: $6 + .03 (total number of valid words produced in performance trials two and three). Groups in the high-variable pay experimental condition were paid based upon the following formula: $3 + .06 (total number of valid words produced in performance trials two and three). The pay formulas were developed based on the performance of the groups who completed the task in the pilot test. Formulas were designed with the goal of paying subjects in all conditions an average of $9.

Manipulation check. The effectiveness of the group incentive manipulation was assessed in a post-experiment questionnaire. Subjects were asked to indicate whether their pay was fixed or based partly on group performance.

Group task ability. Consistent with most goal-setting studies and methodological prescriptions for conducting goal-setting research (Locke & Latham, 1990), we measured and controlled for task-specific ability. Each group’s task ability was measured as its performance in the first trial—prior to the introduction of experimental manipulation. This allowed for a measure of ability not confounded by incentive conditions. It should be noted here that trial one performance is not a true measure of ability, since it also picks up on other factors (e.g., motivation) that also impact performance; however, initial task performance has been used as a suitable proxy in many other studies (e.g., Lee, Locke & Phan, 1997; Moussa, 2000; Wright, 1989).

Group efficacy. Group efficacy is a group’s belief in its ability to perform successfully in a particular situation (Durham, Knight & Locke, 1997; Prussia & Kinicki, 1996). It is important to measure group efficacy because it is a well-known covariate of goal setting (e.g., Durham et al., 1997) and performance (e.g., Gist, Schwoerer & Rosen, 1989). In this study, group efficacy was measured using a form presenting a range (n = 20) of performance scores. Group members were asked individually to indicate their confidence that their group could achieve a particular score on the upcoming trial (performance trial three) using a “0 = Not at all confident” to “100 = Totally confident” scale. Individual-level ratings indicate individual group members’ confidence in their group’s
performance ability. Individual-level efficacy measures were an average of each group member’s confidence ratings across the 20 performance scores (Cronbach’s alpha = .93). A group-efficacy score was computed for each group by averaging the individual-level efficacy scores.

When individual-level data are collected as a means to assess a group-level construct, ensuring that the individual-level data are homogeneous is an important “prerequisite to assessing that the construct in fact applies to that group” (Klein et al., 1994, p. 199). Thus, tests were conducted to determine whether or not aggregation of individual scores to the group level was justified. First, a one-way analysis of variance revealed that the percentage of variance in individual efficacy measures explained by group membership was quite large ($\eta^2 = .67; F = 4.06; p < .001$). Dansereau, Alutto and Yammarino (1984) suggested that the $E$-ratio (the ratio of between $\eta$ to within $\eta$) obtained from within and between analysis (WABA) is a test of practical significance. The least stringent test of group-level aggregation requires the $E$-ratio to be greater than 1. Dansereau et al. (1984) suggested that surpassing $E$-ratio thresholds of 1.30 and 1.73 builds a much stronger case for the claim that a variable should be considered group level. With an $E$-ratio of 2.01, individual efficacy scores surpassed these thresholds and could appropriately be aggregated and treated as a group-level phenomenon; individuals within groups appear to share common perceptions regarding confidence in their group’s task performance capabilities.

Spontaneous goal setting. After completing the second trial, subjects were asked to assess the extent to which their groups discussed or designated performance goals prior to the second trial. As discussed by Wright (1990), an important consideration is the timing of the measurement of spontaneous goal setting. If a researcher asks individuals or groups about goal-setting behavior prior to a task, it is quite likely that this intervention will prime subjects to set goals which, in turn, might also affect performance. Thus, consistent with others who have explored this concept (Riedel et al., 1988; Wright, 1990), we collected spontaneous goal setting data after completion of the relevant trial (i.e., performance in trial two). Spontaneous goal setting was measured by asking subjects individually to indicate on a 5-point Likert scale the extent of their disagreement/agreement with the following items:

- Going into the second “Words-in-Sentences” trial, my group discussed or talked about performance goals for total output (i.e., number of words) that we wanted to achieve in the second trial.
- Going into the second “Words-in-Sentences” trial, my group designated a specific performance goal for total output (i.e., number of words) that we wanted to achieve in the second trial.

As above, we assessed the appropriateness of group-level aggregation of this two-item scale (Cronbach’s alpha = .82). A one-way analysis of variance revealed that the percentage of variance explained in this individual measure by group membership was fairly large and significant ($\eta^2 = .64; F = 3.54; p < .001$). The $E$-ratio for this measure was 1.75, which again exceeds the most stringent level (1.73) identified by Dansereau et al. (1984). Thus, individuals within the groups shared similar perceptions about their group’s discussion or designation of performance goals prior to the second trial.
Chosen group goal level. Prior to trial three, subjects were asked to discuss and agree upon jointly a goal for the number of words that the group would produce in trial three. The number of words the group specified was the measure of chosen group goal level.

Goal commitment. Goal commitment was measured using eight items (Cronbach’s alpha = .76) based on an inventory developed by Hollenbeck, Williams and Klein (1989). Examples of items include “I am strongly committed to pursuing the goal set by my group” and “I am willing to put forth a great deal of effort beyond what I’d normally do to achieve the group’s goal.” To test whether group goal commitment mediates the group incentive–group performance relationship (H3b), we first had to justify aggregating individual scores to the group level. Although a one-way analysis of variance supports group membership as a determinant of goal commitment (F = 1.38; p < .05), the E-ratio for this measure was .68, which fails to surpass Dansereau et al.’s (1984) least stringent standard. This analysis suggests that goal commitment cannot be treated as a group-level phenomenon. Thus, H3a and H3b cannot be adequately tested.

Group performance. Performance in trial two was used in analyses testing the mediational properties of group spontaneous goal setting in the group incentive–group performance relationship. Performance in trial three was used in testing the analyses involving the mediating role of chosen group goal level in the group incentive–group performance relationship.

Results

Correlations and descriptive statistics are presented in Tables 1 and 2. Table 2 also presents univariate F-tests and post hoc significance tests comparing variable means across

<table>
<thead>
<tr>
<th>Variables</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>
<th>9</th>
<th>M</th>
<th>S.D.</th>
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<td>1. Group task ability</td>
<td>-</td>
<td>.16</td>
<td>-</td>
<td>-</td>
<td>.02</td>
<td>.11</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.09</td>
<td>.24</td>
</tr>
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<td>2. Group efficacy</td>
<td>-</td>
<td>.24</td>
<td>-</td>
<td>-</td>
<td>.33</td>
<td>.33</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>.33</td>
<td>.10</td>
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<td>-</td>
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<td>.24</td>
<td>.14</td>
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<td>4. High-variable-pay condition</td>
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<td>.09</td>
<td>-.50</td>
<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>.35</td>
<td>.61</td>
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<td>-.50</td>
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<td>-</td>
<td>-</td>
<td>.35</td>
<td>.61</td>
</tr>
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<td>6. Group spontaneous goal setting</td>
<td>.07</td>
<td>.03</td>
<td>.24</td>
<td>.14</td>
<td>-.38</td>
<td>-</td>
<td>3.19</td>
<td>1.01</td>
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<td>7. Chosen group goal level</td>
<td>.24</td>
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<td>-.19</td>
<td>.07</td>
<td>.11</td>
<td>.67</td>
<td>-</td>
<td>.56</td>
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<td>8. Group performance—trial 2</td>
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<td>.03</td>
<td>-.18</td>
<td>.11</td>
<td>.67</td>
<td>-</td>
<td>-</td>
<td>46.46</td>
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<td>9. Group performance—trial 3</td>
<td>.35</td>
<td>.61</td>
<td>.09</td>
<td>.12</td>
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<td>.09</td>
<td>.04</td>
<td>.72</td>
<td>-</td>
<td>56.71</td>
<td>15.82</td>
</tr>
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</table>

Correlations ≥0.17 significant at p < .10; ≥0.21 at p < .05; ≥0.28 at p < .01; ≥0.34 at p < .001 (two-tailed test). N = 90 for all correlations.

a Performance in trial 1 (task performance prior to introduction of pay conditions).

b All pay conditions dummy coded as 0, 1.
Table 2
Variable means and standard deviations across experimental pay conditions

<table>
<thead>
<tr>
<th></th>
<th>Group ability</th>
<th>Group efficacy</th>
<th>Group spontaneous goal setting</th>
<th>Group performance (Trial 2)</th>
<th>Group goal level</th>
<th>Group performance (trial 3)</th>
</tr>
</thead>
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<tr>
<td>Total sample</td>
<td>28.59 (10.12)</td>
<td>36.32 (10.69)</td>
<td>3.19 (1.01)</td>
<td>46.46 (13.09)</td>
<td>60.27 (16.78)</td>
<td>56.71 (15.82)</td>
</tr>
<tr>
<td>High-variable pay (1)</td>
<td>27.00 (10.65)</td>
<td>36.08 (11.15)</td>
<td>3.39 (1.00)</td>
<td>47.00 (15.16)</td>
<td>62.70 (18.74)</td>
<td>59.30 (17.85)</td>
</tr>
<tr>
<td>Low-variable pay (2)</td>
<td>28.90 (11.76)</td>
<td>37.86 (11.06)</td>
<td>3.53 (84)</td>
<td>49.20 (13.07)</td>
<td>62.37 (17.93)</td>
<td>58.80 (17.22)</td>
</tr>
<tr>
<td>Fixed pay (3)</td>
<td>29.87 (7.62)</td>
<td>35.01 (9.99)</td>
<td>2.65 (.97)</td>
<td>43.17 (10.28)</td>
<td>55.76 (12.65)</td>
<td>52.03 (10.89)</td>
</tr>
</tbody>
</table>

Mean difference
(overall $F$ test)

$F = .618, p = .424$

$F = .537, p = .586$

$F = 7.599, p = .001$

$F = 1.656, p = .197$

$F = 1.658, p = .197$

$F = 2.020, p = .139$

Post hoc (LSD) tests

1 vs. 2, $p = .471$

1 vs. 2, $p = .523$

1 vs. 2, $p = .554$

1 vs. 2, $p = .514$

1 vs. 2, $p = .938$

1 vs. 2, $p = .908$

1 vs. 3, $p = .278$

1 vs. 3, $p = .701$

1 vs. 3, $p = .003$

1 vs. 3, $p = .256$

1 vs. 3, $p = .100$

1 vs. 3, $p = .075$

2 vs. 3, $p = .714$

2 vs. 3, $p = .308$

2 vs. 3, $p = .000$

2 vs. 3, $p = .076$

2 vs. 3, $p = .128$

2 vs. 3, $p = .097$

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$a$ Variables are presented in the table in accordance with the sequence in which the data were generated/collected in the experiment.

$b$ Group task performance in trial 1.

$c N = 90.$
Table 3
OLS results: incentives, group spontaneous goal setting, and performance

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group task ability</td>
<td>.484***</td>
<td>.503***</td>
<td>.503***</td>
</tr>
<tr>
<td>Group efficacy</td>
<td>.635***</td>
<td>.618***</td>
<td>.618***</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-variable-pay condition</td>
<td>–</td>
<td>.163**</td>
<td>.164**</td>
</tr>
<tr>
<td>High-variable-pay condition</td>
<td>–</td>
<td>.177**</td>
<td>.178**</td>
</tr>
<tr>
<td>Δ $R^2$</td>
<td>–</td>
<td>.029**</td>
<td>.000</td>
</tr>
<tr>
<td><strong>Step 3</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group spontaneous goal setting</td>
<td>–</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Δ $R^2$</td>
<td>–</td>
<td>–</td>
<td>.002</td>
</tr>
<tr>
<td>Model $R^2$</td>
<td>.738</td>
<td>.767</td>
<td>.767</td>
</tr>
<tr>
<td>Model $F$</td>
<td>122.610***</td>
<td>69.822***</td>
<td>55.201***</td>
</tr>
<tr>
<td>$N$</td>
<td>90</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

* $p < .10$, ** $p < .05$, *** $p < .01$, **** $p < .001$; all tests are two-tailed.
* The fixed-pay condition is the omitted benchmark dummy variable.
* Performance is group performance in trial 2, which followed the incentive condition manipulation, but preceded the group goal-setting intervention.
* Standardized regression coefficients are presented.
* $R^2$ is unadjusted.

conditions. While some differences across experimental conditions are revealed in Table 2, comparisons of outcomes such as chosen group goal level and group performance level lack important controls for group ability and group efficacy. These controls and the main hypotheses tests are contained in the OLS results provided in Tables 3 and 4.

Table 4
OLS results: incentives and group spontaneous goal setting

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group task ability</td>
<td>.064</td>
<td>.103</td>
</tr>
<tr>
<td>Group efficacy</td>
<td>.017</td>
<td>–</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-variable pay condition</td>
<td>–</td>
<td>.423***</td>
</tr>
<tr>
<td>High-variable pay condition</td>
<td>–</td>
<td>.362**</td>
</tr>
<tr>
<td>Δ$R^2$</td>
<td>–</td>
<td>.154***</td>
</tr>
<tr>
<td>Model $R^2$</td>
<td>.005</td>
<td>.159</td>
</tr>
<tr>
<td>Model $F$</td>
<td>.209</td>
<td>4.013**</td>
</tr>
<tr>
<td>$N$</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

* $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$; all tests are two-tailed.
* The fixed-pay condition is the omitted benchmark dummy variable.
* Standardized regression coefficients are presented.
* $R^2$ is unadjusted.
Manipulation Check

The manipulation check asked subjects to indicate whether they were paid a fixed rate or whether their pay was based partly on their group’s performance. For the purposes of this analysis, the pay conditions were coded 1, 2, and 3 (high-variable pay, low-variable pay, and fixed rate of pay) and the manipulation check item was coded as 1 (pay was partly based on group performance) or 2 (pay was a fixed amount). As indicated by the computed phi coefficient, the vast majority of subjects accurately perceived the payment method ($\phi = .93$; $p < .001$). Of the 270 total subjects, nine incorrectly identified their pay condition. These individuals were eliminated from individual-level analyses. However, group-level data for groups in which these individuals were members were retained for analyses and hypothesis testing.¹

Statistical Tests Of Hypotheses

Experimental payment conditions were coded as dummy variables, to reflect that they are categorical (Cohen & Cohen, 1983). This coding means that OLS regression beta weights reflect the relative difference between the included dummy variables and the omitted dummy variable. In the OLS analyses below, the low-variable pay and high-variable pay conditions are included, while the fixed-pay condition is the omitted benchmark condition.

Incentives, spontaneous goal setting, and performance. The relevant test of H1a is presented in Table 4, which shows the relationship between group incentives and group-level spontaneous goal setting. After controlling for group task ability ($\beta = .103; ns$) and group efficacy ($\beta = -.026; ns$), OLS results indicated that groups in the low-variable incentive pay condition ($\beta = .423; p = .000$) and high-variable incentive pay condition ($\beta = .362; p = .002$) were significantly more likely than those in the fixed-pay condition to discuss and/or designate performance goals. In sum, results support H1a: spontaneous goal setting was higher in groups working under variable-pay conditions vis-a-vis groups under the fixed-pay plan.

H1b proposed that group-level measures of spontaneous goal setting will mediate the relationship between group incentives and group performance. In discussing the process for examining proposed mediating effects, Baron and Kenny (1986) denote the relationship between the independent variable and a hypothesized mediator as Path $a$, the relationship between a hypothesized mediator and a dependent variable as Path $b$, and the relationship between the independent variable and dependent variable as Path $c$. According to Baron and Kenny:

A variable functions as a mediator when it meets the following conditions: (a) variations in levels of the independent variable significantly account for variations in the presumed mediator (i.e., Path $a$), (b) variations in the mediator significantly account for variations in the dependent variable (i.e., Path $b$), and (c) when Paths $a$ and $b$ are controlled, a previously significant relation between the independent and dependent variables is no longer significant, with the strongest demonstration of mediation occurring when Path $c$ is reduced to zero (1986: 1176).
To assess the existence of a mediating relationship, three regression equations are estimated. First, the dependent variable is regressed on the independent variable (establishing Path $c$), followed by the mediator being regressed on the independent variable (establishing Path $a$). Finally, the dependent variable is regressed on both the mediator and the independent variables (establishing Path $b$, the relationship between the mediator and the dependent variable, while controlling for the influence of the independent variable).

The OLS regression models relevant to H1b are presented in Tables 3 and 4. The first step was testing the influence of group incentives on performance. In this analysis, group performance was the number of words produced by groups in trial two, the performance trial preceding the goal-setting intervention. During trial two, groups had been introduced to the incentive manipulations, but had not yet been instructed to set goals. As displayed in Table 3 (Model 2), over and above the substantial influence of group ability ($\exists = .503; p = .000$) and group efficacy ($\exists = .618; p = .000$), the low variable ($\exists = .163; p = .009$) and high variable ($\exists = .177; p = .005$) pay treatments displayed strong relationships with trial two group task performance.

Per Baron and Kenny (1986), the second step was testing the influence of incentives on the hypothesized mediator. As discussed earlier, Table 4 shows a significant relationship between group incentive pay conditions and group-level measures of spontaneous goal setting. The third step of the Baron and Kenny (1986) procedure is presented in Table 3 (Model 3), where trial two task performance is regressed on the controls along with the independent variable and hypothesized mediator. As a mediator, group spontaneous goal setting should influence performance and attenuate the influence of the group incentive conditions. As indicated by the results, neither of these outcomes is observed. Thus, while group incentives prompted increases in both group-level spontaneous goal setting and group task performance, our results did not support a mediating role for spontaneous goal setting.

### Incentives, chosen group goal level, and task performance

The next set of analyses examined the relationship among incentives, chosen group goal level, and task performance. We first test H2a, which suggests that when instructed to set a performance goal, groups under a performance-contingent pay plan will set higher goals relative to groups under a fixed-pay plan. To test whether incentives influence group goal level choice, goal level was regressed on the incentive conditions (and the controls of group ability and group efficacy). Per Table 6, while groups in the low-variable pay condition did not differ significantly from the fixed-pay groups in their chosen goal level ($\exists = .116; ns$), groups in the high-variable pay condition did specify higher goals ($\exists = .188; p = .043$). These results partially supported H2a; groups having the greatest pay at risk set significantly higher goals than did groups under the other pay conditions.

We next tested H2b, which proposes that when groups are asked to specify a goal, this self-set goal will mediate the relationship between group incentives and performance. The OLS regression models relevant to H2b are presented in Tables 5 and 6. As a preliminary step, performance in trial three was first regressed on the incentive treatment conditions (in addition to the controls for group ability and group efficacy). As presented in Table 5 (Model 2), the beta coefficients and associated significance tests indicated that group task ability ($\exists = .280; p = .001$) and group efficacy ($\exists = .551; p = .000$) had large and positive task performance effects. Although trial three performance levels for
Table 5
OLS results: incentives, chosen group goal level, and performancea,b

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>β. ba</td>
<td>β. ba</td>
<td>β. ba</td>
</tr>
<tr>
<td>Group task ability</td>
<td>.256**</td>
<td>.280**</td>
<td>.182**</td>
</tr>
<tr>
<td>Group efficacy</td>
<td>.567***</td>
<td>.551***</td>
<td>.166*</td>
</tr>
<tr>
<td>Step 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-variable pay condition</td>
<td>–</td>
<td>.146</td>
<td>.074</td>
</tr>
<tr>
<td>High-variable pay condition</td>
<td>–</td>
<td>.229*</td>
<td>.112</td>
</tr>
<tr>
<td>ΔR²</td>
<td>–</td>
<td>.040*</td>
<td>–</td>
</tr>
<tr>
<td>Step 3</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Chosen group goal level</td>
<td>–</td>
<td>.622***</td>
<td></td>
</tr>
<tr>
<td>ΔR²</td>
<td>–</td>
<td>.204***</td>
<td></td>
</tr>
<tr>
<td>Model R²</td>
<td>.434</td>
<td>.473</td>
<td>.677</td>
</tr>
<tr>
<td>Model F</td>
<td>33.317***</td>
<td>19.103***</td>
<td>35.213***</td>
</tr>
</tbody>
</table>

N 90 90 90

† p < .10, * p < .05, ** p < .01, *** p < .001; all tests are two-tailed.

a The fixed-pay condition is the omitted benchmark dummy variable.

b Performance” is group performance in trial 2, which followed the incentive condition manipulation, but preceded the group goal-setting intervention.

c Standardized regression coefficients are presented.

d R² is unadjusted.

low-variable pay and high-variable pay groups were fairly similar (see Table 2), groups under the high-variable pay condition significantly differed from the fixed-pay groups in task performance (β = .229; p = .014), while groups in the low-variable condition did not (β = .146; p = .115).

Table 6
OLS results: incentives and chosen group goal levela,b

<table>
<thead>
<tr>
<th>Variables</th>
<th>Model 1</th>
<th>Model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>β. ba</td>
<td>β. ba</td>
</tr>
<tr>
<td>Group task ability</td>
<td>.138†</td>
<td>.159†</td>
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<tr>
<td>Group efficacy</td>
<td>.632***</td>
<td>.620***</td>
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<tr>
<td>Step 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low-variable pay condition</td>
<td>–</td>
<td>.116</td>
</tr>
<tr>
<td>High-variable pay condition</td>
<td>–</td>
<td>.188*</td>
</tr>
<tr>
<td>ΔR²</td>
<td>–</td>
<td>.027</td>
</tr>
<tr>
<td>Model R²</td>
<td>.447</td>
<td>.473</td>
</tr>
<tr>
<td>Model F</td>
<td>35.148***</td>
<td>19.104***</td>
</tr>
<tr>
<td>N</td>
<td>90</td>
<td>90</td>
</tr>
</tbody>
</table>

† p < .10, * p < .05, ** p < .01, *** p < .001; all tests are two-tailed.

a The fixed-pay condition is the omitted benchmark dummy variable.

b Performance” is group performance in trial 2, which followed the incentive condition manipulation, but preceded the group goal-setting intervention.

c Standardized regression coefficients are presented.

d R² is unadjusted.
Per Baron and Kenny (1986), the next step in testing for a mediating effect is examining the influence of the predictor variable(s) (group incentives) on the hypothesized mediator (chosen goal). As discussed above, Table 6 shows a significant relationship between incentives and group self-set goals, so this condition is met. The third step of the Baron and Kenny (1986) procedure is presented in Table 5 (Model 3), where trial three performance was regressed on the independent variables (incentive conditions), the proposed mediator (chosen goal level) and the controls (group task ability and group efficacy). An inspection of the regression weights and significance tests in Table 5 (Model 3) indicates that chosen group goal level had a very large influence on performance outcomes ($\beta = .622; p = .000$), whereas the influence of the high-variable-pay condition was substantially attenuated and no longer significant ($\beta = .112; ns$). We directly test this attenuation using a modification of the Sobel (1982) test statistic as suggested by Baron and Kenny (1986). This procedure follows Goodman (1960) in computing a standard error for the mediating effect and then calculating a $z$-score as the test statistic. The computed $z$-score (cf. Preacher & Leonardelli, 2001) was significant ($z = 1.99; p = .046$) indicating a significant mediating effect for group goal setting. In support of H2b, these results indicate that chosen group goal level partially mediates the positive effect of the high-variable group incentive manipulation on group performance.

Group incentives and commitment to group goals. H3a proposes that group incentives will act to strengthen group commitment to chosen group goals. However, since group-level aggregation was not justified, a test of group-level goal commitment could not be performed. As an alternative or post hoc examination, we ran an OLS regression at the individual level of analysis. In this analysis, performed on the 261 study participants correctly identifying their pay condition, the individual-level goal commitment scale was regressed on group task ability, individual-level self-efficacy ratings of group ability and the dummy variables representing the low-variable and high-variable pay conditions. This analysis indicated that individuals in the high-variable pay condition had significantly higher levels of goal commitment ($\beta = .148; p = .040$). While this finding might not necessarily generalize to the group level, it does provide some evidence that incentives might affect the commitment levels for individuals working within task groups. The hypothesis (H3b) proposing that group-level goal commitment will mediate the relationship between group incentives and group performance could not be adequately tested.

Discussion

Given the dramatic growth in both pay-at-risk and group incentive plans, the goal of this paper was to increase knowledge regarding processes underlying these plans. As such, we examined the extent to which placing pay at risk contingent upon group performance influenced goal setting and, ultimately, task performance. As mentioned earlier, Locke et al. (1981) suggested that incentives might affect performance by inducing spontaneous goal setting, affecting chosen goal level, and influencing goal commitment. The study reported here is the first to test these three hypotheses simultaneously in a group setting.

First, this study provided evidence related to Locke et al.’s (1981) concept of spontaneous goal setting. In speculating on the manner in which incentives, goals, and performance
interrelate, Locke et al. (1981) suggested that one role incentives might play is to stimulate individuals to set or generate goals spontaneously. This is an intriguing premise that has been largely ignored by researchers. At the individual level, Riedel et al. (1988) provided some evidence that the presence of incentives causes people to “think” more often about goals. The current study built upon this finding, extending it to the group context. Our results agree with Riedel et al. (1988), showing that incentives appear to bear at least moderate associations with spontaneous goal setting within pay group members. Groups reported that they more often discussed and designated goals when under a variable-pay condition than when under the fixed-pay condition. These group-level behaviors occurred spontaneously in the absence of assigned goals.

One of the purposes of this study was to examine the potential mediating role of spontaneous goal setting in the group incentive–group performance relationship. Although spontaneous goal setting occurred more often in groups under variable-pay plans, no support was shown for the hypothesis that spontaneous goal setting mediates the group incentive–group performance relationship. One can speculate about the possible reasons for the failure to observe this mediating role. Spontaneous goal setting might best be thought of on a continuum, ranging from cognitions to group discussions to goal specifications (Hollensbe & Guthrie, 2000). At the group level, this study operationalized this construct with items focusing on discussions and ratings of the extent to which groups had specified a performance goal.

One could argue that the detection of mediation might have been facilitated by asking group members to identify the specific goal that spontaneously emerged rather than asking members to provide ratings of the degree to which their group discussed and/or designated a goal. As noted earlier, the problem with asking about designated goals prior to the performance trial is that the question might prime subjects to set a performance goal. This could confound the measure of spontaneous goal setting and perhaps affect performance. On the other hand, if groups are asked about pre-performance targets after completing the performance trial, there is a significant risk that their responses might be biased or confounded by actual performance levels. Thus, an interesting challenge for future research in this area is developing a strategy for ascertaining the level of spontaneous goal setting without contaminating the investigation. One possibility would be to videotape or audiotape groups for the purpose of content analyzing communications for goal-related discussions and content. Judges could be used to estimate the degree to which groups discussed, designated and committed to goals. This might also allow researchers to better assess the degree to which spontaneous goals bear the goal characteristics that maximize performance-specific and challenging. In addition, taping communications might allow for investigation of the relationship between cooperative behavior and spontaneous goal setting. For example, in this experiment groups chose to work interdependently when they might have chosen to work more independently. Further research might explore whether or not teams engaged in spontaneous goal setting are, in fact, more likely to engage in cooperative behaviors.

Given the found relationship between group incentives and spontaneous goal setting (H1a), in tandem with the mediating role played by chosen goal level (H2b), it remains plausible that spontaneously set goals at least partially mediate the incentive-performance relationship in groups. If researchers can assess spontaneous goal setting with greater precision, a mediating role for spontaneous goal setting might still be revealed.
Also consistent with Locke et al.’s (1981) propositions, we examined the influence of group incentives on chosen group goal level and whether or not goal level mediates the relationship between incentives and group performance. To our knowledge, this is the first study to explore these relationships at the group level. Findings reveal that while group incentive pay positively and significantly impacted group goal choice, this was only true for groups working under the high-variable pay condition. Groups under the low-variable pay condition did not significantly differ from the fixed-pay groups. Thus, while group incentives appear to prompt groups to set higher goals, this is true only when a significant amount of pay is at risk. As noted by DeMatteo, Eby and Sundstrom (1998), it appears that team performance rewards must be “a noticeable increment” (p. 155). Determining the appropriate increment of pay at risk needed to induce higher goal setting is a task for further research.

Results also support a mediating role for group goals in that they appear to serve as a link between group incentives and group performance. Although this is the first time this linkage has been examined at the group level, these results are consistent with individual-level results reported by Lee et al. (1997), Riedel et al. (1988), and Wright (1989). This mediational role is apparent only in groups having the most pay at risk. Thus, while placing larger portions of pay contingent on group performance might be associated with greater performance, this effect might depend on chosen goal level. Allowing or encouraging groups to choose a goal level for a greater portion of their pay might ultimately enhance performance effects. Again, however, the appropriate portion of pay at risk is a question for further research.

A third level of findings related to goal commitment. Locke et al. (1981) suggested that goal commitment might be enhanced by monetary rewards. At the group level, there is great potential for heterogeneity in individual commitment levels around a group-designated goal. Achieving greater alignment with group and organizational goals is a primary reason firms utilize group incentives. Research to date, however, has focused almost exclusively on the influence of incentives on individual goal setting and associated commitment, with the results of these studies proving equivocal. In this study, we tested the effect of incentives on goal commitment within a group context. Because we could not justify group-level aggregation, in our supplemental analysis we examined the impact of payment method on individual ratings of commitment to the group’s chosen goal, finding that commitment elevates significantly only under the condition of high-variable pay. Thus, Locke and Latham (1990) might be correct in their assertion that there is a threshold level that must be exceeded in order for incentives to positively affect commitment levels. However, because our analysis did not support group-level aggregation, we were unable to examine whether or not group goal commitment mediated the group incentive–group performance relationship. This is consistent with our earlier statement regarding the “heterogeneity” of group members’ commitment levels.

Given the question of external validity of findings, practical recommendations emanating from these findings are tentative at best. One must be cautious in generalizing the results of an experimental study to the workplace; however, generalization is more defensible if the study isolates the essential elements of real-life settings (Locke, 1986). In this study, we tested three group incentive conditions, fixed pay, low-variable pay, and high-variable pay, selected to mimic the “essential elements” of real-life pay structure variance. At the same time, actual incentives in organizations exist in a more complex environment than can be created in a laboratory setting. Further, in addition to the “piece-rate” form of incentive
used in this study, there are many other forms of monetary incentives that could be used in laboratory studies (e.g., work standard incentive plans such as in Reidel et al. 1988, competitive bonus plans such as in Wright, 1990) or in practice. These alternative forms of incentive plans might impact goal-setting behavior in different ways. Although, by design, experimental studies allow for strong precision and control of internal validity, field studies of multiple incentive conditions would allow for inclusion of more contextual influences on the group incentive–group performance relationship and greater consideration of the complex systems in which groups operate (McGrath, 2000). A recommendation for future research is examining the impact of alternative forms of incentive plans on goal setting and also to pursue similar research questions field settings.

Another recommendation for future research would be to examine spontaneous goal setting over multiple trials to see if it changes over the course of development of the group. A limitation of this study is that the hypotheses regarding spontaneous goal setting were tested only once early in the group’s development (trial two). Similarly, the hypotheses regarding goal level and commitment were tested only once later in the group’s development (trial three). Thus, there is a potential limitation in the study design relating to time. Examining spontaneous goal setting over time might provide additional insights into its causes and effects. Further, it would be interesting to study spontaneous goal setting following the withdrawal of a provided goal to see if groups continue to pursue the goal (perhaps an anchoring and adjustment effect) or abandon goals altogether. Finally, future research might consider testing simultaneously mediating mechanisms in the group incentive–group performance relationship to see if, as a block, they fully mediate the relationship. Although not part of this study’s design, these topics would be interesting prospects for future research.

In summary, this study provides tentative support for the role of goals in the group incentive–group performance relationship. Its primary contribution is that it extends and builds on work done at the individual level and sheds light on the process and meditational factors underlying the positive results of group incentives increasingly observed in the workplace. Goal-setting theory provides a useful framework for understanding how incentives affect performance in groups. Given the prevalence of group incentive plans, understanding how they work is an important area for investigation. It is hoped that this study provides both information and motivation for future explorations in what has been a puzzling but intriguing area of research.

Notes

1. No group contained more than one person who incorrectly identified the experimental pay condition. Further, eliminating the nine groups containing these individuals did not change the pattern of group-level findings nor the conclusions regarding study hypotheses.

2. A reviewer noted that failure to find agreement presents an interesting finding, deserving of further attention (Klein, Conn, Smith & Sorra, 2001). Following this reviewer’s suggestion, we investigated whether goal-commitment agreement varied across pay conditions. For the fixed-pay groups, a one-way ANOVA ($F = 2.260; p = .004$) suggested that group membership predicted goal commitment level; between group
variance was significantly greater than within group variance, with an $E$-ratio of 1.09. On the other hand, in the low-variable ($F = .808; ns, E$-ratio = .39) and high-variable ($F = 1.01; ns, E$-ratio = .488) pay groups, group membership did not significantly account for variance in commitment levels. In essence, while average individual-level commitment to performance goals increased in groups having pay at risk, agreement surrounding these goals was reduced. A simple explanation might be that placing pay at risk had the intended effect of increasing commitment to group goals—but only for some group members. This would result in increased average commitment levels for groups having pay at risk, but also a concomitant decrease in group-level indices of agreement.

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References


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