© Academy of Management Journal
2004, Vol. 47, No. 2, 227–239.

GOAL SETTING AND GOAL ORIENTATION: AN INTEGRATION OF TWO DIFFERENT YET RELATED LITERATURES

GERARD H. SEIJTS
University of Western Ontario

GARY P. LATHAM
University of Toronto

KEVIN TASA
McMaster University

BRANDON W. LATHAM
University of Western Ontario

Uniting separate research streams on situational and dispositional goals, we investigated goal setting and goal orientation together in a complex business simulation. A specific learning goal led to higher performance than did either a specific performance goal or a vague goal. Goal orientation predicted performance when the goal was vague. The performance goal attenuated correlations between goal orientation and performance. The correlation between a learning goal orientation and performance was significant when a learning goal was set. Self-efficacy and information search mediated the effect of a learning goal on performance.

Goal setting studies have their roots in organizational psychology, in contrast to research on goal orientation, which has roots in educational psychology. The focus of goal orientation studies is primarily on ability, whereas that of goal setting is on motivation. Consequently, the tasks used in goal setting research are typically straightforward for research participants, as the emphasis is primarily on effort and persistence. The tasks used in studies of goal orientation are usually complex, as the focus is on the acquisition of knowledge and skill. Performance is a function of both ability and motivation. Yet one research camp rarely takes into account findings by the other. The result is increasing confusion in the literature between a performance goal and a performance goal orientation; between the roles of situational as opposed to dispositional goals as determinants of behavior; the circumstances in which a learning goal versus a learning goal orientation is likely to increase performance; and whether goal orientation is a moderator of the goal–performance relationship. The purpose of the experiment reported here was to draw connections between these two related yet separate streams of work in organizational behavior, namely, goal setting and goal orientation.

This research was supported, in part, by Social Sciences and Humanities Research Council grants to the first and second authors. We thank Edwin Locke, Don VandeWalle, and three anonymous reviewers for their comments on a draft of this paper.

GOAL SETTING THEORY

In their goal setting theory of motivation, Locke and Latham (1990) stated that, given goal commitment, a specific challenging goal leads to higher task performance than a vague goal, such as "do your best." This assertion has been supported in over 500 empirical studies (e.g., Latham, Locke, & Fassina, 2002; Locke & Latham, 2002).

A number of variables have been shown to moderate the relationship between goal difficulty and performance. These include, but are not limited to, ability, feedback, task complexity, and situational constraints (Locke & Latham, 1990). For personality variables in the goal setting framework, however, controversy exists as to whether goals are better predictors of action than are traits. For example, Yukl and Latham (1978) found that goals predicted both performance and satisfaction better than a measure of need for achievement. Subsequently, an increasing number of studies have shown that self-set goals mediate the relationship between personality variables (for instance, need for achievement and conscientiousness) and performance (Locke & Latham, 2002). With regard to moderators, Locke, Shaw, Saari, and Latham (1981) concluded that the only consistent finding regarding personality vari-

ables in goal setting research is data that are inconsistent. Locke and Latham (1990) reiterated this conclusion a decade later.

An explanation for the inconsistent research findings is that goal setting is a "strong" variable that attenuates the effect of personality variables (e.g., Adler & Weiss, 1988). This is because a specific challenging goal provides cues to guide behavior and performance expectations, and hence leaves little room for personality-based individual variation in work behavior and subsequent performance. Consequently, there has been minimal interest in investigating personality or stable individual difference variables as moderators of goal effects. The necessity for now doing so is evident from the rapidly accumulating findings regarding a person's goal orientation. Goal orientation predicts and explains not only the tasks people choose, but how they behave when the acquisition of knowledge or ability, rather than sheer effort or persistence, is a prerequisite for good performance on a complex task. Both ability and task complexity are moderators in goal setting theory (Locke & Latham, 1990, 2002).

GOAL ORIENTATION

Dweck and her colleagues (e.g., Dweck & Leggett, 1988; Elliott & Dweck, 1988), working in the educational psychology field, found that children have two different goal orientations toward developing and demonstrating their abilities, namely, a performance and a learning goal orientation. On tasks that require primarily learning as opposed to motivation, children who have a performance goal orientation focus on the end result, have apprehensions of failure, and focus on the consequences of their poor performance, especially the disapproval of others. Where possible, they choose tasks that enable them to demonstrate their competence at the expense of their learning something new. Those children who have a learning goal orientation seek challenging tasks that provide them the opportunity to develop their competencies. Errors are perceived as a natural, instructive part of the process. The outcome is an increase in self-efficacy (Bandura, 1986).

These findings should be of interest to goal setting researchers. As Locke and Latham (2002) stated, self-efficacy is important in goal setting theory in several ways. People with high self-efficacy are more committed to assigned goals, find and use better strategies to attain the goals, and respond more positively to negative feedback than do people with low self-efficacy.

Research by VandeWalle and his colleagues have shown the applicability of Dweck's findings to organizational behavior. For example, he found that individuals who have a performance goal orientation have a strong desire to impress others, and hence they focus on the outcome of their performance; those with a learning goal orientation focus on ways to master tasks so as to develop their competence, acquire new skills, and learn from experience (Brett & VandeWalle, 1999; VandeWalle, Brown, Cron, & Slocum, 1999). Moreover, VandeWalle (1997) showed that a performance goal orientation can be partitioned further into two dimensions, namely, a "prove" goal orientation, that is, a focus on demonstrating one's competence and gaining the favorable judgments of others, and an "avoid" goal orientation, that is, a focus on ways of avoiding negation of one's competence as well as unfavorable judgments by others. These three orientations are independent dimensions (Button, Mathieu, & Zajac, 1996; VandeWalle, 1997).

VandeWalle, Ganesan, Challagalla, and Brown (2000) found a positive relationship between a learning goal orientation and feedback-seeking behavior with regard to overall job performance and technical aspects of a job, in contrast to a negative relationship between a performance goal orientation and seeking feedback (VandeWalle & Cummings, 1997). VandeWalle and his colleagues (2000) argued that feedback seeking is important because it suggests ways to improve abilities. In contrast, those who have a performance goal orientation view their abilities as fixed and hence tend to avoid seeking feedback owing to fear of incurring criticism about what they believe they cannot improve. This finding should be of high importance to goal setting researchers as feedback is a moderator of the goal-performance relationship.

VandeWalle and coauthors (1999) investigated the effect of goal orientation on sales performance, finding that a learning goal orientation had a positive relationship with sales performance. They concluded that a learning goal orientation, even for the members of an experienced workforce, is always appropriate. There are few, if any, situations that favor a performance goal orientation, whereby a person chooses continually to sacrifice learning in favor of "looking good" to others. On the other hand, this conclusion may suggest that a person's focus should always be on the process that leads to a desired result rather than on the result itself. Given the literally hundreds of studies on goal setting theory, this latter conclusion would appear incorrect unless one confuses a performance goal orientation with goal content—that is, the setting of a performance goal that is both specific and difficult. These two concepts, performance goal orientation and performance goal, are not interchangeable.

A performance goal is an object or aim of actions. It refers to the desire of attaining a specific standard of proficiency on a given task, usually within a certain time (Locke & Latham, 1990). A performance goal orientation is defined and measured as a predilection, not for challenging performance goals, but rather, for attaining relatively certain success so as to increase the probability of favorable judgments by others (Button et al., 1996).

Goal orientation researchers seldom, if ever, take into account findings from goal setting theory. This is because goal orientation is usually measured as a trait, and a person's rating on this trait is correlated with his or her subsequent performance. In other studies, goal orientation is treated as an induced mind-set. Individuals are urged to focus either on how well they are performing a task, or on the acquisition of the knowledge needed to perform the task effectively. But no specific challenging goal is set in either goal orientation condition.

Another reason findings from goal setting theory have been ignored in the goal orientation literature is that the tasks employed by goal setting researchers to assess motivation are typically straightforward. They require primarily effort and persistence rather than the acquisition of knowledge or ability. However, with the publication of Kanfer and Ackerman's (1989) findings, which are described next, this is no longer true.

LEARNING VERSUS PERFORMANCE GOALS

Using an air traffic control simulation, a highly complex task, Kanfer and Ackerman found that when people lacked the knowledge or skill to perform the task effectively, urging them to set a specific high goal with regard to the results to be attained led to a decrease rather than an increase in performance, relative to urging them to do their best. They concluded that this pattern occurred because, when people are in the "declarative" stage of learning, before performance routines have become automatic, their cognitive resources need to be allocated to mastering the processes required to perform well rather than to the attainment of a specific level of performance.

Winters and Latham (1996) showed that the type of goal set explains the results obtained by Kanfer and Ackerman. When a task was straightforward for people, Winters and Latham found that setting a specific high performance goal led to higher performance than did urging people to do their best. This finding replicated countless other goal setting studies. But when a task required the acquisition of knowledge, they replicated Kanfer and Ackerman's finding that urging people to do their best led to higher performance than the setting of a specific challenging performance goal. However, when a specific high learning goal (for instance, discover *n* strategies to perform a task effectively) was set, performance was even higher than it was when people were urged to do their best. Seijts and Latham (2001) replicated this finding.

Setting a high performance goal is effective only when people already have the ability to perform a particular task effectively. On a task that requires learning, a specific challenging learning goal should be set. A learning goal shifts attention to the discovery and implementation of task-relevant strategies or procedures and away from task outcome achievement. This is because tasks that are novel or complex for an individual often require attentional resources for learning what is required in order to perform them well (Kanfer, 1990; Kanfer & Ackerman, 1989; Locke, 2000). For tasks that a person already has the requisite ability to perform effectively, a learning goal that needlessly focuses attention on discovering strategies—rather than on attaining a specific level of performance—has a deleterious effect on performance (Winters & Latham, 1996). These findings have high practical significance.

Two real-world scenarios can illustrate. A dean or department chair should assign a specific high *learning* goal rather than a specific *performance* goal to an assistant professor who is inexperienced in the classroom. The assistant professor should focus on the discovery of five to seven strategies, processes, or procedures (such as finding specific ways to explain complex material in memorable ways, learning students' first names, and showing the relevance of the subject matter to the students' lives outside the classroom) for obtaining high student evaluations. Assigning a specific challenging performance goal (such as obtaining student evaluations of 6 or higher on a 7-point scale) before the professor's teaching routines have become "automatic" is likely to lead to "scrambling" on the part of the teacher, and subsequent rejection by the students. Similarly, a novice golfer in the declarative stage of learning should set a specific high *learning* goal rather than a high *performance* goal. A score of, say, 70 would be a high performance goal in the case of this game. The (more desirable) learning goal might be mastering the proper grip of the club or proper placement of the feet, learning when to use what club, or understanding the distribution of weight from one foot to the other when swinging the club.

Neither Kanfer and Ackerman, Winters and Latham, nor Seijts and Latham included a measure of a person's goal orientation in their respective

experimental designs. Goal setting and goal orientation studies are in essence two isolated facets of the organizational behavior literature. Despite calls to integrate goal orientation into mainstream research on goal setting (e.g., Farr, Hofmann, & Ringenbach, 1993), to our knowledge no study has examined the effects of goal orientation and the assignment of a specific high goal within a single research design. We addressed this gap in the literature by investigating whether a person's goal orientation affects subsequent performance when a specific, rather than an abstract, goal is set. Our interest in this research stems from the long-standing debate on the relative roles of dispositional and situational determinants of behavior (e.g., House, Shane, & Herold, 1996). The following hypotheses were tested:

Hypothesis 1a. On a complex task, a specific, challenging learning goal leads to higher performance than an abstract "do your best" goal.

Hypothesis 1b. On a complex task, a specific, challenging learning goal leads to higher performance than a specific, challenging performance goal.

Hypotheses 1a and 1b are consistent with the results obtained by Seijts and Latham (2001) as well as Winters and Latham (1996).

Hypothesis 2a. When people are urged to "do their best" on a complex task, there is a positive relationship between a learning goal orientation and performance.

Hypothesis 2b. When people are urged to "do their best" on a complex task, there is a negative relationship between performance and both the "prove" and the "avoid" dimensions of a performance goal orientation.

Hypotheses 2a and 2b are consistent with the results obtained by VandeWalle, Cron, and Slocum (2001). In the absence of goal setting, they found that a learning goal orientation correlated positively with performance on academic tasks; negative and nonsignificant relationships were obtained between the "prove" and "avoid" dimensions of a performance goal orientation and subsequent performance. Because no goals were set, it can be inferred that the participants (students) were trying to do their best.

A do-your-best instruction is a "weak," or nondirective, situation. Thus, a stable individual difference variable, such as goal orientation, is more likely to affect a person's behavior in this situation than in a "strong" setting (e.g., Adler & Weiss, 1988). To the extent that goal setting is a strong variable, goal orientation may have no effect on a person's performance when a specific high goal is set. This speaks to a moderating effect.

Goal setting is a core variable in Bandura's (1986) social cognitive theory. Bandura found repeatedly that self-efficacy played a major role in keeping individuals committed to a course of action, especially when obstacles or setbacks to goal attainment were encountered. Thus, individuals with high self-efficacy should be more likely to engage in goal-directed behavior, such as seeking task-relevant information, than individuals with low self-efficacy. The search for task-relevant information, in turn, should have a positive effect on self-efficacy through an increase in task performance. Thus:

Hypothesis 3. Self-efficacy and information search mediate the effect of setting a specific, challenging learning goal on performance of a complex task.

These potential mediating effects were examined using a repeated-measures design. To our knowledge, no goal setting studies have examined the relationships among learning goals, performance, information search, and self-efficacy, and how these relationships develop over time.

METHODS

Sample and Design

Business school students (N = 170) in their senior year were randomly assigned to one of three "goal conditions": performance (n = 61), learning (n = 50), and do your best (n = 59). Their mean age was 20.7 years (s.d. = 0.9). All of them had taken a course in strategic management. The experiment was conducted in a computer laboratory, with 6 to 12 individuals in each session. Course credit was given for participation in the experiment.

Experimental Task

To test the hypotheses, we used the Cellular Industry Business Game (CIBG; Audia, Locke, & Smith, 2000), an interactive, computer-based simulation that is based on events that occurred in the U.S. cellular telephone industry. The simulation uses a complex set of formulas to link strategic actions to performance outcomes; these formulas vary over time to reflect the ongoing changes in the industry.

Participants played the role of Mr. Douglas, the founder, CEO, and sole decision maker of a cellular telephone company, for 13 decision periods, each corresponding to a year of activity. They were told

that there would be 15 rounds of decision making. We ended the experiment after the 13th round to prevent "endgame effects." All 13 decision periods were completed in one session.

The objective pursued within the simulation was increased market share. Each participant started with a 7 percent market share. During each round, participants could make decisions concerning ten areas of activity, which we referred to as strategic options. These ten options were pricing, advertising, research and development, sales force, cost containment, radio wave capacity, additional products, finance, geographic scope, and alliances with other companies. Each area of activity allowed numerous choices. For example, in the finance area, participants could raise funds by issuing bonds, issuing public shares, or borrowing from a bank; pay down debt on any one of the three fund-raising methods; or issue dividend payments.

Following each decision period, all participants obtained feedback regarding market share, number of cell phone subscribers, and operating profit. An optional screen provided longitudinal results on 12 other business-related indicators (including advertising expenses, total debt, and radio wave capacity). Performance was the direct result of the strategic decisions that each individual made.

At the end of each decision period, participants could request industry-specific information (on new technologies, for instance) as well as information on customers (such as hours spent using particular services) to help them make informed decisions. Each of these information sources cost $25,000 per decision period. The information available was the same for each participant and, over time, reflected the different stages of the industry. Seeking the task-specific information helped participants to make strategic decisions that would enable them to improve their performance.

The evolution of the cellular telephone industry was predetermined in the simulation. During the first eight decision periods (simulating the industry's first eight years), competition was regionally restricted. The five effective strategic options to increase market share in this phase were buying licenses to operate in all available markets; acquiring additional radio wave capacity, allowing the company to carry additional calls and avoid network jams; raising capital to finance new investments; increasing the salesforce and advertising expenditures; and concentrating on business rather than private users. Participants had the choice of using each of these strategic options in any given decision period. The more these different strategies were utilized, the greater the increase in market share.

Following the eighth decision period (the industry's eighth year), however, the industry experienced a radical environmental change in the form of deregulation. Participants received several messages warning that deregulation was likely. The five strategic options that were successful before deregulation ceased to be as effective. For example, pursuing an aggressive advertising strategy after year 9 led to a decline in operating profits. The two strategic options that were most effective after deregulation were the creation of strategic alliances to ensure wide geographic coverage, and cost containment. The more these two strategic options were used, the higher the resulting market share.

This task was used for three reasons. First, we needed a complex task to test the hypotheses, and according to Wood's (1986) criteria, the simulation had high component, dynamic, and coordinative complexity. Performance on the task was not increased solely through effort and persistence. Effective performance required information seeking to discover appropriate strategies. Second, because it was highly complex, the task was expected to maximize differences in the behavioral patterns of participants with learning goal orientations and those with performance goal orientations. Third, as stated earlier, the simulation drew on the actual events that occurred in the cellular industry; this was desirable because the use of a realistic, relevant task enhances generalizability.

Procedures

A preparatory case that described the company and cellular phone industry was distributed to participants two weeks prior to the experiment. In the computer laboratory, participants were given instructions on how and when to complete the questionnaire booklet. Once the participants were familiar with the task, they were asked to open the booklet containing the goal manipulation.

The assigned goals were based on a pilot study. The performance goals focused on participants' achieving increased market share. The learning goal focused on implementing strategies that would help participants to achieve increased market share. Defining a learning goal in terms of discovering and implementing effective task strategies is consistent with Locke and Latham's (2002) goal setting theory as well as with prior studies on learning goals (e.g., Seijts & Latham, 2001).

Do-your-best goal. The instruction to participants read as follows: "The most important indicator of performance in the simulation is total market share. Thus, your goal as the new CEO is to do your best to achieve as much total market share as possible by the end of the simulation."

Performance goal. The instruction was: "The most important indicator of performance in the simulation is total market share. Past users of the simulation have shown that a goal of achieving 21 percent market share by the end of the simulation is difficult, yet attainable. Research has shown that setting a difficult, yet attainable goal maximizes performance. Thus, your goal as the new CEO is to achieve 21 percent or more total market share by the end of the simulation."

Learning goal. The instruction was: "The most important indicator of performance in the simulation is total market share. Thinking about strategies to help you achieve market share results in higher performance. Past users of the simulation have shown that a goal of identifying and implementing 6 different strategies by the end of the simulation is difficult, yet attainable. Research has shown that setting a difficult, yet attainable goal maximizes performance. Thus, your goal as the new CEO is to identify and implement 6 or more strategies to achieve market share by the end of the simulation."

Measures

Goal orientation. Goal orientation was assessed using 12 items adapted from VandeWalle et al. (2001). Three items measured a learning goal orientation (example: "I prefer challenging and difficult tasks so that I'll learn a great deal"). Four items assessed the "prove" dimension of the performance goal orientation (example: "To be honest, I really like to prove my ability to others"), and 5 items measured the "avoid" dimension of the performance goal orientation (example: "I am more concerned about avoiding a low grade than I am about learning"). Scale scores could range from 1, "completely disagree," to 5, "completely agree." The goal orientation questionnaire was administered two weeks prior to the experiment.

Performance. Market share was calculated at three points in time. Year 2 market share, the time 1 measure, captured performance in the initial phase of the simulation. Year 8 market share, the time 2 measure, captured pre-deregulation performance. Year 13 market share, the time 3 measure, captured post-deregulation performance.

Self-efficacy. We took measures of self-efficacy after years 2, 7, and 12, using participants' assessments of the level of market share they would be able to achieve by the end of the simulation. Both self-efficacy magnitude and strength were measured, consistent with the recommendations of Locke and Latham (1990). *Self-efficacy magnitude* was the total number of "yes" answers to 13 questions about market shares ranging from 1 to 37 percent (example: "I am able to achieve 15 percent market share"; 1, "no," to 2, "yes"). *Self-efficacy strength* was assessed via participants' ratings of how confident they were about their answers about each level of market share achievement (0, "no confidence at all," to 100, "complete confidence." These ratings were summed. We then converted the magnitude and strength measures to *Z*-scores and summed them to derive total self-efficacy scores for each of the three time periods.

Information search. The computer tracked the number of information requests each participant made during each decision period. At the end of a period, a participant could select a maximum of two pieces of objective information. Thus, for the entire simulation, a participant could make 24 (12 decision rounds $\times$ 2 information sources) information requests. All participants received industry-specific information and customer information at the end of year 1, free of charge. This allowed individuals to become familiar with the experimental task and with industry and customer information. As of the end of year 2, however, participants could only selectively request information. Two information search variables were thus taken: average information search during years 2 through 8 (time 2) and years 9 through 13 (time 3).

Task complexity. The extent to which the participants perceived the task as complex was measured using two 5-point Likert-type items (rated 1, "strongly disagree," to 5, "strongly agree") after participants had completed the task. These items (example: "The simulation required me to coordinate many different things at the same time") were adapted from Winters and Latham (1996).

Goal specificity. Three 5-point Likert-type items (1, "not at all," to 5, "very much so") assessed the perceived specificity of the goal. These items (example: "The goal assigned at the beginning of year 1 was specific") were also adapted from Winters and Latham (1996).

Goal commitment. Goal commitment was measured at the end of years 2, 7, and 12 on five 5-point Likert-type items (1, "strongly disagree," to 5, "strongly agree"; example: "I am strongly committed to pursuing this goal") taken from Klein, Wesson, Hollenbeck, Wright, and DeShon (2001).

RESULTS

Manipulation Checks

We conducted various analyses to confirm that the scales had adequate internal consistency reliability. We also tested whether the results of the manipulation were in the intended direction. The

Cronbach's alpha of the task complexity scale was .69. A univariate analysis of variance (ANOVA) indicated no significant differences across the three goal setting conditions ($F[2, 169] = 2.17$, $p > .05$). The grand mean scale score ($\bar{x} = 4.12$, s.d. = 0.64) indicated that participants perceived the task as highly complex.

For the goal specificity scale, the Cronbach's alpha was .86. An ANOVA indicated significant differences across the three goal setting conditions ($F[2, 169] = 3.83$, $p < .05$). A post hoc analysis using the Bonferroni test showed that the perceived specificity of the performance goal ($\bar{x} = 3.75$, s.d. = 0.85) was significantly higher than the perceived specificity of the abstract do your best goal ($\bar{x} = 3.36$, s.d. = 0.85; $t[118] = 2.56$, $p < .05$). There was no significant difference between the perceived specificity of the performance goal and that of the learning goal ($\bar{x} = 3.37$, s.d. = .97), nor between the perceived specificity of the learning goal and that of the abstract goal.

For goal commitment, the Cronbach's alphas were .74, .84, and .82 for times 1, 2, and 3, respectively. Table 1 shows the means for goal commitment across conditions and time. The correlations between goal commitment and performance during times 1, 2, and 3 were .26 ($p < .01$), .42 ($p < .01$), and .47 ($p < .01$). A repeated-measures ANOVA conducted to determine whether there were significant differences in commitment across goal condition and time yielded a "between-effect" for goal condition ($F[1, 106] = 5.63$, $p < .05$, $\eta = .05$). Goal commitment was stronger in the learning goal condition than it was in the performance goal condition ($t[106] = 2.73$, $p < .05$).

Hypothesis Tests

Performance. Our prediction concerning performance was that a specific, challenging learning goal would lead to better performance on a complex task than would either an abstract goal or a specific, challenging performance goal. Table 1 shows the means for performance across conditions and time. The findings make it evident that the goal of a 21 percent market share was indeed challenging, as only 9 percent ($n = 15$) of the participants achieved it: 8 of the 50 in the learning goal condition, 6 of the 59 in the do your best goal condition, and 1 of the 61 in the performance goal condition. The chi-square was significant ($\chi^2[2] = 7.11$, $p < .05$).

A repeated-measures ANOVA with goal condition as a between-groups variable and time as a within-group variable indicated a "between-effect" for goal condition ($F[2, 166] = 5.86$, $p < .01$, $\eta = .07$) as well as a significant interaction between goal condition and time ($F[4, 332] = 3.64$, $p < .01$, $\eta = .04$). Participants who had a specific, challenging learning goal had higher performance than participants who were either urged to do their best ($t[107] = 2.46$, $p < .05$, $\eta = .05$) or were assigned a specific, challenging performance goal ($t[108] = 3.02$, $p < .01$, $\eta = .08$). Support was thus obtained

TABLE 1
Means and Standard Deviations for Variables of Interest

	Time 1		Time 2		Time 3		Total	
Variable	Mean	s.d.	Mean	s.d.	Mean	s.d.	Mean	s.d.
Performance								
Do-your-best goal	6.68	2.07	5.99	4.74	7.50	7.46	6.72	4.19
Performance goal	6.72	2.00	5.60	4.49	6.44	6.37	6.25	3.79
Learning goal	7.71	3.20	8.97	7.68	11.12	9.51	9.27	6.51
Commitment								
Performance goal	3.77	0.60	3.58	0.71	3.28	0.78	3.54	0.59
Learning goal	3.92	0.58	3.82	0.72	3.71	0.76	3.81	0.61
Self-efficacy								
Do-your-best goal	−0.31	1.97	−0.42	1.90	−0.02	2.10	−0.25	1.77
Performance goal	−0.18	1.72	−0.17	1.62	−0.51	1.59	−0.29	1.39
Learning goal	0.46	1.94	0.66	2.14	0.68	2.03	0.60	1.79
Information search								
Do-your-best goal			2.86	3.79	2.10	3.18	2.48	3.40
Performance goal			3.03	3.26	2.62	3.18	2.83	3.08
Learning goal			4.08	3.52	3.92	3.53	4.00	3.32

for Hypotheses 1a and 1b. No significant difference was found between participants with a do your best goal and those assigned a specific, challenging performance goal ($t[117] = 0.64$, $p > .05$).

The goal condition–time interaction indicated that performance increased over time for participants who had a learning goal; this was not true for participants who had either a do-your-best or a specific, challenging performance goal. Participants who had the specific, challenging learning goal appear to have taken the time necessary to acquire the knowledge to perform the task effectively. These individuals ($\bar{x} = 102.26$, s.d. = 17.21) spent more time in the simulation than those in the do your best ($\bar{x} = 95.02$, s.d. = 16.47; $t[107] = 2.24$, $p < .05$) and performance goal ($\bar{x} = 90.66$, s.d. = 17.53; $t[109] = 3.50$, $p < .01$) conditions. On average, participants in the learning goal condition spent 8 minutes in each decision period, while those in the performance goal condition spent 7 minutes. The knowledge that could be acquired during the extra minute was fairly extensive. For example, participants could receive such information as, "The annual Cellular Data Inc. survey reports that in the past year over 5% of cellular subscribers switched providers. Leading the list of reasons for changing carriers was the high number of accidentally disconnected calls during peak hours."

Goal orientation. Hypotheses 2a and 2b obtained support. The correlation between a learning goal orientation ($\alpha = .68$) and performance in the do your best condition was positive ($r = .28$, $p < .05$). Both the "prove" dimension ($\alpha = .80$) and the "avoid" dimension of a person's performance goal orientation ($\alpha = .67$) correlated negatively with performance in the do-your-best condition ($r = -.36$, $p < .01$, and $r = -.37$, $p < .01$, for "prove" and "avoid" respectively). With one exception, goal setting attenuated the correlation between a person's goal orientation and his or her subsequent performance, regardless of whether the goal that was set was a performance goal or a learning goal. The exception was that the correlation between a learning goal orientation and performance was significant ($r = .35$, $p < .05$) when a specific, high learning goal was set. The correlations in the remaining experimental conditions were not significant, ranging from $-.25$ to .22.

To determine whether setting a specific, challenging goal affects a person's goal orientation, we had 69 individuals complete the goal orientation questionnaire a second time, namely, upon completion of the simulation. The test-retest reliability estimates were .76, .75, and .83 in the do-your-best, performance, and learning goal conditions, respectively. Paired-sample two-tailed t-tests showed no significant difference regarding learning goal orientation ($t[68] = 0.42$, $p > .05$) or the "prove" dimension of a performance goal orientation ($t[68] = 0.65$, $p > .05$). The "avoid" dimension of the performance goal orientation at time 2 ($\bar{x} = 3.10$, s.d. = 0.63), however, was significantly higher than at time 1 ($\bar{x} = 2.99$, s.d. = 0.67; $t[69] = 2.43$, $p < .05$). The difference is so small that the practical significance of this finding is arguable.

Causal model. The correlations between self-efficacy magnitude and self-efficacy strength were .74 ($p < .01$), .81 ($p < .01$), and .89 ($p < .01$) for times 1, 2, and 3, respectively. As noted earlier, we converted these two measures to Z-scores and added them to obtain a composite measure. Similarly, the correlations between the two measures of information search were .78 ($p < .01$) and .82 ($p < .01$) at times 2 and 3, respectively. We combined these two measures to create an overall information search measure. Because all participants received the same information at time 1, this was a constant. Table 1 shows the means for self-efficacy and information search across conditions and times.

Following recommendations of Baron and Kenny (1986), we conducted regression analyses to test whether self-efficacy and information search mediated the effect of learning goals on performance, as predicted in Hypothesis 3. To establish mediation, three conditions must hold. First, the independent variable must affect the mediator. Second, the independent variable must be shown to affect the dependent variable. And third, the independent variable and the mediator must affect the dependent variable. A variable mediates the relationship between the independent variable and the dependent variable if the above conditions hold in the predicted direction, and the effect of the independent variable on the dependent variable is less in the third regression equation than in the second regression equation. Because there were no significant differences in time 1, 2, and 3 performance between the do-your-best and the specific, challenging performance goal conditions, goal setting was dummy-coded as 0 for the do-your-best and the performance goal and 1 for the learning goal. The results of the regression analyses supported the hypothesis that self-efficacy and information search mediate the effect of learning goals on performance. For example, the assignment of a learning goal affected both self-efficacy and performance at time 1. The effect of the learning goal on performance at time 1 was not significant when self-efficacy at time 1 was included in the regression equation. These results thus indicate that self-effi-

cacy fully mediated the relationship between the assigned learning goal and performance at time 1.[1]

Figure 1 shows the results of a path analysis that was conducted to test whether the proposed network of relationships held true as predicted. This model is consistent with the temporal order of the measures taken. Setting a specific, challenging learning goal enhanced self-efficacy. Self-efficacy in turn had a positive effect on performance during all three time periods. The relationship between self-efficacy and performance was reciprocal, as performance affected subsequent self-efficacy measured at times 2 and 3. The results shown in Figure 1 also indicate that the effect of self-efficacy on subsequent performance was mediated by the search for task-relevant information. For example, at time 2, self-efficacy had a direct effect on performance as well as an indirect effect through information search, the mediator. However, at time 3, the relationship between self-efficacy and information search was not significant. The coefficients for the path between information search and performance were positive and significant at times 2 and 3. Finally, the relationship between self-efficacy and information search was reciprocal, as information search positively affected self-efficacy through an increase in performance. Performance, therefore, was a mediator of the relationship between information search and self-efficacy. In conclusion, the results of both the mediation analyses and the path analysis provided support for the hypothesis that self-efficacy and information search mediate the increase in performance associated with setting a learning goal.

DISCUSSION

Theoretical Significance

That individuals in the performance goal condition did not outperform those in the do-your-best condition would have been astonishing were this a standard goal setting experiment. This finding would be contrary to over a quarter of a century of evidence in the motivation literature that has shown that people who work toward specific, difficult goals outperform those instructed to do their best (Locke & Latham, 2002).

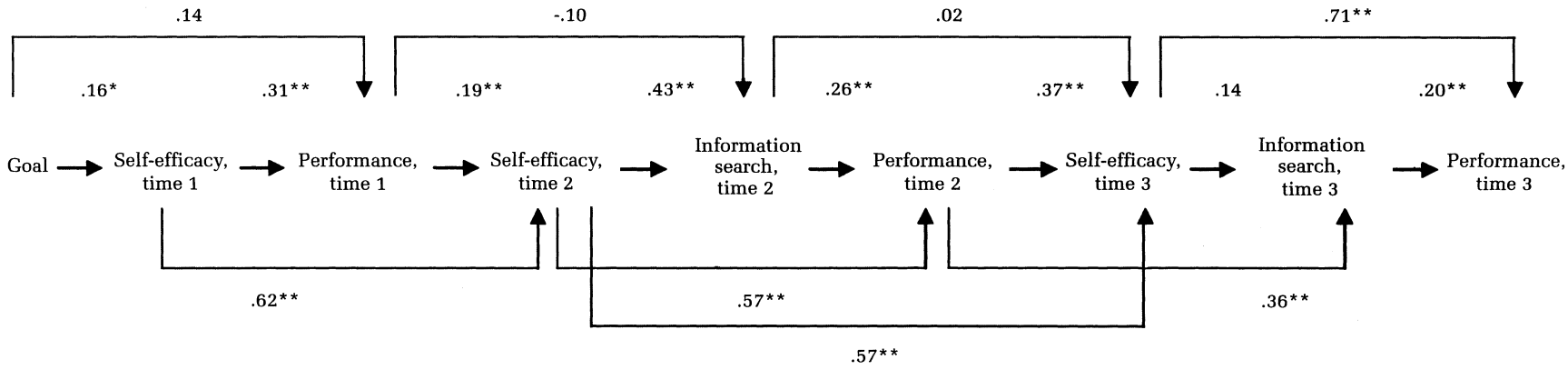
What differentiates this experiment from the majority of the goal setting studies that preceded it is the use of a highly complex task. A task for which minimal prior learning or performance routines exist, where strategies that were effective suddenly cease to be so, relocated the focus of the experiment from primarily motivation to ability. It is consistent with the findings of Kanfer and Ackerman (1989), Winters and Latham (1996), and Seijts and Latham (2001) that we found that, in a situation primarily requiring the acquisition of ability rather than an increase in motivation, setting a specific high performance goal was not prudent. Setting a specific and difficult learning goal was, instead, associated with higher performance. Thus, taken together, these studies suggest that goal setting is a theory of ability as well as a theory of motivation.

The primary distinction between a performance goal and a learning goal is the framing of instructions. The instructions respectively associated with the two types of goal invoke two different domains—motivation and ability. With a performance goal, as the name implies, an experimenter frames the goal so that participants focus on performance. A search for information to attain the goal is neither mentioned nor implied because ability is treated as a constant when good performance on a task requires primarily effort or persistence. Thus, in the present experiment, the participants who were assigned a performance goal were instructed to attain 21 percent or more of market share. Similarly, with a learning goal, as the name implies, instructions are framed so that participants focus on knowledge or skill acquisition. In the present experiment, we framed the learning goal, not in terms of a percentage of market share to be attained, but rather, in terms of the search for and implementation of effective strategies for increasing market share. According to Kanfer and Ackerman's (1989) resource allocation model, a learning goal, as a situational variable, draws attention away from the end result. The focus instead is on process. This focus on process rather than outcome can also be seen in studies on goal orientation, which typically employ complex tasks.

That our participants perceived the setting of a specific, challenging learning goal as no more specific than the instruction to do your best may simply reflect the lack of sensitivity of a self-report measure. Alternatively, it may reflect the perception of the participants that the word "specificity" should be reserved for describing outcomes and end states rather than processes or strategies. Regardless, the results of the present experiment suggest that it is more important that a learning goal in fact be specific than it is for participants to report it as specific. This is because goal commitment was higher when learning rather than performance goals were set, a finding consistent with the findings of Seijts and Latham (2001). Moreover, the

[1] The full set of regression equations involving the seven models or blocks (see Figure 1) can be obtained from the first author upon request.

FIGURE 1
Path Analysis for Times 1–3



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

amount of time people spent on the task was greater when a learning rather than a performance or an abstract goal was set. That commitment to the performance goal was lower than was commitment to a learning goal is likely due to the fact that participants were not attaining their performance goals. In contrast, individuals with a learning goal made progress in mastering the task, as is evident from the increases in their performance over time. Moreover, the percentage of participants who attained a 21 percent or more market share was highest among the participants who were in this experimental condition. The repeated-measures model also indicated that the learning goal was effective because it increased self-efficacy. High self-efficacy, in turn, correlated positively with information search. The search for information to discover the effectiveness of task strategies is a goal-directed behavior. The relationship between information seeking and performance was positive and significant. Thus, it is consistent with Bandura's (1986) social cognitive theory that those individuals with high self-efficacy were engaged in task activities to a greater extent than those with low self-efficacy.

The theoretical significance of this experiment with regard to goal orientation is that it provides additional evidence that a person's goal orientation is a stable individual difference variable that affects performance. The test-retest reliability estimates of the three dimensions of goal orientation were satisfactory. The correlations between scores on the measures of this dispositional variable with subsequent performance two weeks later were significant. Specifically, a learning goal orientation correlated positively with performance when individuals were instructed to do their best, while a performance goal orientation, both "prove" and "avoid," correlated negatively with performance.

Limitations and Future Research

An experimental design such as the one used in the present study is appropriate for testing whether proposed causal effects can be demonstrated, and when an experiment isolates the essential elements of real-life settings. However, a drawback of a simulation using business school students as participants is that there is no tangible outcome associated with high or low performance, such as getting fired or losing money.

The simulation used here, however, was based on actual events that occurred in the U.S. cellular telephone industry. Using realistic, relevant tasks enhanced the extent to which results can generalize to field settings (Locke, 1986). As was the case with the actual decision makers in the cellular telephone industry, the participants in the present experiment had not assimilated effective performance routines; both needed to learn, over time, how to manage their organizations. As a result, the sample-specific differences that can affect performance may be small in this case. Nevertheless, the present experiment should be replicated in field settings.

Effective task strategies were predetermined and identical for all participants (Audia et al., 2000). However, a drawback of this experiment was the absence of an objective measure of assessing whether participants discovered the formulas that linked strategic actions to performance outcomes. Future studies should measure the actual number of strategies implemented so as to "unpackage" the effects reported here.

Another, albeit arguable, limitation of this experiment is that the task required learning in a situation in which minimal prior learning of necessary performance repertoires existed. This distinction is important because there are likely numerous learning tasks for which learning goals may not apply in the same way as they did in this experiment. As Locke et al. (1981) noted, it is not only choice, effort, and persistence that mediate high performance goals: cognition—namely, a search for strategies already within a person's knowledge base—is also a mediator. A specific, high learning goal, in contrast with a performance goal, is likely appropriate only when such knowledge has yet to be acquired. In these latter instances, the specific learning goal predisposes people to take the additional time necessary to seek out and process the information necessary for high performance (Locke, 2000). It should all but guarantee higher performance than a focus on attaining a high performance goal. Thus, the primary benefit of learning goals as a situational variable may be in fast-changing organizational environments and industries that are prone to abrupt changes and in which effective strategies can quickly become obsolete; "dotcoms," investment banking, and health maintenance organizations are examples of such settings.

As in previous studies (Seijts & Latham, 2001; Winters & Latham, 1996), a specific, high learning goal led to higher performance on a complex task than a specific, high performance goal. However, an unanticipated finding was that in the learning goal condition, a positive relationship existed between a person's learning goal orientation and subsequent performance. This finding suggests that the effect of learning goals on performance is further enhanced when individuals have a learning goal orientation. An explanation for this finding is that people who are interested in mastering new situa-

tions who are assigned a goal of discovering strategies to better perform a task are more committed to the learning goal than individuals who have a performance goal orientation. This explanation warrants further investigation.

Practical Implications

Our experiment has practical significance for goal setting research. The data show that a specific, challenging learning goal, like a performance goal, is a "strong" variable. A person's goal orientation affects subsequent performance in a "weak" setting—that is, when the goal is vague rather than specific and challenging. Specific, high goals communicate cogently to individuals the level of performance or learning that is expected in a given situation.

The greater influence of goal setting than goal orientation as a determinant of performance tempers the practical significance of developing selection tests for assessing goal orientation. The usefulness of such tests would appear to be limited to jobs that people do alone, or almost alone, and that offer little or no training. Through training, people can be taught to set specific, high goals (Latham & Kinne, 1974); they can be taught, moreover, when to set specific, high learning goals versus specific, high performance goals. Because a goal is a situational variable that masks the effect of goal orientation as a dispositional variable, an emphasis on training programs rather than selection tests is likely to prove beneficial to organizations.

Many organizations hire people for their aptitude rather than their extant skills (for instance, they might hire college graduates with Bachelor of Arts degrees). It is likely that those who are assigned specific, high learning goals while they are in the declarative stage of learning will have better job performance than those who are immediately given performance targets to attain. Learning goals are also likely to help leaders of globally diverse organizations find ways to effectively manage myriad social identity groups so as to minimize rigidity, insensitivity, and intolerance within a multicultural workforce. Learning goals are likely to be effective when leaders confront a situation that requires making sense of a problem, connecting with others to bring multiple experiences to bear on the problem, and navigating the way to correct solutions. Another example of a complex situation in which learning goals are likely to be beneficial is the aftermath of a merger or acquisition, when there is a need for a change in culture. Setting a revenue generation performance goal is likely to prove ludicrous if it is done before merged employees discover how things need to change to make the merger effective (Latham & McCauley, forthcoming). The captain of the Titanic set a high performance goal of crossing the Atlantic Ocean in record time. The voyage might have been successful had he and his crew instead set a learning goal, focusing on discovering and implementing ways to take the flow of icebergs into account. If navigating through icebergs serves as a metaphor for organizational crisis, the value of learning goals in organizations emerges clearly.

REFERENCES

Adler, S., & Weiss, H. M. 1988. Recent developments in the study of personality and organizational behavior. In C. L. Cooper & I. T. Robertson (Eds.), ***International review of industrial and organizational psychology,*** vol. 3: 307–330. Chichester, England: Wiley.

Audia, P. G., Locke, E. A., & Smith, K. G. 2000. The paradox of success: An archival and a laboratory study of strategic persistence following radical environmental change. ***Academy of Management Journal,*** 43: 837–853.

Bandura, A. 1986. ***Social foundations of thought and action: A social cognitive theory.*** Englewood Cliffs, NJ: Prentice-Hall.

Baron, R. M., & Kenny, D. A. 1986. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. ***Journal of Personality and Social Psychology,*** 51: 1173–1182.

Brett, J. F., & VandeWalle, D. 1999. Goal orientation and specific goal content as predictors of performance outcomes in a training program. ***Journal of Applied Psychology,*** 84: 863–873.

Button, S., Mathieu, J., & Zajac, D. 1986. Goal orientation in organizational behavior research: A conceptual and empirical foundation. ***Organizational Behavior and Human Decision Processes,*** 67: 26–48.

Dweck, C. S., & Leggett, E. L. 1988. A social-cognitive approach to motivation and personality. ***Psychological Review,*** 95: 256–273.

Elliott, E. S., & Dweck, C. S. 1988. Goals: An approach to motivation and achievement. ***Journal of Personality and Social Psychology,*** 54: 5–12.

Farr, J. L., Hofmann, D. A., & Ringenbach, K. L. 1993. Goal orientation and action control theory: Implications for industrial and organizational theory. In C. L. Cooper & I. T. Robertson (Eds.), ***International review of industrial and organizational psychology,*** vol. 8: 191–232. Chichester, England: Wiley.

House, R. J., Shane, S. A., & Herold, D. M. 1996. Rumors of the death of dispositional research are vastly exaggerated. ***Academy of Management Review,*** 21: 203–224.

Kanfer, R. 1990. Motivation theory and industrial/organizational psychology. In M. D. Dunnette (Ed.), ***Handbook of industrial and organizational psychology,*** vol. 1: 75–170. Palo Alto, CA: Consulting Psychologist Press.

Kanfer, R., & Ackerman, P. L. 1989. Motivation and cognitive abilities: An integrative/aptitude-treatment interaction approach to skill acquisition. ***Journal of Applied Psychology,*** 74: 657–690.

Klein, H. J., Wesson, M. J., Hollenbeck, J. R., Wright, P. M., & DeShon, R. P. 2001. The assessment of goal commitment: A measurement model meta-analysis. ***Organizational Behavior and Human Decision Processes,*** 85: 32–55.

Latham, G. P., & Kinne, S. B. 1974. Improving job performance through training in goal setting. ***Journal of Applied Psychology,*** 59: 187–191.

Latham, G. P., Locke, E. A. & Fassina, N. E. 2002. The high performance cycle: Standing the test of time. In S. Sonnentag (Ed.), ***The psychological management of individual performance. A handbook in the psychology of management in organizations:*** 201–228. Chichester, England: Wiley.

Latham, G. P., & McCauley, C. D. Forthcoming. Leadership in the private sector: Yesterday versus tomorrow. In C. Cooper (Ed.), ***The twenty-first century manager.*** Oxford, England: Oxford University Press.

Locke, E. A. 1986. ***Generalizing from laboratory to field settings.*** Lexington, MA: Lexington Books.

Locke, E. A. 2000. Motivation, cognition, and action: An analysis of studies of task goals and knowledge. ***Applied Psychology: An International Review,*** 49: 408–429.

Locke, E. A., & Latham, G. P. 1990. ***A theory of goal setting and task performance.*** Englewood Cliffs, NJ: Prentice-Hall.

Locke, E. A., & Latham, G. P. 2002. Building a practically useful theory of goal setting and task motivation: A 35-year odyssey. ***American Psychologist,*** 57: 705–717.

Locke, E. A., Shaw, K. M., Saari, L. M., & Latham, G. P. 1981. Goal setting and task performance: 1969–1980. ***Psychological Bulletin,*** 90: 125–152.

Seijts, G. H., & Latham, G. P. 2001. The effect of distal learning, outcome, and proximal goals on a moderately complex task. ***Journal of Organizational Behavior,*** 22: 291–302.

VandeWalle, D. 1997. Development and validation of a work domain goal orientation instrument. ***Educational and Psychological Measurement,*** 8: 995–1015.

VandeWalle, D., Brown, S. P., Cron, W. L., & Slocum, J. W. 1999. The influence of goal orientation and self-regulation tactics on sales performance: A longitudinal field test. ***Journal of Applied Psychology,*** 84: 249–259.

VandeWalle, D., Cron, W. L., & Slocum, J. W. 2001. The role of goal orientation following performance feedback. ***Journal of Applied Psychology,*** 86: 629–640.

VandeWalle, D., & Cummings, L. L. 1997. A test of the influence of goal orientation on the feedback seeking process. ***Journal of Applied Psychology,*** 8: 390–400.

VandeWalle, D., Ganesan, S., Challagalla, G. N., & Brown, S. P. 2000. An integrated model of feedback-seeking behavior: Disposition, context, and cognition. ***Journal of Applied Psychology,*** 85: 996–1003.

Winters, D., & Latham, G. P. 1996. The effect of learning versus outcome goals on a simple versus a complex task. ***Group and Organization Management,*** 21: 235–250.

Wood, R. E. 1986. Task complexity: Definition of the construct. ***Organizational Behavior and Human Decision Processes,*** 37: 60–82.

Yukl, G. A., & Latham, G. P. 1978. Interrelationships among employee participation, individual differences, goal difficulty, goal acceptance, goal instrumentality, and performance. ***Personnel Psychology,*** 31: 305–323.

Gerard H. Seijts *(gseijts@ivey.uwo.ca)* is an assistant professor of organizational behavior at the University of Western Ontario. He received his Ph.D. from the University of Toronto. His current research interests include motivation, training, group processes, and organizational justice.

Gary P. Latham *(latham@rotman.utoronto.ca)* is the Secretary of State Professor of Organizational Effectiveness at the University of Toronto. He received his Ph.D. from the University of Akron. His current research interests include motivation, selection, performance management, and self-regulation.

Kevin Tasa *(tasa@mcmaster.ca)* is an assistant professor of organizational behavior at McMaster University. He received his Ph.D. from the University of Toronto. His current research interests include the role of cognitive and motivational factors in decision making and group performance.

Brandon W. Latham *(blatham@rogers.com)* is a marketing associate with the Canadian Psychological Association Performance Network. He received his B.A. from the University of Western Ontario. His current interests are in the field of advertising.