PERFORMANCE AND LEARNING
GOAL ORIENTATIONS AS
MODERATORS OF SOCIAL LOAFING
AND SOCIAL FACILITATION

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The social loafing and social facilitation phenomena were examined in contexts that encourage the adoption of either performance or learning goals. Social loafing and social facilitation were operationalized using a manipulation of evaluation potential by others (coparticipants and experimenter) present in the experimental situation. Performance goal instructions were controlling and emphasized the testlike nature of the task, whereas learning goal instructions were autonomy-supportive and emphasized its learning aspects. As expected, increases in evaluation potential resulted in increases in performance, lending support to a hypothesized continuum of evaluation potential underlying social loafing and social facilitation. The social facilitation effect was more pronounced in the performance goal compared to the learning goal context. In contrast, the social loafing effect was not moderated by context. Implications for group situations are discussed.

A topic of concern in social psychology is the influence of groups on individual behavior. A key question in this area of research is “How does working in a group affect individual task performance?” The answer that most often follows is “It depends.” Consistent with this statement, independent lines of group research have identified two phenomena, social loafing (Ringelmann, as cited in

AUTHORS’ NOTE: This study was completed while Marylène Gagné was supported by a doctoral fellowship from the Social Sciences and Humanities Research Council of Canada. Special thanks to Richard Koestner for his helpful comments on an earlier draft of this article. Correspondence can be sent to Marylène Gagné, Department of Clinical and Social Sciences in Psychology, University of Rochester, Rochester, NY, 14627; e-mail: gagne@psych.rochester.edu.

SMALL GROUP RESEARCH, Vol. 30 No. 5, October 1999 524-541
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Social loafing is the term used to describe a reduction in effort by a person working in a group. A common explanation for this reduction is that an inability to identify or evaluate individual performances in a group situation, which leads individuals to conclude that nothing can be gained from effort spent on their performance (Williams, Harkins, & Latané, 1981). Social facilitation is the term used to describe an increase in effort by a person working in a group. Common explanations for this increase are arousal from the mere presence of others (Zajonc, 1965) and evaluation apprehension (Cottrell, 1972).

Regarding the role of evaluation potential in social loafing, Latané, Williams, and Harkins (1979) conducted a series of experiments in which they asked participants to shout and clap hands either alone or in a collective situation. They found that people shouted or clapped hands less vigorously in the collective condition (where performance was recorded without the participants’ knowledge) than in the alone condition. Research later identified different types of evaluation potential, such as experimenter evaluation, coworker evaluation, and self-evaluation, all of which were shown to moderate social loafing (Harkins & Szymanski, 1988, 1989; Szymanski, 1991; Szymanski & Harkins, 1987). In the present study, we restricted evaluation potential to evaluation by the experimenter and coparticipants only, as self-evaluation would bring up more complex motivational issues not dealt with in the present experiment.

Regarding the role of “mere presence” in social facilitation, Zajonc (1965) found that the mere presence of others increased arousal, which in turn increased the likelihood of the more dominant responses in the hierarchy of possible responses. Thus, the presence of others appeared to enhance performance for easy tasks (in which the correct response is dominant) but to impair performance for difficult tasks (in which the correct response is not dominant). In contrast, Cottrell (1972) conceptualized social facilitation in terms of evaluation apprehension, suggesting that people work
harder in the presence of others to obtain positive evaluations. Although numerous studies have attempted to disentangle the effects of mere presence from evaluation apprehension, both explanations have received some empirical support (Bond & Titus, 1983; Geen, 1979; Geen & Bushman, 1989; Harkins, 1987; Henchy & Glass, 1968; Klinger, 1969; Schmitt, Gilovich, Goore, & Joseph, 1986), leading some researchers to argue for additive effects (Geen, 1991; Guerin, 1986; Seta, Crisson, Seta, & Wang, 1989).

Several investigators raised the idea of combining social loafing and social facilitation into a single experimental design (Griffith, Fichman, & Moreland, 1989; Harkins & Szymanski, 1987). Harkins (1987) tested this idea in a 2 × 2 design, conceptualizing social loafing as an evaluation potential phenomenon and social facilitation as a mere presence phenomenon. One experimental factor (evaluation versus no-evaluation) was expected to produce a social loafing effect; evaluation was manipulated by varying the extent to which the experimenter could evaluate individual performance. The second experimental factor (alone versus group) was expected to produce a social facilitation effect. Because in all conditions only the experimenter could possibly evaluate performance, social facilitation would represent a mere presence phenomenon. A brainstorming activity was used as the experimental task. As hypothesized, Harkins found that performance was lower in the no-evaluation than in the evaluation condition (a social loafing effect) and lower in the alone than in the group condition (a social facilitation effect).

As mentioned above, however, evaluation potential appears to play a role above and beyond mere presence in social facilitation, and it also underlies the social loafing effect. If one follows Latané et al.’s (1979) explanation for social loafing and Cottrell’s (1972) conceptualization of social facilitation, then both phenomena could be anchored along a single continuum of evaluation potential (Harkins & Szymanski, 1987); it is clearly more parsimonious to explain social facilitation and social loafing on the basis of a single continuum than to view them as independent phenomena. In this approach, social loafing occurs in collective situations where people work together and individual performances are pooled, so that no one (not even the experimenter) can evaluate individual
performance; in contrast, social facilitation occurs in coactive situations, where people work together but individual performances are not pooled, so that coworkers (in addition to the experimenter) can assess each other’s performance. Stated differently, the presence of other people can lead either to social loafing or to social facilitation, depending on how that presence affects evaluation potential. When the presence of other people interferes with evaluation of performance (low evaluation potential), it should result in social loafing. When the presence of other people facilitates the evaluation of performance (high evaluation potential), it should result in social facilitation.

The present study manipulated level of evaluation potential along a single continuum by varying the extent to which the experimenter and coparticipants could identify how each individual performed. Social loafing would occur when no one knows how the individual performs; social facilitation would occur not only when the experimenter but also when the coparticipants know how the individual performs. These effects were assessed by comparing the above two conditions to a baseline where only the experimenter could assess performance. In all conditions, the number of people present was held constant to control for the mere presence effect. As noted earlier, the idea of testing social facilitation and social loafing within a single design is not new (Harkins, 1987; Harkins & Szymanski, 1987). However, to the best of our knowledge, the present study was the first to construe and empirically test both phenomena along a single continuum of evaluation potential.

Underlying the current experimental design is the view that evaluation potential is an environmental contingency. However, it has been shown that the effects of extrinsic contingencies can be moderated by the person’s motivational orientation (Deci & Ryan, 1985b). Specifically, Ryan (1982) demonstrated that a controlling environment where high performance is stressed produces a more extrinsic motivational orientation toward a task, whereas an autonomy-supportive environment where learning and enjoyment are stressed produces a more intrinsic motivational orientation. An extrinsic orientation triggered by a controlling environment makes one more sensitive to environmental contingencies, such as
obtaining rewards, decreases enjoyment of a task, and increases feelings of pressure. In contrast, an intrinsic orientation triggered by a more autonomy-supportive environment makes one more attuned to personal needs and interests, increases enjoyment, and decreases feelings of pressure (Deci & Ryan, 1987).

Another body of research demonstrated that goal adoption can foster similar approaches to tasks (Elliott & Dweck, 1988; Koestner & Zuckerman, 1994). Adopting a performance goal leads one to focus on demonstrating competence relative to other people; adopting a learning goal leads one to focus on mastering the task and has been shown to increase task enjoyment (Elliot & Harackiewicz, 1996). The close relationship between motivational orientations and goal adoption received support from a study by Koestner and Zuckerman (1994). They demonstrated that people who have an autonomous orientation style (measured with the General Causality Orientations Scale [GCOS]; Deci & Ryan, 1985b) tend to adopt learning goals, whereas people who have a controlled orientation style tend to adopt performance goals. Similar results can be expected from manipulating people’s motivational style toward a task, for example, by using autonomy-supportive and controlling instructions (Deci & Ryan, 1987).

Building on these results, the second goal of the present study was to assess the effects of goal adoption on the strength of the social loafing and social facilitation effects. Because we predicted that social loafing and social facilitation effects would be produced by varying evaluation potential—operationalized here as an external contingency—we also predicted that varying the context from one that emphasizes performance to one that emphasizes learning would affect the size of the social loafing and social facilitation effects. Specifically, adopting a performance goal would lead one to focus more on evaluation from the experimenter and/or coparticipants, leading, in turn, to greater social loafing and social facilitation effects. In contrast, adopting a learning goal would lead one to focus less on evaluation from these sources, leading, in turn, to smaller social loafing and social facilitation effects. We also measured motivational orientations at the trait level through the GCOS.
to check for the possible interaction between trait and state motivational orientations toward the experimental task.

OVERVIEW OF THE PRESENT STUDY

Participants were recruited to take part in a brainstorming experiment (Harkins & Petty, 1982), which consisted of generating uses for a knife, a task that is relatively easy and moderately interesting (average interest in the present experiment was 4.87 on a 7-point scale). The design combined the typical conditions of social loafing and social facilitation through a single manipulation of evaluation potential of performance. A social loafing effect was expected in a condition where performances were pooled, and neither the experimenter nor coparticipants could evaluate performance (low evaluation potential); a social facilitation effect was expected in a condition where both the experimenter and coparticipants could evaluate performance (high evaluation potential). To assess social loafing and social facilitation effects, the low and high evaluation potential conditions were compared to a baseline condition where only the experimenter could evaluate performance (medium evaluation potential). These three conditions were crossed with a manipulation of goal orientation; about half of the participants received instructions that encouraged the adoption of a performance goal, whereas the other half received instructions that encouraged the adoption of a learning goal.

METHOD

PARTICIPANTS

Two hundred and eighteen undergraduate volunteers (56 males and 162 females) participated in a laboratory experiment for extra credit and were randomly assigned to one condition in a 3(low, medium, high evaluation potential) × 2(performance goal, learning goal instructions) between-subjects design.
PROCEDURE

Participants came to the laboratory in same-sex groups of three and were seated at a long table separated by partitions that prevented them from seeing or hearing each other while they were working. They were told that the purpose of the study was to examine the relationship between personality styles and brainstorming. After signing a consent form, they filled out the GCOS (Deci & Ryan, 1985a); the scale did not produce any results of interest and will not be discussed further. They were then asked to generate uses for a knife for 12 minutes, writing each use on a separate slip of paper. Participants were randomly assigned to one of three conditions:

Low evaluation potential condition. Participants were asked to fold their pieces of paper and to slide them down a tube in front of them that extended into a closed box. The box had been previously shown to the participants so that they could see that their outputs were pooled. Participants were told that only their group performance would count. (In reality, individual performance was assessed using invisible ink to identify people’s slips of paper.) Thus, it seemed to participants in this condition that neither the experimenter nor coparticipants could assess individual performance.

Medium evaluation potential condition. Participants were asked to fold each piece of paper and to deposit it in an individual box in front of them, not visible to the others. They were told that only their individual performance would count and not the group performance. Participants in this condition were thus led to believe that only the experimenter could assess individual performance.

High evaluation potential condition. Partitions were removed for this condition, so that participants could see and hear each other. Participants were asked to fold their pieces of paper and to deposit them in separate boxes placed in front of them. They were told that only their individual performance would count and not the group performance. In this condition, therefore, it seemed to the participants that the experimenter could evaluate their performance and,
because participants could see each other working on the task, they could evaluate each other as well.

In sum, the social loafing effect could be examined by comparing the low to the medium evaluation potential conditions, and the social facilitation effect could be examined by comparing the medium to the high evaluation potential conditions. Note that together, the three experimental situations could also be viewed as a continuum from low to high evaluation potential.

Within each of these three conditions, about half of the participants received instructions that encouraged the adoption of a performance goal, and the other half received instructions that encouraged the adoption of a learning goal.

Performance goal instructions. The goal of the study was described as examining performance on a brainstorming test (Grolnick & Ryan, 1987), which was presented as a problem needing to be solved with limited time and resources. Desirable performance was described as high test scores, that is, the number of uses generated. Consistent with Ryan’s (1982) controlling and Elliott and Dweck’s (1988) performance goal instructions, we used sentences such as “you should work hard” and “you are required to.” For example, participants were told,

The experiment requires that you (your group) do the best you (it) can. In fact, the goal is for you (this group) to do better than other (groups composed of) people of your age and educational level.

Learning goal instructions. The goal of the study was described as looking at performance on a brainstorming task, which was presented as a challenge for which one can use different resources to find creative solutions. The generation of ideas as opposed to test scores was emphasized. Consistent with Ryan’s (1982) autonomy-supportive and Elliott and Dweck’s (1988) learning goal instructions, we used sentences such as “we would like you to” and “your task is to.” For example, participants were told that the study was structured
so that you can learn a lot about your own creativity. I realize that it is not always easy to find uses for objects, but you can let yourself go at this task and see what happens. We wanted to provide you with an opportunity to express yourself, to discover something about the object and perhaps something about yourself. People use a variety of strategies to be creative, and, of course, you can use the strategies that work best for you.

After spending 12 minutes generating uses, participants filled out a questionnaire about how they experienced the task, including (a) manipulation checks on evaluation potential; (b) situational motivation; (c) feelings of autonomy, pressure, competence, and interest. All questionnaire items were answered on a 1 = strongly disagree to 7 = strongly agree scale. Participants were then fully debriefed and thanked for their participation.

MEASURES

Evaluation potential. Participants indicated on a single item the extent to which the experimenter could evaluate their performance: “At the end of the experiment, the experimenter will be able to tell how many uses for a knife I generated.” On a second item, participants rated the extent to which coparticipants could evaluate their performance: “During the experiment, other group members were aware of how many uses for a knife I generated.” These items checked the effectiveness of the evaluation potential manipulation.

Situational Motivation Scale (Guay & Vallerand, 1995). Four items assessed intrinsic reasons, and four items assessed extrinsic reasons for doing the brainstorming task. Examples of items are the following: “[I did the task] because I thought it was a lot of fun” (intrinsic reason) or “because I was obligated to do it” (extrinsic reason). Reliabilities (Cronbach’s alphas) for the four-item intrinsic and the four-item extrinsic subscales were .80 and .70, respectively.

Autonomy, pressure, and competence. Two items measured perceived autonomy, three measured perceived pressure, and two measured perceived competence. Examples of items are: “I felt that
the task did not allow much choice or flexibility” (autonomy, reversed), “I felt pressured to find as many uses for a knife as possible” (pressure), and “I was not very efficient at doing the task” (competence, reversed). The effective reliability for autonomy was .46, the reliability (Cronbach’s alpha) for pressure was .70, and the effective reliability for competence was .69. The autonomy and pressure items measured the effects of the instruction manipulation on people’s motivational orientation; competence, however, was expected to remain constant across conditions.

**Interest.** Two items measured interest in the task: “I was extremely curious about the unusual uses for a knife that I could find” and “I was extremely interested in the task.” The effective reliability for this scale was .72.

**RESULTS**

The dependent variables were examined in analyses of variance using a 3 (evaluation potential) × 2 (instructions) between-subjects design. Sex was originally included as a third between-subjects factor but did not produce any results of interest and so was dropped (p > .1).

**MANIPULATION CHECKS**

There was a main effect for evaluation potential on perceived evaluation from the experimenter, $F(2, 209) = 37.11, p < .001$, such that participants in the low experimenter evaluation condition felt that the experimenter could evaluate them less ($M = 3.48$) than participants in the other two conditions (medium, $M = 5.80$; high, $M = 5.50$); the contrast comparing the first with the latter two conditions was highly significant, $t(209) = 7.89, p < .001, r = .48,^2$ whereas the contrast comparing the medium and high conditions was not significant, $t < 1$. There was a main effect for evaluation potential on perceived evaluation from coparticipants, $F(2, 209) = 18.35, p < .001$, such that participants in the high evaluation potential condition felt that coparticipants could evaluate them more ($M = 4.38$)
than participants in the other two conditions (low, $M = 2.82$; medium, $M = 2.79$); a contrast comparing the first with the latter two conditions was again highly significant, $t(209) = 4.70, p < .001, r = .31$. These results confirm that the evaluation potential manipulation was successful. Participants led to believe that the experimenter could not evaluate their performance (low evaluation condition) were more likely to hold such a belief than all other participants; participants led to believe that coparticipants could evaluate their performance (high evaluation condition) were more likely to hold such a belief than all other participants.

Also as expected, there was a main effect for instructions on feelings of pressure, $F(1, 212) = 9.48, p < .003, r = .21$; participants in the performance goal conditions felt more pressured ($M = 4.27$) than participants in the learning goal conditions ($M = 3.57$). There was also a main effect for evaluation potential, $F(2, 212) = 4.51, p < .02$, such that participants in the high evaluation potential condition felt more pressured ($M = 4.38$) than participants in the other conditions (low, $M = 3.76$; medium, $M = 3.62$); a contrast analysis comparing the first with the latter two conditions was highly significant, $t(212) = 3.61, p < .001, r = .24$. This means that people felt more pressured when coparticipants were perceived as potential evaluators than when no one or only the experimenter was perceived as a potential evaluator. Given that evaluation potential is an external contingency, it was reasonable to expect such an effect. No other effects emerged for the scales that were administered in the postexperimental questionnaire.

### NUMBER OF USES GENERATED

Table 1 presents the mean number of uses generated in each condition. There was a main effect for evaluation potential on number of uses generated, $F(2, 212) = 10.31, p < .001$, such that participants in the low evaluation potential conditions generated the lowest number of uses, and those in the high evaluation potential conditions generated the highest number of uses, compared to those in the medium evaluation potential conditions; the linear contrast for evaluation potential was significant, $t(212) = 4.60, p < .001, r = .30$. 
Two additional contrasts were calculated to test separately the social loafing and social facilitation effects. A contrast comparing the low to the medium evaluation potential condition (social loafing effect) approached significance, $t(212) = 1.79, p < .08, r = .12$. A contrast comparing the medium to the high evaluation potential condition (social facilitation effect) was significant, $t(212) = 2.71, p < .05, r = .18$. Overall, the results support the first hypothesis. Turning to the effect of instructions, participants in the learning goal condition tended to generate fewer uses than those in the performance goal condition, but the difference was not significant, $F(1, 212) = 2.13, p < .16, r = .10$. Finally, the differences due to different levels of evaluation potential appeared greater in the performance goal conditions than in the learning goal ones. However, the Linear Evaluation Potential × Instructions contrast only approached significance, $t(212) = 1.37, p < .10, r = .09$. These results provide only limited support to the second hypothesis, that the effect of evaluation potential would be more pronounced in a context that encouraged the adoption of a performance goal than in one encouraging the adoption of a learning goal.

Because the evaluation potential effect is actually a combination of two phenomena—social loafing and social facilitation—it was possible to test the second prediction for each phenomenon separately. Accordingly, we tested two more contrasts. The first examined the $2 \times 2$ interaction between evaluation potential (medium/high) and instructions (performance goal/learning goal). This interaction was significant, $t(212) = 1.99, p < .02, r = .14$. The second contrast examined the $2 \times 2$ interaction between evaluation potential (low/medium) and instructions (performance goal/learning goal).

### Table 1: Mean Number of Uses Generated and Standard Deviation (in parentheses) per Condition

<table>
<thead>
<tr>
<th>Evaluation Potential</th>
<th>Performance goal</th>
<th>Learning goal</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>23.06 (6.79)</td>
<td>22.43 (8.44)</td>
<td>22.71 (7.71)</td>
</tr>
<tr>
<td>Medium</td>
<td>24.66 (6.36)</td>
<td>25.24 (7.60)</td>
<td>24.94 (6.93)</td>
</tr>
<tr>
<td>High</td>
<td>30.53 (7.00)</td>
<td>26.14 (8.17)</td>
<td>28.37 (7.86)</td>
</tr>
<tr>
<td></td>
<td>26.14 (7.38)</td>
<td>24.46 (8.19)</td>
<td>25.29 (7.83)</td>
</tr>
</tbody>
</table>
learning goal). This interaction was not significant, $t(212) = 0.49$, $ns, r = .03$. Therefore, the hypothesis about the moderating effect of performance goal versus learning goal instructions was supported for the social facilitation effect but not for the social loafing effect.

**DISCUSSION**

In this study, we crossed a manipulation of evaluation potential and intended to produce social loafing and social facilitation effects, with instructions designed to create a context that encouraged the adoption of either a performance goal or a learning goal. The manipulation of evaluation potential affected participants’ perceptions of the extent to which the experimenter and coparticipants could evaluate them as well as participants’ feelings of pressure. The manipulation of goals influenced feelings of pressure such that participants in the performance goal conditions felt more pressured than people in the learning goal conditions. However, the goal manipulation did not affect measures of extrinsic/intrinsic motivation, autonomy, and interest and so was only partially successful. Because all participants were ultimately doing this experiment for extra credits (i.e., an external inducement), perhaps the experimental situation was not conducive to feelings of autonomy and interest toward the task. Although we clearly influenced participants’ feelings of pressure through our manipulation of goal adoption, the results involving goal manipulation should be interpreted with caution.

Starting with effects of evaluation potential, it should be noted that the comparison of the low and medium evaluation potential conditions represents the classic manipulation for social loafing. Participants were led to believe that in the low evaluation potential condition, the experimenter could not identify individual performance, whereas in the medium evaluation potential condition, he or she could. Participants did not work as hard when individual performances allegedly could not be identified, although the difference was only marginally significant. Note also that the medium and high evaluation potential conditions represent Cottrell’s (1972)
conceptualization of social facilitation. Participants were led to believe that in the high evaluation potential condition, coparticipants could evaluate individual performance, whereas in the medium evaluation potential condition they could not. Participants worked harder when coparticipants could evaluate individual performance.

More important, it appears that when social loafing and social facilitation are operationalized via evaluation potential, they form a unidimensional continuum that accommodates both phenomena. This result supports Harkins and Szymanski’s (1987) hypothesis that evaluation potential underlies social loafing and social facilitation effects. In effect, we found that the level of evaluation potential had a linear effect on performance: the greater the evaluation potential, the higher the performance. This particular paradigm complements Harkins’s (1987) design by adding a comparison intended to test a social facilitation effect due to evaluation potential. The results also support Cottrell’s (1972) evaluation apprehension hypothesis for social facilitation. Mullen and Baumeister (1987) proposed that self-attention (awareness of the match between one’s present behavior and salient standards) might mediate the relation between evaluation potential and performance by affecting self-regulation. Future research should address this possible mediating link.

The manipulation of goals was not expected to yield a main effect but to act as a moderator of the evaluation potential effect. Specifically, we expected larger differences across conditions under performance goal instructions than under learning goal instructions. The linear increase in mean number of uses across the evaluation potential conditions within each instruction manipulation was in the expected direction (larger under the performance than under the learning goals), although the linear Evaluation Potential × Instruction contrast only approached significance. Separate contrasts on the social loafing and the social facilitation effects shed some light on this weak interaction: performance goal versus learning goal instructions moderated the social facilitation but not the social loafing effect. In other words, goal orientations seem to have affected performance only when evaluation potential was higher. Recall that there were different sources of evaluation
in the present study. It is possible that different sources of evaluation may interact differently with performance and learning goals. For example, the social loafing effect reflected a difference between a condition in which the experimenter could evaluate one’s performance and a condition in which he or she could not. Given that the experimenter is a natural evaluator, it is possible that this source of evaluation could not be altered by the adoption of a learning goal. In contrast, the social facilitation effect reflected a difference between a condition in which coparticipants could evaluate one’s performance and a condition in which they could not. Given that coparticipants could take on various roles (e.g., friends, team members, and evaluators), their actual role in the study could be altered with relative ease. Under performance goal instructions, coparticipants could have been perceived as evaluators, but under learning goal instructions, they were probably seen as team members. The fact that, overall, participants felt that the experimenter ($M = 4.89$) could evaluate them more than coparticipants ($M = 3.31$) supports this contention. The difference between these two evaluation sources was highly significant, $F(1, 209) = 102.40, p < .001, r = .57$.

To summarize, social facilitation was a function of the potential for evaluation, coupled with a context encouraging the adoption of a performance goal: Evaluation potential became more salient under performance goal instructions, creating a stronger social facilitation effect. Social loafing, by contrast, was a function of evaluation potential but not of type of context. Implications for group situations, such as the workplace, sport, and school, are manifold. First, the present research demonstrated that different sources of evaluation potential (in this case, experimenter and coparticipants) play an important role in facilitating performance. In the present study, only quantity of performance was assessed, but the question of how evaluation potential would influence the quality of performance is important as well. Bartis, Szynanski, and Harkins (1988) addressed this question in an experiment in which they assessed the creativity of uses and found that creativity was facilitated under low evaluation conditions. This finding is consistent with Koestner, Ryan, Bernieri, and Holt’s (1984) finding that a
controlling context decreases creativity in children, which leads to the possibility that motivational orientations affect quality of group performance.

Second, the context in which performance is evaluated was shown to influence the amount of effort put into the task, especially when coparticipants served as evaluators. Thus, supervisory and coaching styles, as well as teaching methods that emphasize either performance or learning, may differentially influence performance in groups (Deci, Connell, & Ryan, 1989). These points show the importance of motivation in group contexts and highlight how the roles that other workers, classmates, or team members play (e.g., as evaluators) affect individual performance. Future research should examine how interpersonal context influences other group phenomena (e.g., conformity) that also appear to depend on people’s motivational orientations toward a task and the roles that group members play.

NOTES

1. Effective reliability is based on the mean correlation among items adjusted by the Spearman-Brown formula to take into account the number of items (Rosenthal & Rosnow, 1984, pp. 51-54).

2. A measure of effect size, the Pearson $r$, was computed as,

$$\sqrt{\frac{F_1 - \bar{F}}{F_1 - \bar{F} + df}}$$

(Rosenthal & Rosnow, 1984).

REFERENCES


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