NOTE

GROUP PAY-FOR-PERFORMANCE PLANS:
THE ROLE OF SPONTANEOUS GOAL SETTING

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Despite the increasing popularity of group pay-for-performance plans, relatively little theory exists regarding the dynamics of these plans. We integrate goal setting, pay plan characteristics, and group factors to explain and predict the effectiveness of what we call “open-goal” group pay plans. We introduce spontaneous goal setting as a process explanation and propose antecedents that affect a group’s propensity to set goals, the goal level chosen, and goal commitment. Finally, we discuss implications of our propositions for future research.

Many firms have implemented group-based pay-for-performance plans—a trend that is likely to continue (Flannery, Hofrichter, & Platten, 1996). In a recent survey Gross (1995) found that 51 percent of companies either had group pay programs or were considering instituting them. This trend is supported by impressive results, including increased productivity (Hansen, 1997; Kaufman, 1992), teamwork (Hatcher & Ross, 1991), pay satisfaction (Welbourne & Cable, 1995), group communication (Hanlon & Taylor, 1991), and decreases in grievances (Hatcher & Ross, 1991) and monitoring costs (Cooke, 1994). Group pay plans take on many names and forms, including profit sharing, gainsharing, team incentives, goal sharing, achievement sharing, winsharing, and results sharing (Belcher, 1996; Lissy, 1993; McNutt, 1990; Schuster & Zingheim, 1993).

The defining characteristic of group pay-for-performance plans is that compensation varies as a function of performance achieved by a group of employees. As we define it, a “group of employees” consists of any number of individuals engaged in interdependent work for interdependent rewards. In practice, groups under pay plans vary from small to plant wide, with the latter often comprising multiple, interdependent subgroups. Although much is known about how group pay plans are structured, little is known about how and why they are successful (Hatcher & Ross, 1991). As put succinctly by authors of a recent review, current practice regarding group rewards has “moved ahead of its basis in empirical research” (DeMatteo, Eby, & Sundstrom, 1998: 142).

In previous work authors have linked specific group pay plans to motivational theories (see Welbourne & Gomez-Mejia, 1995, for a review), identity theory (Welbourne & Cable, 1995), equity (Cooper, Dyck, & Frohlich, 1992), agency theory/organizational justice (Welbourne, Balkin, & Gomez-Mejia, 1995), and Deutsch’s theory of cooperation (DeMatteo et al., 1998; Hatcher & Ross, 1991). However, although researchers have recently begun to study the linkages among individual incentives, goal setting (e.g., Lee, Locke, & Phan, 1997), and behavioral choice (e.g., Sundby, Dickinson, & Michael, 1996), no authors have examined possible linkages between group pay plans and goal setting. We delineate why and how goal setting offers an explanation for the effectiveness of group pay plans, as well as insight into areas for future research.

As explained below, for some forms of group pay plans—those in which predetermined goals are specified—the role of goal setting is fairly intuitive. However, even when group pay plans have no predetermined goals or targets, we believe goals and goal setting still play a vital role.

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role. A principal proposal is that in these latter plans, referred to here as "open-goal" plans, the promise of rewards motivates group members to specify and pursue challenging performance goals, even when none formally exists. Borrowing from Locke and Latham (1990), we describe this behavior as "spontaneous" goal setting, and consistent with Locke and Latham (1990), we conceptualize spontaneous goal setting as a process in which goals are set not as part of a pay plan architecture but, rather, by group members stimulated by the prospect of financial rewards.

The particular focus of this work is specifying the role of spontaneous goal setting in open-goal plans. We begin by presenting a brief treatment of goal-setting theory as applied to group settings. This is followed by a general description of group pay-for-performance plans. We then develop propositions relating group factors and group pay plan characteristics to goal setting within groups.

GOAL-SETTING THEORY AS APPLIED TO GROUP SETTINGS

Goals affect performance by directing attention and action, mobilizing effort, and motivating individuals to develop goal-attainment strategies (Locke, Shaw, Saari, & Latham, 1981). In groups goals likely cause members to work both "smarter and harder" in cooperative pursuit of the goals. Locke and Latham define a goal as "a specific standard of proficiency on a given task, usually within a time limit" (1990: 26). "Goal difficulty" specifies a particular level of proficiency as measured against a standard. Goal-setting theorists most often propose a linear relationship between goal difficulty and performance (Locke, in press; Locke & Latham, 1990; O'Leary-Kelly, Martocchio, & Frink, 1994); in cases in which subjects reach the limits of their ability with difficult goals, however, this relationship levels off (Locke & Latham, 1990). Based on its equivalent in individuals, a group's goal commitment is its "attachment to or determination to reach a goal" (Locke & Latham, 1990: 125). Locke, Latham, and Erez (1989) identify goal commitment as an antecedent to performance, as do others (Wofford, Goodwin, & Premack, 1992).

We accept as given the basic tenets of goal-setting theory regarding goal difficulty or level and commitment and do not restate them here. Rather, we hope to move beyond standard goal-setting propositions in examining group pay-for-performance plans using a goal-setting framework.

GROUP-BASED PAY-FOR-PERFORMANCE PLANS

In some pay-for-performance plans both the reward structure and the performance goals are specified prior to performance. Goal-sharing pay plans are a prototypical example (Belcher, 1996). In goal sharing, goals are established for each performance metric in the plan, and group members receive the associated bonus if the goal is achieved. Along with goals, bonus amounts are specified in advance so that employees understand what they will receive for goal achievement. With bonuses yoked to specific targets, employee groups are motivated to perform to the target. As Belcher states, "In essence, the message sent by the goal-sharing plan is, 'If you achieve this goal, you will receive this amount of money' " (1996: 71).

Although it has not been applied in prior theoretical or empirical treatments of group-based pay plans, goal-setting theory has a relatively straightforward application in group pay plans, such as goal sharing, in which predetermined targets or goals exist. That is, prescriptions regarding the architecture and effects of predetermined-goal plans such as goal sharing emanate fairly directly from the goal-setting literature. When we move into the realm of open-goal group pay plans, however, the relevance of goal-setting theory requires more development and discussion.

In contrast with predetermined-goal pay plans such as goal sharing, open-goal plans have no performance goals per se. Instead, these plans have a pay formula that communicates to plan participants how performance will translate into rewards. Although the incentive formula for groups might incorporate a "threshold," this threshold, if used at all, is not a goal in the traditional sense. Instead, thresholds simply establish the minimum performance necessary for groups to begin to earn bonus. As such, when utilized, thresholds are typically established at fairly modest levels (Belcher, 1996; Gross, 1995). Thus, under open-goal plans, groups are performing, in essence, under a "do-your-best" goal
situations, in that performance goals are not specified (hence, the designation of these plans as "open-goal"). Since goals are not part of the plan architecture, goals come into play only if groups set them spontaneously—that is, on their own in response to financial incentives.

By way of illustration, gainssharing provides a well-known example of an open-goal group pay plan. Although the basic premise of gainssharing plans consistently involves bonus payout based on performance, plans differ in the formula used to calculate performance gains. Typically, however, rewards are calculated by comparing productivity or efficiency (output versus input) during a particular time period against a history-based standard (i.e., the threshold). A key difference between open-goal plans (such as gainssharing) and predetermined-goal plans (such as goal sharing and its relatives) is that with the former, reaching the threshold target does not earn incentive money; rather, it defines the starting point whereupon participants can begin to earn bonus money. Increased levels of performance above the threshold result in increased levels of reward.

A specific open-goal example is the group pay plan utilized at Nucor, a steel manufacturer, where groups of twenty-five to forty hourly workers participate in an incentive system and receive weekly bonuses based on steel tonnage production above a threshold. There are no specified performance goals and no maximum; workers earn larger bonuses based on amount of quality steel produced (Iverson, 1993; Woker, 1998).

We believe the success of groups in open-goal plans, such as at Nucor and other companies (e.g., Johnson, 1996), is largely due to goal setting in response to incentives. As such, our focus is on "spontaneous" goal setting as a mechanism for understanding the effectiveness of group pay plans. Further, we propose that group and pay plan characteristics will influence this spontaneous goal-setting process.1

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1 As pointed out by a reviewer, another interesting distinction across group pay-for-performance plans is whether they are "capped" or "uncapped." Fixed pay plans, such as goal sharing, are capped by their very nature, in that bonuses cannot exceed the amount to be paid if the plan's goals are met (Belcher, 1996). Open-goal plans, however, might or might not be capped. If they are capped, limits are often invoked to act as a safeguard against flawed plan design or employee "windfalls" resulting from extraordinary events with maximum payout amounts typically set fairly high. Regardless of whether or not open-goal plans contain caps, the more important feature is that they consistently do not contain predetermined goals. The only goal setting that takes place is "spontaneous": employees self-setting goals in response to the incentive formula. Thus, caps, per se, are not the issue; the issue is the presence (fixed goals) or absence (open goals) of predetermined goals.

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INTEGRATION OF GOAL-SETTING THEORY AND GROUP PAY PLANS

Having briefly discussed goal-setting theory as it applies to groups and key characteristics of group pay plans, we now integrate the two areas and identify factors that influence spontaneous goal setting in open-goal plans. We begin with a discussion of incentive intensity.

Group Pay Plan Incentive Intensity

The literature on incentives and goal setting shows that much of the effect of incentives is through their influence on goal setting. Locke et al. (1981) suggest that rewards might affect performance by influencing three different aspects of goal setting. First, they suggest that incentives might affect the level at which goals are set. Second, they propose that the prospect of monetary rewards might induce a greater degree of spontaneous goal setting. Finally, they suggest that money might affect the degree to which people commit to goals. We discuss incentive intensity as the payout level and frequency of a group pay plan. Plans with greater and more frequent bonus payout have greater incentive intensity.

Payout level. Payout level refers to the amount an employee can earn under the group pay plan. Although research on individual pay plans shows that reward size is correlated with pay satisfaction and motivation (Wagner, Rubin, & Callahan, 1988), little research exists on groups. In field studies of gainssharing (Kim, 1996; Zenger & Marshall, 1995), scholars have found that larger levels of bonuses contingent on group performance are associated with greater performance. DeMatteo et al. propose that the payout level in team rewards must be "a noticeable increment," and they point to the strong need for research on the appropriate size of rewards (1998: 155).
Payout frequency. Payout frequency is the frequency with which incentive pay is distributed to group members—a feature that varies among pay plans. For example, if they are linked to profits, incentives are often distributed on an annual basis. In other plans, such as gainsharing, incentives might be paid more frequently, often on a monthly basis, although plans vary from this standard (Lawler, 1990; Schuster & Zingheim, 1992). In the language of expectancy theory (Vroom, 1964), more frequent payouts and close temporal links between behaviors and rewards will increase instrumentality beliefs. Yet, little is known about how payout frequency interacts with other group pay plan components to affect performance.

A primary assertion in goal-setting theory is that incentives lead to increased performance through increasing commitment to incentive goals (Locke & Latham, 1990; Yukl & Latham, 1978). Riedel, Nebecker, and Cooper (1988) found that incentive pay significantly influences individuals' tendency to commit goals and that the positive influence of incentives is magnified as incentive size increases—a finding supported by Locke and Latham (1990). Similarly, we suggest that groups will feel more commitment to goals when the payout is greater and more frequent.

Although extant research supports the effect of incentive intensity on goal commitment, in it there is an assumption that a goal has been set, which, by definition, is not true of the reward structure in open-goal plans. We argue that in the absence of formally designated goals, incentives will positively influence the valence of performance outcomes, which, in turn, will affect the propensity of groups to set goals and the level of goals that are set. This relationship is inferred from equivocal evidence provided by a limited number of individual-level studies. Although in some of these studies (Terborg, 1976; Terborg & Miller, 1978; Wright, 1990) researchers have found no incentive–spontaneous goal-setting relationship, others have. Specifically, Riedel et al. (1988) and Saari and Latham (as cited in Locke & Latham, 1990) provide evidence that incentives increase the likelihood of this spontaneous goal setting. In addition, research by Locke and Shaw (1984) and Riedel et al. (1988) supports the positive effect of incentives on goal level. In sum, what emerges from the research is support for the following proposition.

Proposition 1: Incentive intensity in open-goal group pay plans will affect spontaneous goal setting and goal commitment. Groups receiving a larger portion of their pay contingent on performance and more frequent payouts will display a greater propensity to set goals spontaneously, will set more difficult or challenging goals, and will be more committed to the goals they set.

Group-Level Influences

We propose several group-level influences on goal setting and goal commitment in a group pay environment, including collective (group) efficacy, group size, interdependence, and group performance norms.

Collective (group) efficacy. Collective efficacy is a group's perception of its ability to perform successfully in a particular situation (Durham, Knight, & Locke, 1987; Prussia & Kinicki, 1996). Many authors have documented the importance of efficacy in achieving performance (Durham et al., 1997; Gist, Schwoerer, & Rosen, 1989; Prussia & Kinicki, 1996), as well as the effects of performance on subsequent efficacy (Silver, Mitchell, & Gist, 1995). Consistent with research on individual efficacy, collective efficacy should influence goal commitment.

If a group is stimulated by the prospect of incentives, collective efficacy also might affect the group's propensity to set goals and the choice of goal level in open-goal plans. There is a host of studies indicating a robust relationship between self-efficacy and chosen goal level in individuals (see Locke & Latham, 1990, for a review). Durham et al. (1997) extend this finding to groups and report that team efficacy influences team-set goal difficulty. Thus, research supports the conclusion that efficacy levels affect goal choice or goal level; intuitively, it seems likely that the propensity to set goals would also be influenced by efficacy. Groups with high levels of collective confidence would more likely specify goals as a step toward earning incentives (i.e., efficacy would promote spontaneous goal setting).

Group size. Group pay plans create and depend on peer communication and prosocial behavior (Hanlon, Meyer, & Taylor, 1994); these behaviors are more likely in smaller groups.
Heightened coordination demands in larger groups (Gladstein, 1984) might diminish the time available for cooperative maintenance work. Further, members of small groups might have a clearer line of sight between performance and rewards (Vroom, 1964).

Studies show that social loafing and free riding increase as the size of the group increases (Jackson & Harkins, 1985; Karau & Williams, 1993). This has been described as a 1/n problem (where n = group size) in which the direct returns to group members are diluted by a factor of 1/n (Hansen, 1997; Kruse, 1993). As the group grows larger, reward dilution and free riding increase. Thus, individuals in larger groups generally will be less committed to group goals. In smaller groups, in which behavior can be monitored, commitment to group goals is enhanced.

We also speculate that group size might affect a group's propensity to set goals and the level of goals chosen. Motivated by the prospect of earning greater rewards, smaller groups in an open-goal plan may more easily identify ways to cooperate and share information and workload. Members of small groups also might have fewer concerns about free riders. Thus, in contrast with larger groups, smaller groups might engage in goal setting more often and set more challenging goals.

**Interdependence.** Interdependence is a defining characteristic of groups. Three types of interdependence are relevant here—task, reward, and goal interdependence—and they exist both within and between groups. Changing technology and the flattening of hierarchies have contributed to greater task interdependence within groups and between groups. The prevalence of group pay has contributed to interdependence in outcomes received (Wageman & Baker, 1997), and efforts to link workgroup goals with organizational strategy (Terpstra & Rozell, 1994) depend on goal interdependence as well (Wageman, 1995).

Interdependence is functional to the extent it relies on clear coordination of tasks and optimal integration of the work among differentiated units (Thompson, 1967), as well as coordination and integration of rewards and goals within and between groups. Functional interdependence might increase the motivational properties of the work and the efficiency with which work is performed (Campion, Medsker, & Higgs, 1993); thus, it might also affect a group's commitment to meeting group pay plan goals. Alternatively, dysfunctional interdependence might hamper group and organizational effectiveness. This might be particularly true when between-group task interdependence and within-group reward interdependence exist, which might lead to competition between teams (DeMatteo et al., 1998; Mohrman, Mohrman, & Lawler, 1992).

As with group efficacy and size, interdependence also might affect a group’s propensity to engage in goal setting and the level of goals set within open-goal environments. In a functionally interdependent group, it is more likely that the optimal coordination and integration required to set goals exist. Tjosvold (1988) found that collective interdependence results in positive expectations, exchange of information and resources, productivity, cohesion, and morale. These effects would likely prompt groups to set challenging goals, based on the availability of expanding group resources.

**Group performance norms.** Group norms are the group’s shared beliefs or the standards that guide members’ behaviors (Jehn, 1997; Johnson & Johnson, 1991); they also indicate what level of performance is appropriate and possible (Locke & Latham, 1990). Group norms are known to influence commitment to low goals in the form of restriction of output (Roethlisberger, 1939). Alternatively, strong norms might produce commitment to high goals (Locke & Latham, 1990).

The effect of group norms on goal commitment might be particularly profound in open-goal plans, where no formal goals exist. As groups under open-goal plans face nonspecific goals, group norms are more likely to emerge to enable the group to cope with uncertainty (Schein, 1990) and to exert a greater influence over behavior. Group norms also might affect a group’s propensity to set goals spontaneously, as well as the level of those goals. Groups with strong norms supporting achievement would be more likely to specify challenging goals. Based on this discussion of group influences, we propose the following.

*Proposition 2: Characteristics of open-goal groups will affect spontaneous goal setting and goal commitment. Smaller groups with higher*
collective efficacy, functional interdependence, and strong group performance norms will display a greater propensity to set goals spontaneously, will set more difficult or challenging goals, and will be more committed to the goals they set.

**Group Performance Feedback**

As a final proposition, we suggest that performance feedback influences the propensity of groups in open-goal group pay plans to set challenging goals and to remain committed to them. Under group pay plans, performance feedback is often available or provided separately from actual reward distribution. For example, a running record of groups' performance might be posted with regular updates provided. In studies at the individual level, researchers have found that introduction of performance feedback is "enough to almost guarantee ‘spontaneous goal setting’” (Locke & Latham, 1990: 188). Basic reinforcement theory indicates that feedback is most likely to influence behavior when it is provided frequently and in temporal proximity to performance.

If we extend this finding to groups in open-goal plans, we should find that frequent, timely performance feedback affects goal setting, with performance feedback acting as a catalyst for continued revision of goals oriented toward the possibility of future rewards. Frequent, timely knowledge of results gives group members a standard to exceed that "could increase the valence of high or improved performance” (Locke & Latham, 1990: 122) and leads groups in open-goal pay environments to set higher goals. As an extension of goal-setting research, we propose the following.

**Proposition 3:** Performance feedback in open-goal groups will affect spontaneous goal setting and goal commitment. Groups receiving frequent, timely feedback will display a greater propensity to set goals spontaneously, will set more difficult or challenging goals, and will be more committed to the goals they set.

**IMPLICATIONS FOR THEORY DEVELOPMENT: TOWARD A RESEARCH AGENDA**

We have presented spontaneous goal setting as a process explanation for the effectiveness of open-goal group pay plans. Portions of our argument are grounded in extant research, but other aspects suggest avenues for future empirical examination. In open-goal plans specific performance targets are not paired with incentives; instead, workgroups find themselves in essentially a "do-your-best" goal situation. A long line of goal-setting research pieces on individuals strongly suggests that "do-your-best" goals are less effective in raising performance than are specific, challenging goals. Our propositions help explain the apparent contradiction between the effective practice of using open-goal pay plans (e.g., in firms such as Nucor) and research supporting the inferiority of open-ended goals. We suggest the apparent contradiction is illusory in that intense incentives, when paired with particular group characteristics, will stimulate groups to formulate ambitious performance goals. Our propositions offer guidance on conditions associated with successful open-goal pay plans, but they also raise many issues.

For example, we offer spontaneous goal setting as a process mechanism underlying the success of open-goal group pay plans. We outline antecedents in open-goal environments that might lead groups to spontaneously set challenging goals and remain committed to them. As with most theoretical propositions, ours are speculative and suggest questions for future research. For example, how exactly do groups in open-goal pay plans engage in spontaneous goal setting? Moreover, how is "group goal setting” defined? What role do individual differences, such as personality, play in group goal setting? Are extrinsically motivated individuals (Amabile, Hill, Hennessey, & Tighe, 1994) more likely to promote group goal setting in the context of incentives?

Although incentives might magnify a group's propensity to set goals, a more fundamental explanation for the emergence of spontaneous goal setting in groups might lie in the ambiguity that exists in groups about the definition of acceptable performance. This ambiguity is partly a function of the multiplicity of possible goals in a group. 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 in open-goal plans might set goals spontaneously to allay ambiguity about appropriate performance. As we suggest, this might be particularly true in groups that are small, efficacious, functionally interdependent, and strongly normative. Additionally, when more pay is at risk, payouts are frequent, and knowledge of results is timely, conditions are ripe for a goal-setting response.

The question of how groups generate goals when none exists also poses possibilities for research. Essentially, goal generation requires decision making to determine future performance targets. Bayesian analysis indicates that in conditions in which several courses of action are possible and a risk-filled set of future possibilities exists, decision making occurs recursively (Schmidt & Hunter, 1977; Svyantek, O'Connell, & Baumgardner, 1992). Under these conditions, a group uses prior information to assess the effects of a current decision. This prior information might be based on accumulated knowledge of past performance or on the intuition of experts, and it is constantly revised based on data accumulated over a series of performance trials (Svyantek et al., 1992).

If we apply this analytic approach to open-goal group pay plans, we can draw parallels that might help elucidate how groups generate goals. For example, under open-goal pay plans, conditions exist in which several performance levels are possible, multiple types of possible goals exist, and the design of the reward system entails a set of future possibilities that is risk filled. Knowledge of results or feedback, as well as the intuition of group members, serves as prior information in group pay plans. When timely, frequent feedback is provided and pay-out entails higher risk and more frequent return, groups have the tools and motivation to recursively and consensually assess and reassess their performance. Thus, groups can continue to engage in "spontaneous" goal setting: setting and revising goals for future performance based on these assessments. Unlike in group pay plans in which goals are predetermined, static, and less susceptible to feedback, in open-goal pay plans goals are emergent, dynamic, and highly susceptible to feedback. The latter conditions might allow for Bayesian revision making of goals in a much more dynamic and complex goal-setting process.

Research is also needed to help clarify the contours of the group goal-setting construct itself. It is unclear, for example, if a goal is set when specific performance targets are cognitively assessed by individual group members or only when a goal is discussed and agreed to by all members. Even more so than at the individual level, group goal setting is complex—perhaps best represented as a continuum ranging from cognitions to discussions and, finally, to group agreements on performance goals. Incentive intensity and group characteristics might play a role in determining a group's location on this continuum. The specific nature of the relationship between incentive intensity and propensity to set goals and goal commitment requires investigation. For example, is the relationship linear or, similar to merit pay increases (Mitra, Gupta, & Jenkins, 1995), is there a critical level that must be exceeded before a reward is viewed as meaningful and, thus, a catalyst for groups to engage in goal setting?

Answering questions proposed here is fundamental to understanding the dynamics of group pay plans and providing guidance for compensation practice.

In conclusion, we believe that spontaneous goal setting offers a robust explanation for group pay plans and provides insight into areas for future research. The propositions we outline contribute a vital first step to understanding the complex environment in which group pay plans operate. In addition, they stimulate interesting theoretical and practical questions and provide a starting point for further empirical work on refining and more closely specifying proposed relationships.

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