



# THE EFFECT OF CONTEXT-SPECIFIC VERSUS NONSPECIFIC SUBCONSCIOUS GOAL ON EMPLOYEE PERFORMANCE

GARY P. LATHAM AND RONALD F. PICCOLO

*We investigated the effect of context-specific versus general subconscious goals on job performance in a call center. Employees ( $n = 54$ ) were randomly assigned to a condition where they were primed by (a) a photograph of people making telephone calls in a call center, (b) a woman winning a race, or (c) a control group. Job performance was measured by the (1) number of and (2) monetary value of pledges from donors. None of the participants in the two experimental conditions showed conscious awareness of a prime. Analysis of variance indicated that both a subconscious context-specific and a subconscious general goal aroused the implicit need for achievement as assessed by a projective measure, the Thematic Apperception Test (TAT). Both types of primed goals led to a significant increase in the number of pledges during a four-day workweek. Consistent with goal-setting theory, employees in the context-specific condition raised more money than those in the general achievement (one-tailed  $t$ -test) and control (two-tailed  $t$ -test) conditions. © 2012 Wiley Periodicals, Inc.*

*Keywords:* subconscious goals, goal-setting theory, implicit motives

## Introduction

**A**n emerging research stream in human resource management suggests a novel way to increase the performance of an organization's human resources. In addition to setting a specific conscious goal, as recommended by goal-setting theory (Locke & Latham, 1990, 2002), prime a goal in the

employee's subconscious (Stajkovic, Locke, & Blair, 2006). This research stream has emerged from experiments in social psychology. The purpose of the present experiment was to further investigate the relevance of those findings for human resource management. Answers to three questions were sought. First, can a photograph serve as a prime to increase job performance? Second, if the answer is yes, does a context-specific prime lead to higher

Correspondence to: Gary P. Latham, Rotman School of Management, University of Toronto, 105 St. George Street, Toronto, Ontario, M5S 3E6, Canada, Phone: 416.978.5703, Fax: 416.978.4629, E-mail: latham@rotman.utoronto.ca

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performance than a general prime? Third, does a subconscious goal have a relatively enduring effect on job performance, or is the effect relatively momentary?

### Theoretical Explanations

Research in social psychology on primed goals has been inductive in nature. The advantages of inductive over deductively derived theory have been explained elsewhere (Locke, 2007). Nevertheless, theoretical explanations have emerged. Priming is defined as the passive, subtle, and unobtrusive activation of relevant mental representations by external stimuli outside a person's conscious awareness (Gollwitzer & Oettingen, 2012. Gollwitzer and Bargh (1996) argued that a priming stimulus activates a "behavioral schema" in a person's memory such that subconscious perceptions of a given image (e.g., achievement) activate a motive associated with that stimulus. That is, the prime activates automatic processes in the service of goal pursuit (Gollwitzer & Brandstaetter, 1997). Once the primed goal is attained, it automatically deactivates independent of conscious intention (Kawada, Oettingen, Gollwitzer, & Bargh, 2004). Similarly, Crestani (1997) argued that when a goal is primed, related concepts in memory are cued and temporarily activated until the goal is attained. Bargh and Chartrand's (2000) automaticity theory states that a goal is a mental representation of a desired end state that can be automatically activated by situational cues. The theory further states that individuals are neither aware of nor able to control the influence of a primed goal on behavior. The theory does not suggest any mediating variables. However, a second theory suggests that one such

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variable might be the implicit motive for achievement.

No social psychology experiment on primed goals has used McClelland's (1987) implicit motives theory as a framework for conducting research. This is surprising in that primed goal researchers have acknowledged that implicit needs/motives likely affect selective attention to relevant environmental stimuli that are evaluated automatically (e.g., Chen & Bargh, 1999).

In brief, implicit motives theory (McClelland, 1961, 1987; McClelland, Koestner, & Weinberger, 1989) states that subconscious needs affect behavior in ways unknown to an individual. These implicit motives have been shown empirically to influence cognitive, affective, and behavioral responses outside a person's awareness (Schultheiss & Brunstein, 2010). Central to this theory is the implicit need for achievement referred to as nAch. McClelland's (1965) research showed that nAch, as assessed by a projective measure—namely, the Thematic Apperception Test, or TAT (Murray, 1943), is critical to economic performance in business settings.

Of interest to human resource managers is that multiple researchers, working independently, have corroborated McClelland's assertion that implicit and explicit measures of need for achievement have little or no overlap in variance (Collins, Hanges, & Locke, 2004; Schultheiss & Brunstein, 2001; Spangler, 1992). Schultheiss, Yankova, Dirlikov, and Schad (2009) found that the correlation between these two measures was not significant even when the explicit measure was made as similar as possible to the implicit measure. The practical significance of this finding is that the two measures may be tapping different aspects of this need.

Of further interest to human resource managers is that nAch is an implicit motive that can be aroused (McClelland, 1965, 1987). Because cognitive resources are limited (Kanfer, 2009), Johnson and Tan (2009, p. 103) argued that the implicit motive system has a "larger impact on behavior because, as the default [information] processing mode, it operates automatically and on a faster time scale than the explicit system." Thus, both

primed goals and implicit motives have practical significance. As Johnson and Tan further noted, the modern workplace typically consumes and depletes an employee's cognitive resources: "processing in the explicit motive system becomes prohibitive which leaves processing responsibilities in the hands of the implicit system" (p. 104). Consequently, Kanfer (2009) has called for research on implicit motivation in the workplace. Hence, in addition to the three questions posed earlier, a fourth question this experiment sought to address is whether a subconscious goal, as has been found by McClelland (1965) with a conscious goal, arouses the need for achievement of employees.

No social psychology experiment on primed goals has investigated whether a prime affects the subconscious. Social psychologists have only assessed participants for their lack of awareness. Hence, those researchers typically use the word "unconscious" to describe a goal that is primed, where the latter term denotes the method used to set it. Consequently, Shantz and Latham (2009) conducted a laboratory experiment involving college students to determine whether a prime, a photograph of a woman winning a race, can affect the subconscious by arousing the need for achievement as measured by the TAT. A photograph was used as a prime because implicit motives have been found to respond preferentially to nonverbal cues (Schultheiss, 2008). The results revealed that college students in the experimental group wrote stories regarding neutral stimuli (e.g., a tree) using significantly more achievement-related words than did those in the control group. Thus, Latham, Stajkovic, and Locke (2010) advocated using the label "subconscious" rather than "unconscious." However, the external validity of this finding for employees is as yet unknown.

### *HRM Research on Primed Goals*

Only three field experiments have been published on the effect of a primed goal on employee performance. In their pilot study for their first field experiment, Shantz and Latham (2009) found that working adults

who were primed by a backdrop photograph of a woman winning a race wrote significantly more ideas for a brainstorming task than people who were given a blank sheet of paper. This finding replicated the laboratory experiment conducted by Stajkovic et al. (2006). Similarly, in Shantz and Latham's field experiment conducted in a work setting, the job performance of call-center employees was significantly higher when the backdrop of a woman winning a race was shown under the instructions for soliciting money from donors than was the case for employees in the control group where the same instructions were presented with no photographic backdrop. This result was subsequently replicated in two additional call centers (Shantz & Latham, 2011).

### *Goal-Setting and Implicit Motives Theories*

To date, Locke and Latham's (1990, 2002) goal-setting theory has had minimal impact on primed goal research. This theory and the research that supports it emphasize the importance of making a conscious goal specific. Nevertheless, all of the research in social psychology that has compared the effect of a primed goal with a conscious one used a goal that was general (e.g., "focus on quality"). However, both a laboratory (Stajkovic et al., 2006) and the initial field experiment (Shantz & Latham, 2009) on organizational behavior revealed that when the conscious goal is specific and difficult, the effect of the two types of goals on performance is additive. The practical significance of this finding for human resource management is that it shows that both a specific conscious goal and a primed goal, rather than one versus the other, should be set in the workplace.

Until now, no experiment has investigated whether a primed goal that is context-specific to the work setting leads to higher performance than a primed goal that is general in nature.

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This issue is important from the standpoint of goal-setting theory's relevance for priming research. This issue is also important for HR managers when choosing a photograph to prime a goal. In addition, no experiment has investigated the relatively enduring effect of a primed goal. Typically, the gap between the presentation of a primed goal and the assessment of the dependent variable in social psychology experiments is five minutes or less. The three Shantz and Latham (2009, 2011) field experiments assessed the effect of a primed goal on job performance for only one work shift (three to four hours). In contrast to the experiments on primed goals, the effect of a specific conscious goal on performance has been shown to last for months/years (e.g., Howard, 2005; Latham & Baldes, 1975). Automaticity theorists argue that there are no differences on performance between conscious and unconscious goals. Yet, at this point in time, there are little or no data on whether primed goals have more than a temporary effect on behavior. The issue of time length is important for HRM. A short-term effect of a few minutes or hours would minimize if not vitiate the relevance of primed goals for improving performance in work settings.

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### **Methodological Bias**

A limitation of the extant experiments on primed goals is that neither experimenter effects (Rosenthal, 1966) nor the demand characteristics of an experimental situation (that is, the totality of cues that convey an experimental hypothesis to a participant [Orne,

1962]) have been controlled. In all the laboratory experiments, the experimenter was present when participants were performing the task. In the field experiments, Shantz was present to observe firsthand whether the experimental materials were randomly assigned to the employees, and whether any employee voiced awareness of the backdrop photograph,

especially participants in the control condition where diffusion could have occurred. A further methodological criticism is that, with the exception of the Shantz and Latham field experiments, where no evidence of awareness was found, experimenters typically discard data from a participant who suggests an awareness of the hypothesis. It is not known whether any of the experimenters were subconsciously biased to discard data from one or more people who did not respond "correctly" in an interview or to a questionnaire that probed for awareness. Moreover, the presence of the experimenter, plus the participants' knowledge that they were in a laboratory experiment, may have cued them in some unknown way to perform in ways supportive of the hypotheses. Thus, these methodological concerns were addressed in the present experiment.

### **Hypotheses**

Three hypotheses were tested in this field experiment. First, consistent with Locke and Latham's (1990, 2002; Latham & Locke, 2007) goal-setting theory's emphasis on goal specificity, a subconscious goal that is context-specific to the work that is to be performed leads to a significant increase in job performance relative to the performance of employees who are primed for general achievement, and those in the control group. This hypothesis is also based on the finding that primed goals that are relevant to an individual's context facilitate the retrieval and activation of related constructs (Crestani, 1997; Ratcliff & McKoon, 1988). The second hypothesis, consistent with McClelland's (1987) implicit motives theory, is that a primed goal arouses the implicit need for achievement. Third, a "general" primed goal for achievement increases performance significantly higher than that of the control group.

### **Method**

#### **Sample and Procedure**

The participants were all 58 part-time employees (33 female, 25 male) in a university's

call center in the Southern United States. All employees were paid by the hour. Consistent with common practice in most fundraising settings, no bonuses or awards were offered for performance. The mean age of the employees was 20.60 years ( $SD = 1.50$ ). On average, they had worked in the call center 7.13 months ( $SD = 2.18$ ). The employees were randomly assigned to one of three conditions: context-specific prime ( $n = 17$ ), general achievement prime ( $n = 19$ ), or the control group ( $n = 18$ ). Four of these 58 employees quit their job during the time frame of the study. Thus, the data on 54 employees were analyzed.

Two photographs were used as primes because, as noted earlier, implicit motives have been shown to respond preferentially to nonverbal cues (Schultheiss, 2008). Locke (personal communication, January 21, 2011) commented that since priming is not quantitative, it is not possible to make subconscious goals specific in a numerical sense as is typically done with a consciously set goal. Nevertheless, subconscious goals differ, he stated, in the extent to which they are specific to the task being performed. The context-specific photograph for the present experiment might range from a very general one, such as (1) a woman winning a race, to more specific ones, such as a photograph of (2) a factory, (3) the building in which the employees work, or (4) people performing the same work as the employees in this experiment.

The first and fourth photographs were chosen as primes for this experiment. The racer was chosen for the following reasons. First, a pilot study revealed that people could not tell whether the racer was male or female. Second, the photograph had been shown by Shantz and Latham (2009) to arouse the need for achievement and increase job performance of call-center employees in Canada. Thus, this photograph allowed for direct comparisons with the results from that experiment. Because Shantz and Latham (2011) replicated their findings, if this prime failed to have similar effects with the present employees, it would suggest the present procedures need to be re-examined. Third, this prime was in no way related to the job behaviors of call-center employees. Thus, the



**FIGURE 1.** Photograph of General Achievement Prime

photograph served as a general rather than a context-specific prime (see Figure 1).

The fourth photograph, taken from a magazine, was chosen to prime a subconscious goal because it showed employees working in a call center (see Figure 2). Thus, this photograph



**FIGURE 2.** Photograph of Context-Specific Prime

was context-specific. None of the employees in the photograph worked in the present call center. They were not known by the experimenters or the employees.

The employees who participated in this experiment, as is done under everyday working conditions, drew potential donor names from a shared database. Each caller had a fact sheet associated with the target audience for the calling campaign. With the exception of the respective photographs used as primes in the two experimental conditions, the information on the fact sheets distributed by the employees' supervisor was identical.

In the context-specific prime condition, a color photograph of three call-center employees appeared in the upper-left-hand quadrant of the fact sheet. The photograph showed the three employees sitting next to each other at their respective call stations, wearing standard call-center headsets, engaged in their work. In the general achievement condition, a color photograph of a woman winning a race appeared in the upper-left-hand quadrant of the fact sheet. In the control condition, no photograph appeared on the fact sheet.

As was the case in the two Shantz and Latham (2009, 2011) field experiments, the employees had the fact sheet in front of them when making each call in order to ensure uniformity and consistency in the solicitation of donations. Unlike Shantz and Latham (2009, 2011), who presented the instructions to the employees written over the backdrop of a photograph, the two photographs in the present field experiment were clear and vivid, approximately 4 inches wide in the upper-left-hand corner of an 8½-by-11-inch page. In addition, the present field experiment differed from Shantz and Latham's in regard to the length of time for which data were collected, namely one 3–4-hour work

shift versus four consecutive workdays in the present experiment. This time length overcomes the criticism that the performance effect of a primed goal is typically assessed in minutes, if not seconds, after the manipulation of the independent variable (Latham et al., 2010). Finally, the present field experiment differs from Shantz and Latham's in that their field experiments were conducted in Canada and the present one occurred in the United States.

Performance was measured in terms of (1) the number of donors who pledged dollars to the organization, as well as (2) the actual monetary value of those pledges. More specifically, we measured the average number of pledges and average money raised per employee for each of the three conditions. Performance data were tracked automatically by the organization's call-monitoring software (*DialVision*, 7.6). Data were collected during four days in the week prior to the experiment and four days in the following workweek. The four workdays allowed data to be collected from all employees during the center's primary calling time. Calling sessions on Friday, Saturday, and Sunday are reserved for specific follow-up calls to long-standing contributors and do not typically involve all employees. As such, data were collected Monday through Thursday of each week. Our data revealed that there were a similar number of calls made during the experimental week (5,678) as the week prior (5,493), as well as a similar number of actual contacts made (569 experimental; 533 prior). In addition, an analysis of variance (ANOVA) test revealed no significant differences between conditions in the number of calls made in the week prior ( $F = .29, n.s.$ ) or during the experimental week ( $F = 1.41, n.s.$ ). Contacts indicate the number of people who actually answered the telephone when calls were made. We interpret these numbers as evidence that the time frame in which the subconscious goals were primed did not have an appreciable effect on performance.

To prevent demand effects and experimenter bias from influencing the results, the call-center supervisor, rather than the researchers, gave the information packets to

each caller. The callers sat out of direct view from one another in individual cubicles. The supervisor did not make any mention that this was a study, did not draw attention to the experimental material, and separated callers by condition so that each would be unaware of the differences among fact sheets in terms of type of photograph. No rationale was provided for the presence of the photographs, nor was a question asked by any employee regarding the presence of a photograph.

To assess whether only one or both photographs affected the subconscious, the TAT was administered immediately following the distribution of the information packets for soliciting donations. The employees were informed that management wanted to assess their creative thinking. After reading through the information packet, employees in all three conditions were shown neutral stimuli—namely, a photograph of a tree and a photograph of a stationary car. They were then asked to write stories about each of them consistent with the TAT instructions, a projective test, as noted earlier, that was developed specifically to assess patterns of subconscious thoughts, fantasies, and wishes (Dana, 2008; McClelland, 1961, 1984, 1987; McClelland et al., 1989; Murray, 1943). Specifically, each employee in the two experimental and control groups was given an 8½-by-11-inch page and informed that:

This is a test of imagination, one form of intelligence. Here is a picture; please look at it carefully. Your task is to make up as dramatic a story as you can for it. In the space below and on the following page, tell what has led up to the events shown in the picture, describe what is happening at the moment, what the characters are feeling and thinking; and then give the outcome. Write your thoughts as they come to your mind. You will have approximately 7 minutes to devote to these pictures.

Each employee's typed story was analyzed with a computerized text analysis program, namely the Linguistic Inquiry Word

Count (LIWC2007; Pennebaker, Francis, & Booth, 2001). The LIWC relies on a broad library that includes 184 achievement-oriented words and word stems such as *accomplish*, *challenge*, *overcome*, and *succeed*. The LIWC program searches each person's typed story and computes the percentage of words that reflect the achievement motive (Pennebaker, Mayne, & Francis, 1997). For assessing the effect of the subconscious on behavior, this method is superior to the use of direct questionnaires because, in addition to McClelland (1987), Spencer and Spencer (1993) argued that self-report questionnaires measure self-concepts that typically fail to measure actual behavior. Bledow and Frese (2009) similarly argued that traditional self-report measures of personal initiative assess the importance people assign it but not the extent of actual initiative at work. Further, linguistic style, as captured by measuring the frequency with which one uses particular words, "provides an understanding of how individuals convey their thoughts and feelings" (Pennebaker & King, 1999, p. 1309), an important aspect in the examination of the effect of a subconscious prime on behavior.

## Results

### *Manipulation Check*

The procedure for assessing an employee's awareness of the purpose of this field experiment was identical to that developed by Page (1969) and Bargh, Chen, and Burrows (1996), and subsequently used by Shantz and Latham (2009, 2011). In brief, the employees in the two experimental conditions were asked whether they noticed anything unusual about their information packet ( $n = 0$ ), whether they wondered if the purpose of the fact sheet was different from that which was explained to them ( $n = 0$ ), the purpose of the photograph in the corner of the information packet (none was given), and whether the photograph influenced them in any way ( $n = 0$ ). None of the employees indicated any notion of a possible relationship between the presence of a photograph and their job performance. During the debriefing session, they

said they were too busy making calls to potential donors to pay attention to a picture.

### Job Performance

The pretest data were positively skewed in that Kolmogorov-Smirnov significance was less than .01. Consistent with the recommendations of Tabachnick and Fidell (1996), each dependent variable was transformed to its logarithm. At Time 1, prior to the prime, there were no significant differences in the number of donor pledges among the three groups (context-specific prime,  $M = .48$ ,  $SD = .40$ ; general achievement prime,  $M = .41$ ,  $SD = .36$ ; control condition,  $M = .45$ ,  $SD = .32$ ;  $F = .18$ ,  $n.s.$ ) nor the amount of pledged dollars (context specific prime,  $M = 1.76$ ,  $SD = 1.02$ ; general achievement prime,  $M = 1.85$ ,  $SD = .96$ ; control condition,  $M = 2.08$ ,  $SD = .42$ ;  $F = .75$ ,  $n.s.$ ).

At Time 2, the employees in the context-specific prime ( $M = .75$ ,  $SD = .20$ ) obtained significantly more donor pledges than did those employees in the control group ( $M = .45$ ,  $SD = .28$ ;  $t = 3.61$ ,  $p < .05$ ). Although the context-specific prime yielded more pledges than the general achievement prime ( $M = .65$ ,  $SD = .32$ ), this difference was not significant ( $t = 1.05$ ,  $n.s.$ ). Planned two-tailed  $t$ -tests also revealed that employees in the general achievement prime obtained significantly more donor pledges than those in the no-prime control group ( $t = 2.02$ ,  $p < .05$ ).

With regard to pledged dollars, employees in the context-specific prime ( $M = 2.46$ ,  $SD = .28$ ) raised significantly more money than did those employees in the control group ( $M = 1.85$ ,  $SD = .90$ ;  $t = 2.64$ ,  $p < .05$ ). These employees also raised more money than those in the general achievement prime ( $M = 2.01$ ,  $SD = .97$ ;  $t = 1.82$ ,  $p < .05$  one-tailed), a result that is consistent with a major tenet of goal-setting theory—namely, a specific goal is superior to general goal. The difference between the general achievement and control group was not significant ( $t = .51$ ,  $n.s.$ ). These results are presented in Table I and illustrated in Figures 3 and 4.

The actual amount of money raised by those with a context-specific prime was 16 percent more than that which was raised by those with a general achievement prime, and 85 percent more than those in the control group. Employees in the general prime condition raised 60 percent more money than those in the control group.

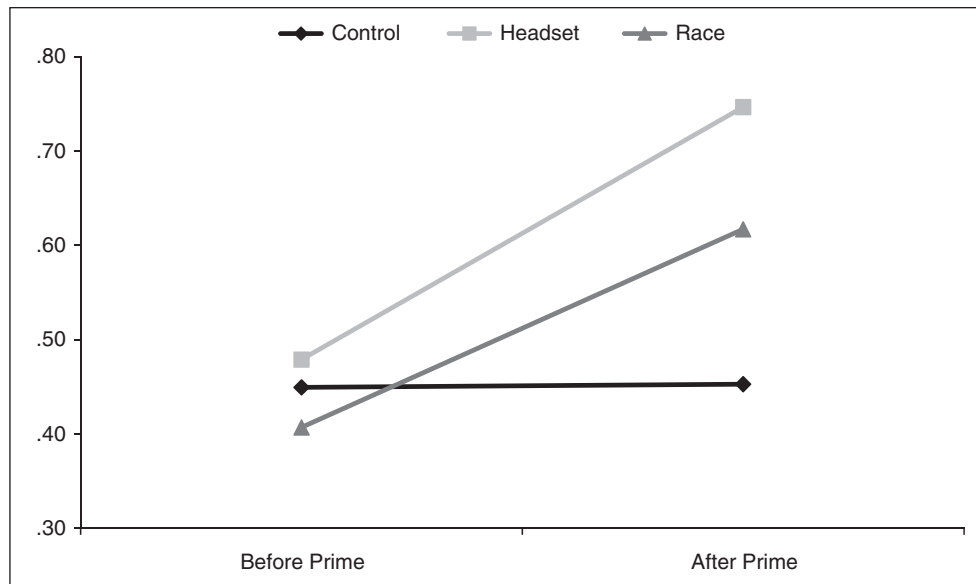
To determine whether the influence of the primed goals on job performance was relatively enduring, a two-tailed paired sample  $t$ -test was conducted on the number of donors who pledged money to employees in the two primed conditions. Contrasts were tested by comparing performance on the first and last day of the week in which the goal was primed. The results revealed no significant difference in the number of pledges or in the amount of money raised between Day 1

**TABLE I** Observed Means and Test Results for Pre- and Post-test Job Performance

Condition	n	Number of Pledges		Dollars Raised	
		Pre-test Log Mean (SD)	Post-test Log Mean (SD)	Pre-test Log Mean (SD)	Post-test Log Mean (SD)
Control	18	.45 (.32)	.45 (.28)	1.76 (1.02)	1.85 (.90)
Headset	17	.48 (.40)	.75 (.20)	1.85 (.96)	2.45 (.28)
Race	19	.41 (.36)	.65 (.32)	2.08 (.42)	2.01 (.97)
<i>F</i>		.18	5.37*	.75	2.72†

\* $p < .05$ . † $p < .10$ .





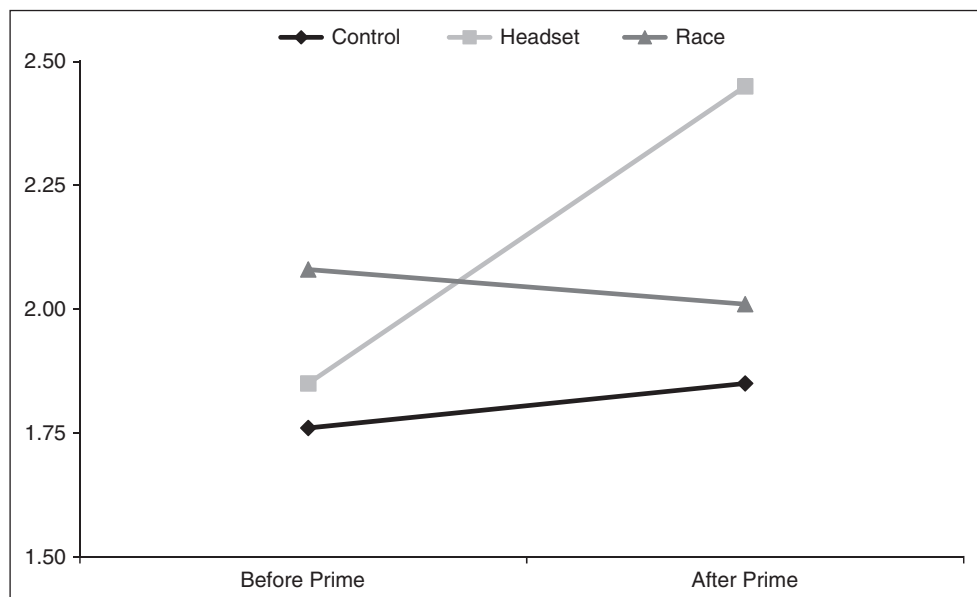
**FIGURE 3.** Pre- and Post-test Log-Transformed Mean Number of Pledges Among Three Conditions

and Day 4 of the workweek, suggesting that the two primes had a relatively enduring effect on job performance.

**Implicit Motive for Need for Achievement**

There was no significant difference in the total number of words written by employees

in the three groups ( $F = .44, n.s.$ ). There was a marginally significant difference among the three conditions in the arousal of the need for achievement ( $F = 3.26, p = .06$ ). A planned independent two-tailed  $t$ -test indicated that employees with the information packet containing the context-specific prime wrote significantly more achievement related words ( $M = 3.87, SD = 2.39$ ) regarding the neutral



**FIGURE 4.** Pre- and Post-test Log-Transformed Mean Dollars Raised Among Three Conditions

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stimuli than did those in the control group ( $M = 1.91$ ,  $SD = 2.59$ ,  $t = 2.23$ ,  $p < .05$ ). Consistent with McClelland's theory, the difference in the number of achievement words in the stories by employees with the general achievement prime versus employees in the control group was significant ( $t = 1.67$ ,  $p = .05$ , one-tailed  $t$ -test). There was no significant

At this early stage of research on primed goals in HRM, it is premature to conclude that all motivational photographs, such as those easily obtained from the Internet, will be effective for increasing the performance of all populations of employees. Nevertheless, the possibility that many of them will do so appears promising.

difference in the number of achievement-related words in the stories regarding the neutral stimuli written by employees whose information packet contained the photograph of employees wearing headsets and those whose information packet contained the photograph of the woman winning a race ( $M = 3.17$ ,  $SD = 1.94$ ,  $t = .86$ , *n.s.*). Both photographs aroused the implicit need for achievement.

## Discussion

The theoretical significance of the findings from this field experiment is at least threefold. First, of importance to automaticity, implicit motives, and goal-setting theories is that goal specificity with regard to task context does not appear to be critical for a subconscious goal to increase job performance. The present results suggest that the critical factor is for the prime to arouse the implicit motive for achievement as evidenced by the effectiveness of both the context specific and the general prime to significantly increase employee performance relative to the control group. Second, the present findings expand the relevance of automaticity theory by showing that the effect of a subconscious goal on performance lasts

beyond a few seconds, minutes, or hours. The effect in the present experiment lasted for a four-day workweek. Of further significance of the present findings for automaticity theory is that they provide support for Bargh, Gollwitzer, and Oettingen's (in press) contention that a primed goal has an effect on performance

similar to that of a consciously set goal. McClelland (1965) used a consciously set goal to increase nAch. The present results show that this implicit motive can also be aroused by a goal that is primed. Third, of theoretical importance for both implicit motives theory and automaticity theory is the finding that a primed goal for performance arouses the implicit need for achievement in a work setting. This finding provides external validity for the results obtained by Shantz and Latham (2009) with college students.

The practical significance of the present findings for HR managers is at least threefold. First, the beneficial effect of a subconscious goal on employee performance does not appear to be the result of experimenter bias or demand effects. The present field experiment was conducted by the employees' supervisor who was blind to the hypotheses of this research. Moreover, the employees were not aware that they were included in a study. Second, this is the first field experiment to show that photographs presented to employees, as opposed to college students, are able to prime a goal in the subconscious, as measured by a projective test, the TAT. Third, the photographs may not need to be context-specific, but there is tentative evidence of the dollar value for doing so. Fourth, the photograph chosen to prime a goal must be one that arouses the implicit need for achievement. Both a general prime and a context-specific prime in the present experiment aroused this implicit need.

## Limitations and Future Research

At this early stage of research on primed goals in HRM, it is premature to conclude that all motivational photographs, such as those easily obtained from the Internet, will be effective for increasing the performance of all populations of employees. Nevertheless, the possibility that many of them will do so appears promising.

A limitation of this field experiment is the small number of employees studied. Ideally, we would have examined the possible mediation effect of the implicit need for achievement for the two primed goals on employee performance. A limitation unique to experiments

conducted in organizational settings is that statistical power can rarely be gained by increasing the sample size. Unlike laboratory experiments, the sample size in a field experiment is what it is. A researcher cannot insist that an employer hire more employees in order to increase the probability of obtaining a significant result. However, given the embryonic stage of this research on organizational behavior, it would be short-sighted to wait until large employee sample sizes are available before conducting additional experiments.

Research is now needed on whether and what types of photographs have a causal negative effect on job performance. Are there pictures that human resource managers should keep out of the workplace? On the positive side, can primes be used to accelerate the internalization and implementation of an organization's strategy? Can primes be used to inculcate safe behavior in hazardous work sites? Research is needed to address such questions.

Goal-setting theory (Locke & Latham, 1990, 2002) states that feedback is a moderator variable of the positive effect of a conscious goal on job performance. Research on automaticity theory has yet to empirically investigate feedback as a moderator variable. In fact, the theory is silent on the importance of feedback. This may be because feedback in social psychology experiments has not been necessary for increasing performance measured within minutes subsequent to priming a goal. In the present experiment, an employee received immediate feedback from potential donors every time they responded to a telephone solicitation. The employees were aware of this feedback even though they were unaware of the prime. If Bargh (1994) is correct in concluding that conscious and subconscious goals only differ with regard to awareness, performance feedback is likely to be

important to the ongoing effectiveness of both types of goals for increasing job performance. Ideally, systematic research on feedback should be done in a work setting over multiple days, where employees are randomly assigned to a condition where feedback can be given or withheld. Withholding donor feedback from call-center employees was not possible in the present work setting.

Goal-setting theory also states, and empirical research shows, that the positive effect of feedback on performance is mediated by a conscious goal (Locke, Cartledge, & Koeppel, 1968). Future research should investigate whether the effect of performance feedback on job performance is also mediated by a primed goal. Research should also be conducted to determine whether task-specific feedback on subconscious goal pursuit in the workplace eventually leads to the setting of a specific conscious goal and the approximate time frame as to when this occurs, if it does indeed occur. The debriefing sessions in this and the three Shantz and Latham (2009, 2011) experiments revealed no evidence that the employees were pursuing a consciously set goal. But task-specific feedback provided for several weeks to those with a primed goal might very well lead them to consciously set a specific goal for job performance.

Finally, Grant et al. (2007) found that putting callers in contact with the beneficiaries of a call center had a significant effect on the amount of money raised relative to those in the control group. Although Grant et al. did not specifically refer to subconscious motivation, it is possible that contact with beneficiaries served as a priming mechanism for a subconscious goal. Future research should examine the possible additive and interaction effects of that intervention, with variations of the method and stimuli of a primed goal on job performance.

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**GARY P. LATHAM** is the Secretary of State Professor of Organizational Effectiveness in the Rotman School of Management at the University of Toronto. He is a fellow and past president of both the Society for Industrial-Organizational Psychology and the Canadian Psychological Association. His research interests include goal setting, nonconscious goals, and self-efficacy, among others. His work has been published widely in outlets such as the *Academy of Management Journal*, the *Journal of Applied Psychology*, *Organizational Behavior and Human Decision Making Processes*, and *Personnel Psychology*.

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**RONALD F. PICCOLO** is an associate professor and academic director of the Center for Leadership Development in the Roy E. Crummer Graduate School of Business at Rollins College. He earned a PhD in management from the University of Florida, and his research on leadership, motivation, and job design has been published in academic journals such as the *Academy of Management Journal (AMJ)*, the *Journal of Applied Psychology*, *Personnel Psychology*, and the *Journal of Organizational Behavior*. He serves on the editorial board for *AMJ*.

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