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Allison E. Seitchik [a] & Stephen G. Harkins [b]
[a] Harvard University
[b] Northeastern University
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The Effects of Nonconscious and Conscious Goals on Performance

Allison E. Seitchik
Harvard University

Stephen G. Harkins
Northeastern University

The social loafing paradigm (Harkins & Szymanski, 1987) was used to examine how nonconscious motivation combines with the effects of the potential for self- and external evaluation to affect task performance. Before generating uses for a common object, participants were primed with an achievement goal or not, given one of three conscious goal instructions, and told that their outputs would be evaluated by the experimenter or not. Results suggest that the effects of the nonconscious prime are shaped by the way that the task is defined and the manner in which the participants consciously respond to these instructions.

Research over the past decade has shown that many processes that were thought to require conscious control can in fact be carried out through nonconscious processes (e.g., Dijksterhuis, Chartrand, & Aarts, 2007). Through the use of priming (i.e., "the temporary internal activation of response tendencies" without conscious awareness of the increase in accessibility or of its effects on subsequent thoughts and behaviors; Bargh & Chartrand, 2000, p. 255), researchers have examined the automatic processing of the environment and its influence on behavior. Researchers have also extended the study of priming and automatic processing to goal pursuit. Just as mental representations (e.g., trait concepts, stereotypes) can be nonconsciously activated, goal representations can be as well. That is, as the goal representation is frequently and consistently activated in a situational context, the goal will become automatically activated each time the individual encounters that situation (cf. Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001). The activation of the nonconscious goal will then guide an individual's goal-relevant thoughts and behavior from then on, just as consciously set goals do.

Correspondence should be sent to Allison E. Seitchik, Department of Psychology, Harvard University, 33 Kirkland Street, Cambridge, MA 02138. E-mail: aseitchik@g.harvard.edu

A variety of goals (e.g., impression formation, memorization, cooperation, achievement), activated using a variety of priming tasks (e.g., scrambled sentence task, word search), have been shown to affect performance on unrelated tasks in the same way as consciously chosen goals (e.g., Bargh, Gollwitzer, & Oettingen, 2010). However, as Norem (2012) pointed out in a recent review: "We know relatively little about the interaction of conscious and nonconscious (implicit) motivation. Specifically, we know very little about 'who (or what) is in charge' when both implicit and explicit motives and goals are activated" (p. 303). In the current work, we used the social loafing paradigm (Harkins & Szymanski, 1987) to examine how nonconscious motivation combines with the independent and interactive effects of the potential for self- and external (experimenter) evaluation to affect task performance.

By evaluation, we mean a judgment of the quality and/or amount of the person's output on the given task. For evaluation to be possible, the agent of evaluation, either one's self (i.e., self-evaluation) or some other person or persons (i.e., social evaluation), must be able to compare some measure of performance output to a criterion. This criterion can be social (e.g., based on the performance of previous participants), objective (e.g., the score one would achieve if all the problems were

solved), or personal (e.g., the person's own previous level of performance). For example, in the goal-setting paradigm (Locke & Latham, 1990), goals refer not to orientations (i.e., be cooperative) but to specific numeric levels of performance that are set prior to performance that the participants are urged to strive to reach. A consistent finding in this domain is that participants given specific difficult goals outperform participants only asked to do their best, termed a goal-setting effect (Locke & Latham, 1990). In this case, the goal represents a social criterion against which the output can be compared, and this comparison can potentially be made by the person him- or herself and/or some external agent.

The social loafing paradigm includes two conditions: experimenter evaluation and no experimenter evaluation. In the basic design, participants are given do-your-best instructions. In the experimenter evaluation condition, participants are led to believe that their individual outputs are identifiable and, as a result, the experimenter will be able to evaluate their performances by comparing them to the performances of other participants (social comparison). In the no experimenter evaluation condition, participants are led to believe that their outputs are not identifiable and, as a result, the experimenter will not be able to evaluate them. In this "pooled" condition, even if the participants believe that the experimenter has a criterion against which their performance could be compared (e.g., the performances of previous participants), they know that he or she does not have access to their outputs. As a result, evaluation by the experimenter is not possible. In the participants' case, even if they believe that they know their output (e.g., how many uses they generated; how many problems they solved; how many signals they detected), they have no evaluative criterion against which to compare it. Given this minimal evaluation baseline, to examine the effects of the potential for evaluation by a given source, one need only manipulate that source's access to the information necessary for evaluation.

Using this paradigm, Harkins, White, and Utman (2000) randomly assigned participants to a condition in a 2 (experimenter evaluation vs. no experimenter evaluation) $\times$ 3 (do-your-best vs. difficult criterion with striving instructions vs. difficult criterion without striving instructions) design.[1] All participants were asked to generate uses for a common object (a knife) for 10 min.

Participants in the do-your-best conditions were simply asked to do their best to generate as many uses as they could. Participants in the difficult criterion conditions were provided with a difficult criterion of 40 uses before they began performing. Half of them were asked to strive to reach the criterion (i.e., striving instructions), whereas the other half were told that they were provided the criterion because they might be interested in knowing that our prior research showed that participants could produce this number of uses (i.e., no striving instructions). Typically in goal-setting research (Locke & Latham, 1990), these two features of a goal (a stringent criterion and instructions to strive to reach it) are confounded. In this design, they are not.

Crossed with this manipulation, half of the participants were led to believe that their outputs would be evaluated by the experimenter (experimenter evaluation), whereas the other half were led to believe that they would not be evaluated by the experimenter (no experimenter evaluation). Because all of the participants in the difficult criterion conditions were provided with a criterion (40 uses) whether they were asked to strive or not, participants in the no experimenter condition could self-evaluate with no potential for experimenter evaluation.

As can be seen in Table 1, the typical social loafing effect was replicated in the do-your-best conditions: Participants subject to evaluation outperformed those that were not (e.g., White, Kjelgaard, & Harkins, 1995). In the goal-setting literature (e.g., Locke & Latham, 1990), to test for goal-setting effects, the performance of participants in the goal condition (striving instructions with a stringent criterion) is compared to the performance of participants who are asked to do their best. In this research domain, the experimenter typically has access to participants' outputs. Replicating the goal-setting effect reported in the literature (Locke & Latham, 1990), Harkins et al. (2000) found that participants given striving instructions who were subject to the evaluation of the experimenter outperformed participants subject to experimenter evaluation who were asked to do their best.

On the other hand, participants subject to experimenter evaluation in the no striving condition did not

TABLE 1
Mean Number of Uses From Harkins et al. (2000)

	Do-Your-Best	*40 Uses Striving*	*40 Uses No Striving*
Experimenter evaluation	31.32	39.32[c]	32.90[b]
No experimenter evaluation	19.26[a]	32.05[b]	30.21[b]

Note. Comparisons are made between experimenter evaluation/do-your-best and theother conditions.
[a]Loafing effect. [b]Do-your-best effect. [c]Goal-setting effect.

[1]Harkins et al. (2000) also manipulated the validity of the criterion. For this manipulation, half of the participants were told that the criterion of 40 uses was based on the performance of other undergraduates at their university (i.e., similar others), whereas the other half were told that the criterion was based on the performance of 3rd-year Ph.D. students (i.e., dissimilar others). Similar others provide a valid criterion, whereas dissimilar others do not. However, the effects of this manipulation are not directly relevant for the current experiment and, therefore, are not included in the study description.

produce a goal-setting effect; they performed only at the level of the participants in the experimenter evaluation/do-your-best condition, termed a "do-your-best" effect. It is clear that these participants were capable of producing goal-setting effects, but they chose not to, taking advantage of the fact that the experimenter defined the task as one that did not require them to strive to achieve the goal.

This research shows that participants subject to experimenter evaluation are highly responsive to his or her instructions. When the experimenter gave the participants a stringent criterion that they were urged to strive to reach, they followed his or her instructions and produced a goal-setting effect. When the criterion was provided only as a piece of information (i.e., no striving), the instructions did not require the participants to strive to reach the goal, and they produced only "do-your-best" effects (cf. Utman & Harkins, 2010).

In contrast, as also shown in Table 1, in the no experimenter evaluation conditions there were no goal-setting effects whether the participants received striving instructions or not. Instead, participants produced "do-your-best" effects (cf. Utman & Harkins, 2010). Harkins et al. (2000) argued that this "do-your-best" level of performance met the participants' need for self-evaluation, motivating them enough to perform at a level that satisfied their need to gain self-knowledge (e.g., Festinger, 1954; Goethals & Darley, 1987) and self-validation (Goethals & Darley, 1987).

EXPERIMENT 1

In Experiment 1, we examined the effect of adding a nonconscious, diffuse source of motivation (achievement) to this paradigm. Thus, participants were either primed or not primed with an achievement goal. They were then asked to generate uses for a common object after having been informed that the experimenter would evaluate their outputs or not. Crossed with this manipulation, participants were given one of three goal-setting instructions: do-your-best, difficult criterion with striving instructions, or difficult criterion without striving instructions.

A benefit of using this design is that we know the effects that are produced in this paradigm without the nonconscious source of motivation (see Table 1), and, as a result, we can then see exactly what effect this nonconscious source has. For example, when no achievement prime is provided, participants given do-your-best instructions who are subject to experimenter evaluation should produce more uses than do-your-best participants who are not subject to evaluation, the social loafing effect (e.g., Latané, Williams, & Harkins, 1979). When provided with a difficult criterion that they are urged to strive to reach, participants subject to experimenter evaluation should produce a goal-setting effect, whereas those that are not should produce a "do-your-best" effect (Harkins et al., 2000; Utman & Harkins, 2010; White et al., 1995). Finally, participants who are provided with a stringent criterion prior to performance but are not urged to strive to reach it should perform at the same level as participants in the experimenter evaluation/do-your-best condition, a "do-your-best" effect, whether they are subject to experimenter evaluation or not (Harkins et al., 2000; Utman & Harkins, 2010). This pattern of findings is depicted in the top panel of Table 2.

To evaluate the effects of the nonconscious achievement prime, we can compare the pattern of the performance of participants in the prime conditions against that of their no prime counterparts. Based on past priming research (e.g., Bargh et al., 2001; Stajkovic, Locke, & Blair, 2006), we expect to find that the prime will increase performance in the do-your-best conditions. In Bargh et al.'s (2001) work, participants were primed with an achievement goal or not and then completed three word searches. The experimenter instructed participants to find as many words as they could in the time allotted (do-your-best instructions). Bargh et al. (2001) found that participants primed with achievement found significantly more words than those not primed with achievement. In Bargh et al.'s (2001) research, it is likely that participants felt that their performance could be evaluated by the experimenter, producing an experimenter evaluation/do-your-best condition.

Stajkovic et al. (2006) primed an achievement goal or not in the context of the goal-setting paradigm (e.g., do-your-best vs. specific criterion with striving instruction). They found that priming improved the performance of participants given do-your-best and difficult goal instructions, but they did not find a goal-setting effect. Instead participants given a conscious difficult goal performed only on par with those told to "do their best," perhaps because participants were given only

TABLE 2
Mean Predicted Results: Replication Effects and Additive Versus Task Definition Effects

	Do-Your-Best	*40 Uses Striving*	*40 Uses No Striving*
No prime/Replication			
Experimenter evaluation	30	40	30
No experimenter evaluation	20	30	30
Additive effect			
Experimenter evaluation	35	45	35
No experimenter evaluation	25	35	35
Task definition effect			
Experimenter evaluation	35	40	30
No experimenter evaluation	25	30 or 40	30

Note. The numbers represent the predicted mean number of uses for a knife.

2 min to produce their uses. In any event, participants performed better under the prime in the do-your-best condition and, again, we would argue that participants believed the experimenter could evaluate their performance. Thus, in the current research, we would expect the prime/experimenter evaluation/do-your-best participants to perform better than their no prime counterparts. In addition, there is no reason to expect that the nonconscious achievement prime would not also add to performance in the no experimenter evaluation condition.

This additive effect could also be found in the other conditions; that is, the motivation stemming from the priming manipulation could simply add to the motivation produced by the other manipulations. This additive effect would produce the pattern of results depicted in the middle panel of Table 2.

However, it is also possible that the effect of the nonconscious prime will be shaped by the way that the task is defined and the manner in which the participants consciously respond to these instructions. In the do-your-best conditions, the effect of the nonconscious prime is in alignment with the task instructions, which could result in an additive effect (see bottom panel of Table 2). In the striving conditions, the task requires that participants attempt to reach a goal of 40 uses. In the no prime/experimenter evaluation/striving condition, they should do so. In the prime condition, the participants subject to experimenter evaluation may be guided by the task definition such that they stop once they reach 40 uses, overriding the effect of the nonconscious motivation. As a result, as depicted in the bottom panel of Table 2, their performance would not differ from that of their no prime counterparts.

In the no prime/no experimenter evaluation/striving condition, Harkins et al. (2000) found that the participants produced only a "do-your-best" effect. They argued that this level of performance satisfied the participants' self-evaluative needs. It is possible that the satisfaction of these needs will override the effect of the nonconscious motivation, leading to no effect for the prime (30 uses). However, the task has been defined as one requiring the participant to strive to achieve 40 uses, and therefore it is also possible that the nonconscious motivation will add to the motivation produced by the potential for self-evaluation, leading to a goal-setting effect (40 uses).

In the no prime/no striving conditions the experimenter defines the task as not requiring 40 uses, and the no prime participants choose to take advantage of this by performing only at the do-your-best level (see top panel of Table 2). As suggested in the bottom panel of Table 2, this conscious decision may override the effect of the nonconscious prime, leading the prime participants to also perform at the do-your-best level. Thus, the motivation from the nonconscious prime may be overridden by the definition of the task.

Method

Participants

One hundred eighty-seven undergraduate psychology students (59% female, 41% male) enrolled in an Introductory Psychology class participated in this study in exchange for course credit. All participants were randomly assigned to one of 12 conditions in the 2 (prime vs. no prime) $\times$ 2 (experimenter evaluation vs. no experimenter evaluation) $\times$ 3 (do-your-best vs. difficult criterion with striving instructions vs. difficult criterion without striving instructions) between-subjects design.

Participants were excluded from the analyses if they reported any awareness of the priming (e.g., "A lot of the words had to do with winning or achieving") or if they did not complete the scrambled sentence task in the time allotted. Use of these criteria resulted in the exclusion of 16 participants (8.5%: 2.6% for failing to finish the task and 5.9% for awareness). Sessions were conducted in individual cubicles, and each session included only one participant.

Materials

Priming. The priming manipulation was a variation of the Scrambled Sentence Task (Srull & Wyer, 1979) and was presented as a psycholinguistic task. This task has been used to prime and activate competition goals (Kawada, Oettingen, Gollwitzer, & Bargh, 2004), information-processing goals (Chartrand & Bargh, 1996), and achievement goals (Stajkovic et al., 2006). In this task, participants were presented with five-word lists and asked to construct grammatically correct four-word sentences. For example, *flew, eagle, the, blue, around* is constructed into the four-word sentence: *The eagle flew around*. The priming task included a total of 20 items. In the prime condition, 60% of the items (12 of the 20) were words related to achievement (e.g., *win he sour likes to*) as suggested by Bargh et al. (2001). The 12 words related to achievement were taken from Stajkovic et al. (2006). These words were *win, effort, mastered, prevail, triumph, attain, thrives, accomplished, achieve, success, strive*, and *compete*. These 12 achievement-related words were embedded in one of the 12 sets along with four nonachievement-related words. All 12 priming sets were structured such that the achievement-related word had to be used to construct the grammatically correct four-word sentence. The remaining eight sets did not contain an achievement-related word but instead included five neutral words (e.g., *bloomed, read*) that could be made into a four-word

sentence. In the neutral prime condition all 20 sets included words that were achievement neutral (e.g., *begin you sometime will when*), which could be made into a four-word sentence as well. Participants were given a total of 7 min to complete this task, in line with Stajkovic et al. (2006).

Performance task. After completing the priming task, participants completed a use-generation task. Participants were asked to generate uses for a common object (a knife). This type of use-generation task has commonly been used in goal-setting research (Locke & Latham, 1990).

Posttask questionnaire. Finally, participants completed a posttask questionnaire, which included manipulation check items for evaluation and goal condition. All items were rated on 11-point rating scales.

Procedure

Participants were told that the purpose of the study was to examine the effects of word processing and comprehension on subsequent task performance. Upon entering the lab, participants were told that they would be completing two psycholinguistic tasks. All participants first completed the Scrambled Sentence Task. Participants were told that each item included five words and the task was to use only four of the words in each set to construct a grammatically correct sentence. They were all given 7 min to complete the task. Half of the participants were given the scrambled sentence task with the achievement-related prime words, whereas the other half of the participants were given the no prime (control) scrambled sentence task.

After 7 min, the experimenter entered the cubicle and told the participants that they would next be completing a use-generation task in which they would be asked to generate as many uses as they could think of for a common object. The experimenter presented participants with an example (i.e., hanging coats as a potential use for a coat hanger). Participants were told not to be concerned about the quality of the uses they generated but instead to attempt to generate as many uses as possible on the sheet of paper they were given in the time allotted.[2] The present study used 12 min, a time that in previous research had shown to be sufficient to produce goal-setting effects with a knife (e.g., Harkins et al., 2000). After having been informed that they had 12 min to generate uses for a knife, the participants randomly assigned to the experimenter evaluation condition were told:

> To ensure confidentiality, on our research team, only the experimenter will know how many uses you generate. After the experimenter knocks on the door to signal you to stop, she will come in and look at your sheet to count and record how many uses you generated. After this, the experimenter will place your sheet in the envelope on the door with the other participants' use sheets. The experimenter will then continue with the experiment. This way no one other than the experimenter will know which sheet belonged to you. When we have finished running this experiment, we will be able to take all the uses forms and determine how people have performed.

The other half of the participants (no experimenter evaluation) were told the following:

> To ensure confidentiality, no one on our research team will know how many uses you generate. After the experimenter knocks on the door to signal you to stop, you should place your sheet in the envelope on the door with the other participants' use sheets. After this, you can open the door for the experimenter to continue the experiment. This way no one will know which sheet belonged to you. When we have finished running this experiment, we will be able to take all the uses forms and determine how people have performed.

After the evaluation manipulation, participants were given goals. One third of participants were simply asked to "do their best" on the task (do-your-best condition). The other two thirds of the participants were told that the experimenter knew how many uses participants could come up with from past research using this same task. Half of these participants were told that when we ran this experiment before, we found that participants could generate up to 40 uses for a knife in the 12 min, and based on those results we would like them to strive to reach a goal of 40 uses for the knife in the 12 min (difficult criterion with striving instructions condition). Based on results from previous research (e.g., White et al., 1995), 40 uses is 1.5 standard deviations ($SD = 10$) above the mean of 25 uses and is judged to be a difficult but attainable criterion. The other half of these participants were told that because we thought they may be interested in how students performed in previous experiments, we could tell them that previous participants had generated up to 40 uses for a knife in the 12 min (difficult criterion without striving instructions condition).

All participants were left alone in the room and, after 12 min, the experimenter knocked on the door to signal them to stop. The experimenter then either entered the room, counted the uses generated, and added the

[2]Previous research using this task (e.g., Szymanski & Harkins, 1987) has shown that participants believe that they know how many uses they have generated and are accurate in their estimates. As a result, on this particular task, it is not necessary to provide participants with feedback to ensure that they know their output.

participants' sheets to an envelope containing the other participants' sheets (experimenter evaluation condition) or, so that their work would remain anonymous, waited for the participants to put their sheets in an envelope with the other participants' sheets before opening the door to allow the experimenter back in the room (no experimenter evaluation condition).

Finally, participants completed the posttask questionnaire. Upon completing the study, participants in the priming condition were probed for suspicion with six questions (Bargh & Chartrand, 2000). After the probing questions, all participants were debriefed.

Results

Unless otherwise noted, the data were analyzed in 2 (achievement prime vs. no achievement prime) × 2 (experimenter evaluation vs. no experimenter evaluation) × 3 (do-your-best vs. striving vs. no striving) analyses of variance (ANOVAs).

Manipulation Checks

Experimenter evaluation. Participants were asked to rate the extent to which the experimenter would know how well they performed on an 11-point scale from 1 (*not at all*) to 11 (*know exactly*). The results indicated that the experimenter evaluation participants reported that the experimenter could evaluate them to a greater extent ($M = 7.47$, $SD = 2.78$) than no experimenter evaluation participants ($M = 2.25$, $SD = 2.29$), $F(1, 159) = 170.99$, $p < .001$, $d = 2.08$.

Striving instructions. Participants were asked to rate the extent to which they had been provided a specific criterion on an 11-point scale from 1 (*not at all*) to 11 (*provided a specific criterion*). Participants in the two conditions in which a specific criterion had been given (striving and no striving) reported that they had been given a specific criterion to the same extent ($M_{\text{striving}} = 8.56$, $SD = 3.34$; $M_{\text{no striving}} = 8.81$, $SD = 2.82$; $p > .20$), and to a greater extent than participants simply asked to "do their best" ($M = 2.61$, $SD = 2.83$; $ps < .05$; Tukey Honestly Significant Difference; Kirk, 1995), $F(1, 159) = 74.76$, $p < .001$, $d = 1.38$.

Participants in the striving and no striving conditions were asked to rate the extent to which they had been asked to strive to generate a specific number of uses for a knife on an 11-point scale from 1 (*not at all*) to 11 (*asked to strive to generate a specific number of uses*). Participants given striving instructions reported that they had been told to strive to generate a specific number of uses to a greater extent ($M = 9.44$, $SD = 1.77$) than no striving participants ($M = 6.28$, $SD = 3.37$), $F(1, 109) = 42.78$, $p < .001$, $d = 1.25$.

Uses for a "Knife"

The means and standard deviations are presented in Table 3. A priori contrasts (Kirk, 1995) were used to test for replication effects. Because the performance of participants in an experimenter evaluation/do-your-best condition has been used as the comparison condition in previous goal-setting research (e.g., Locke & Latham, 1990), we have used this condition as the baseline in our own research (e.g., Harkins & Lowe, 2000; Harkins et al., 2000; Utman & Harkins, 2010; White et al., 1995), and we did so in the present work in the no prime (replication) conditions. We then contrasted performance in these no prime conditions to performance in the corresponding prime conditions.

First, in the no prime conditions, we replicated the social loafing effect (Latané et al., 1979): Experimenter evaluation/do-your-best participants produced more uses ($M = 27.47$, $SD = 9.16$) than no experimenter evaluation/do-your-best participants ($M = 15.50$, $SD = 6.29$), $F(1, 159) = 8.66$, $p < .05$, $d = .47$. Second, we replicated the typical goal-setting effect (e.g., Harkins et al., 2000): Experimenter evaluation/striving participants produced more uses ($M = 35.60$, $SD = 8.66$) than participants in the experimenter evaluation/do-your-best condition ($M = 27.47$, $SD = 9.16$), $F(1, 159) = 5.00$, $p < .05$, $d = .36$, whereas no experimenter evaluation/striving participants performed at the same level ($M = 30.64$, $SD = 9.65$) as participants in the baseline condition ($p > .35$). Third, we replicated the Harkins et al. (2000) findings for the no striving conditions: Experimenter evaluation/no striving participants produced no more uses ($M = 30.00$, $SD = 5.74$) than experimenter evaluation/do-your-best participants ($M = 27.47$, $SD = 9.16$; $p > .45$; i.e., performance at the "do-your-best" level), as was also the case for no experimenter evaluation/no striving participants ($M = 27.73$, $SD = 9.68$; $p > .50$). Taken together, this pattern of findings replicates past research using this paradigm (Harkins et al., 2000; Utman & Harkins, 2010).

TABLE 3
Experiment 1 Mean Uses for Knife

	Do-Your-Best	*40 Uses Striving*	*40 Uses No Striving*
No prime			
Experimenter evaluation	27.47 (9.16)	35.60 (8.66)	30.00 (5.74)
No experimenter evaluation	15.50 (6.29)	30.64 (9.65)	27.73 (9.68)
Prime			
Experimenter evaluation	34.23 (13.63)	38.86 (8.06)	31.40 (9.80)
No experimenter evaluation	23.88 (8.58)	39.63 (14.88)	28.93 (10.39)

Note. Standard deviations are in parentheses.

Next, we contrasted performance in each prime condition to performance in the corresponding no prime condition. Consistent with Bargh et al.'s (2001) and Stajkovic et al.'s (2006) findings, we found that the achievement prime tended to increase the performance of experimenter evaluation/do-your-best participants ($M = 34.23$, $SD = 13.63$) over that of their no prime counterparts ($M = 27.47$, $SD = 9.16$), $F(1, 159) = 3.21$, $p < .08$, $d = .29$. The prime also increased the performance of no experimenter evaluation/do-your-best participants ($M = 23.88$, $SD = 8.58$) over that of their no prime/no experimenter evaluation counterparts ($M = 15.50$, $SD = 6.29$), $F(1, 159) = 4.35$, $p < .05$, $d = .33$.

In the striving and no striving conditions, we suggested two possible outcomes: The nonconscious motivation could simply add to the effects produced by conscious motivation (depicted in the middle panel of Table 2), or the effects of the nonconscious prime could be shaped by the way that the task is defined and the manner in which the participants consciously respond to these instructions (depicted in the bottom panel of Table 2).

Consistent with the task definition account, in the striving conditions we found that the performance of participants in the experimenter evaluation condition ($M = 38.86$, $SD = 8.06$) did not differ from that of their no prime counterparts ($M = 35.60$, $SD = 8.66$; $p > .35$), nor did these means differ from the goal of 40 uses ($ps > .60$). Also consistent with this account, participants in the no experimenter evaluation condition outperformed ($M = 39.63$, $SD = 14.88$) their no prime counterparts ($M = 30.64$, $SD = 9.65$), $F(1, 159) = 6.07$, $p < .05$, $d = .39$, but did not exceed the goal of 40 uses ($p > .80$).

Also consistent with the task definition account, we found that the performance of participants in the prime/experimenter evaluation/no striving condition ($M = 31.40$, $SD = 9.80$) did not differ from performance in the no prime/experimenter evaluation/no striving condition ($M = 30.00$, $SD = 5.74$; $p > .70$), nor did the performance of participants in the prime/no experimenter evaluation/no striving condition ($M = 28.93$, $SD = 10.39$) differ from that of their no prime counterparts ($M = 27.73$, $SD = 9.68$; $p > .70$).[3]

Discussion

In the no prime condition, we replicated the findings of Harkins et al. (2000) and Utman and Harkins (2010). In the do-your-best conditions, participants subject to evaluation produced more uses than no evaluation participants, a social loafing effect (Latané et al., 1979). In the striving condition, participants subject to evaluation produced a goal-setting effect (performance greater than that found in the experimenter evaluation/do-your-best condition), whereas participants not subject to experimenter evaluation produced only a "do-your-best" effect (performance at the same level as in the experimenter evaluation/do-your-best condition). Also, as in this previous research, participants in the no striving conditions performed at the do-your-best level, regardless of the potential for experimenter evaluation.

In the do-your-best conditions, the achievement prime increased the performance of participants in the experimenter evaluation and no experimenter evaluation conditions over that of their no prime counterparts, replicating previous findings (Bargh et al., 2001; Stajkovic et al., 2006). In the striving conditions, we found that the nonconscious prime increased the level of performance until the goal was reached, but no further. Finally, in neither the experimenter evaluation/no striving nor the no experimenter evaluation/no striving conditions did performance in the prime condition differ from performance in the no prime condition.

These findings are consistent with the notion that the effects of the nonconscious prime are shaped by the way that the task is defined and the manner in which the participants consciously respond to these instructions. When the experimenter instructs the participants to "do their best," the motivation stemming from the prime adds to the motivation present in the experimenter and no experimenter evaluation conditions. When the experimenter urges participants to strive to reach 40 uses and can evaluate them, we find that adding the prime does not produce performance any greater than that found in the no prime condition. In this case, the experimenter has defined the level of performance that is required, and once reached, both the primed and the nonprimed participants stop. When the experimenter cannot evaluate the participants and urges them to strive to reach 40 uses, the motivation stemming from the nonconscious prime increases participants' performance up to 40 uses (i.e., the goal).

On the other hand, in the no striving conditions, the experimenter has defined the task as one that does not require the participants to strive to reach 40 uses. In this case, we know that the participants are capable of reaching the criterion given by the experimenter, but they choose not to strive, working only up to the "do-your-best" level. The nonconscious motivation is overridden by the experimenter's no striving instructions.

However, there is a plausible alternative explanation for the findings in the striving conditions. It is possible that the primed participants stopped at around 40 uses, not because they hit the criterion set by the experimenter

[3]The overall ANOVA yielded an Experimenter Evaluation × Instruction interaction, $F(2, 159) = 3.63$, $p < .05$, $d = .44$; and main effects for experimenter evaluation, $F(1, 159) = 7.72$, $p < .01$, $d = .44$; instructions, $F(2, 159) = 13.51$, $p < .001$, $d = .58$; and priming, $F(1, 159) = 6.37$, $p < .05$, $d = .40$.

but because they hit a physical limit. That is, the prime would have added motivation beyond that produced by the goal, but the primed participants simply did not have the ability to generate more uses in 12 min. We tested this possibility in Experiment 2.

EXPERIMENT 2

To test whether participants stopped because they hit the criterion or because they hit a physical limit, we manipulated the prime (prime vs. no prime) and experimenter evaluation (experimenter evaluation vs. no experimenter evaluation) and urged participants to strive to reach 45 uses. If the participants have the capacity to reach this criterion level of performance and are guided by the experimenter's instruction, we should find the same pattern of performance for these conditions as in Experiment 1 but shifted up above 40. If the primed participants stopped at around 40, not because they approached the criterion set by the experimenter but because they hit a physical limit, we should find essentially the same pattern and level of performance as we saw when the criterion was set at 40 uses.

This latter possibility could explain the pattern of results in the striving conditions in Experiment 1 but would not tell us whether the nonconscious prime adds to the effect of the striving instructions or is overridden by these instructions. To test this possibility, we also included a set of conditions in which participants were urged to strive to reach 28 uses, the "do-your-best" level of performance found in Experiment 1 (no prime/experimenter evaluation/do-your-best condition). If the participants' behavior is driven by the experimenter's instructions (i.e., the task definition), we should find that participants in each of the conditions produce around 28 uses, whether there is a prime or not. Certainly with a goal of 28 uses, there is ample room for the prime to improve performance should the nonconscious and conscious sources of motivation combine additively.

Method

Participants

One hundred eleven undergraduate psychology students (43% male, 57% female) enrolled in an Introductory Psychology class participated in this study in exchange for course credit. All participants were randomly assigned to one of eight conditions in the 2 (prime vs. no prime) × 2 (experimenter evaluation vs. no experimenter evaluation) × 2 (Criterion: 28 uses vs. 45 uses) between-subjects design.

Participants were excluded from the analyses if they reported any awareness of the priming (e.g., "A lot of the words had to do with winning or achieving") or if they did not complete the scrambled sentence task in the time allotted. Use of these criteria resulted in the exclusion of nine participants (8%—3% for failing to finish the task and 5% for awareness). Sessions were conducted in individual cubicles and each session included only one participant.

Materials

The priming manipulation used in Experiment 1 was also used in Experiment 2. As in Experiment 1, participants were given a total of 7 min to complete this task. After completing the priming task, participants completed the use task employed in Experiment 1. Finally, participants completed the posttask questionnaire.

Procedure

The procedure used in Experiment 1 was also used in Experiment 2. After the Scrambled Sentence Task (prime vs. no prime) and the experimenter evaluation manipulation (experimenter evaluation vs. no experimenter evaluation), participants were given goals. All of the participants were told that the experimenter knew how many uses participants could come up with from past research using this same task. Half of these participants were told that when we ran this experiment before, we found that participants could generate up to 45 uses for a knife in the 12 min, and based on those results we would like them to strive to reach a goal of 45 uses for the knife in the 12 min. The other half was given a goal of 28 uses.

As in Experiment 1, all participants were left alone in the room and, after 12 min, the experimenter knocked on the door to signal them to stop. The experimenter then either entered the room, counted the uses generated, and added the participants' sheets to an envelope containing the other participants' sheets (experimenter evaluation condition) or, so that their work would remain anonymous, waited for the participants to put their sheets in an envelope with the other participants' sheets before opening the door to allow the experimenter back in the room (no experimenter evaluation condition).

Finally, participants completed the posttask questionnaire. Upon completing the study, participants in the priming condition were probed for suspicion with six questions (Bargh & Chartrand, 2000). After the probing questions, all participants were debriefed.

Results

Unless otherwise noted, the data were analyzed in 2 (achievement prime vs. no achievement prime) × 2 (experimenter evaluation vs. no experimenter evaluation) × 2 (Criterion: 28 uses vs. 45 uses) ANOVAs.

Manipulation Checks

Experimenter evaluation. Participants were asked to rate the extent to which the experimenter would know how well they performed on an 11-point scale from 1 (*not at all*) to 11 (*know exactly*). The results indicated that the experimenter evaluation participants reported that the experimenter could evaluate them to a greater extent ($M = 7.02$, $SD = 3.08$) than no experimenter evaluation participants ($M = 3.00$, $SD = 3.09$), $F(1, 94) = 40.60$, $p < .001$, $d = 1.31$.

Striving instructions. Participants were asked to rate the extent to which they had been provided a specific criterion on an 11-point scale from 1 (*not at all*) to 11 (*provided a specific criterion*). All participants in this experiment had been provided a specific criterion (28 uses or 45 uses), and no differences were found in this analysis ($ps > .25$). The overall mean ($M = 9.90$) was approximately the same as that found in the conditions in Experiment 1 in which a specific criterion was provided ($M = 8.69$).

Participants were also asked to rate the extent to which they had been asked to strive to generate a specific number of uses for a knife on an 11-point scale from 1 (*not at all*) to 11 (*asked to strive to generate a specific number of uses*). All participants in this experiment were asked to strive to generate a specific number of uses, and no differences were found on this measure ($ps > .30$). Once again, the overall mean ($M = 9.13$) was approximately the same as that found in Experiment 1 in the conditions in which participants were told to strive to generate a specific number of uses ($M = 9.44$).

Uses for a "Knife"

The overall analysis yielded a Prime × Experimenter Evaluation × Criterion interaction, $F(1, 94) = 4.32$, $p < .05$, $d = .43$. The means and standard deviations are presented in Table 4. To decompose this three-way interaction, we ran two two-way ANOVAs (Experimenter Evaluation × Prime), one on the data for the 45-use criterion and the other on the data for the 28-use criterion.

TABLE 4
Experiment 2 Mean Uses for Knife

	28 Uses Striving		*45 Uses Striving*	
	No Prime	*Prime*	*No Prime*	*Prime*
Experimenter evaluation	27.93 (7.35)	27.62 (4.94)	37.18 (8.33)	36.75 (6.27)
No experimenter evaluation	27.14 (5.99)	26.07 (6.20)	29.82 (4.81)	39.09 (5.70)

Note. Standard deviations are in parentheses.

In each analysis, we used the error term for the three-way interaction.

The analysis of the 2 × 2 in which participants were urged to strive to reach a criterion of 45 uses yielded an Experimenter Evaluation × Prime interaction, $F(1, 94) = 6.65$, $p < .05$, $d = .53$. Replicating the finding from Experiment 1 in which a criterion of 40 uses was employed, participants in the prime/experimenter evaluation condition produced no more uses ($M = 36.75$, $SD = 6.27$) than participants in the no prime/experimenter evaluation condition ($M = 37.18$, $SD = 8.33$; $p > .50$). As was also the case in Experiment 1, participants in the prime/no experimenter evaluation condition generated more uses ($M = 39.09$, $SD = 5.70$) than participants in the no prime/no experimenter evaluation condition ($M = 29.82$, $SD = 4.81$), $F(1, 94) = 11.89$, $p < .05$, $d = .71$. The main effect for prime, $F(1, 94) = 5.52$, $p < .05$, $d = .48$, must be interpreted in the context of the two-way interaction.

The analysis of the 2 × 2 in which participants were urged to strive to reach a criterion of 28 uses yielded no reliable effects. Participants in the prime/experimenter evaluation condition produced no more uses ($M = 27.62$, $SD = 4.94$) than participants in the no prime/experimenter evaluation condition ($M = 27.93$, $SD = 7.35$; $p > .50$). Likewise, the performance of participants in the prime/no experimenter evaluation condition ($M = 26.07$, $SD = 6.20$) did not differ from performance in the no prime/no experimenter evaluation condition ($M = 27.14$, $SD = 5.99$; $p > .50$).

The overall analysis also yielded a main effect for criterion, $F(1, 94) = 45.82$, $p < .001$, $d = 1.40$, and a Prime × Criterion interaction, $F(1, 94) = 4.13$, $p < .05$, $d = .42$. However, these effects must be interpreted in the context of the three-way interaction.

Discussion

The results for the 45-use criterion simply replicated the pattern found in the 40-use condition in Experiment 1. In the experimenter evaluation condition, the performance of participants who received the prime did not differ from those that did not. However, in the no experimenter evaluation condition, the prime participants outperformed the no prime participants. In no case did the average performance of these participants go over even 40 uses, much less up to 45. This pattern of results is consistent with the argument that the participants had hit their physical limit on this task.

As a result, the findings for the 45-use criterion do not allow us to see whether the conscious and nonconscious sources of motivation summed, or the experimenter's instructions overrode the effect of the prime. However, the findings for the 28-use criterion do provide a definitive answer. Regardless of the prime, the participants

stopped at the level of performance specified by the experimenter, 28 uses. This finding strongly supports the notion that the directions provided by the experimenter overrode the effect of the prime.

GENERAL DISCUSSION

By using the social loafing paradigm, we were able to examine how a nonspecific, nonconscious source of motivation (achievement) combined with the independent and interactive effects of the potential for experimenter and self-evaluation. Past research has found that participants subject to experimenter evaluation are highly responsive to the experimenter's instructions, whereas participants who can self-evaluate alone perform only at a "do-your-best" level, which satisfies their need for self-evaluation (e.g., Harkins, 2000; Harkins et al., 2000; Utman & Harkins, 2010; White et al., 1995). Results from Experiment 1 replicated these findings in the no prime conditions. When asked to "do their best," participants evaluated by the experimenter outperformed participants who could not be evaluated, the social loafing effect. Those participants given the difficult criterion with striving instructions produced a goal-setting effect when they were subject to experimenter evaluation and a "do-your-best" effect when they were not. Finally, regardless of evaluation condition, participants given the difficult criterion without striving instructions produced "do-your-best" effects.

In the prime conditions, the findings are consistent with the argument that the effect of the nonconscious prime is shaped by the task definition (i.e., the conscious source of motivation provided by the experimenter's instructions). In the do-your-best conditions, the motivation stemming from the nonconscious prime was consistent with the experimenter's instructions to the participants to "do their best," and the two sources summated (cf. Bargh et al., 2001; Stajkovic et al., 2006). Participants who were asked to strive to reach the specific, difficult criterion did reach the goal regardless of evaluation condition, with the achievement prime adding only to the motivation stemming from the motivation present in the no experimenter evaluation condition. In this case, the experimenter defined the level of performance required and the primed participants stopped once they reached this level. However, when participants were given the stringent, difficult criterion without striving instructions, the experimenter defined the task as one on which participants did not need to strive, and thus they only "did their best." The achievement prime did not add to these effects.

In Experiment 2, an alternative interpretation for the findings in the striving conditions was tested. Participants could have stopped generating uses in these conditions, not because they reached the criterion but because they hit their physical limit. In fact, when we increased the criterion to 45 uses, we found that participants produced exactly the same pattern of performance as at 40 uses, suggesting that participants had hit their physical limit. However, once the criterion was lowered to 28 uses, participants clearly had the capability to surpass the criterion if the achievement prime did add to the motivation stemming from the striving instructions. But instead of adding to the conscious motivation, the effect of the prime was overridden by the instructions provided by the experimenter: Primed participants asked to strive to reach a criterion of 28 uses produced the same "do-your-best" effects as their no prime counterparts.

The present results are consistent with theorizing by Bargh and his colleagues (Bargh et al., 2010; Dijksterhuis & Bargh, 2001) that suggests that when conscious and nonconscious sources of motivation are compatible, their effects summate. For example, Bargh et al. (2001) found that when conscious and nonconscious goals were the same (e.g., behave cooperatively), the two sources of motivation combined additively producing two main effects. However, Bargh et al. (2010) suggested that when conscious and nonconscious goals conflict with each other, the conscious goal prevails and directs behavior (cf. Gollwitzer, Sheeran, Trötschel, & Webb, 2012). For instance, MacRae and Johnston (1998) primed half of their participants with helpfulness and the other half were not primed. As participants then walked from one experimental session to the next, a confederate dropped a number of objects. However, some of these participants were also told that they were running late for the next session. The results showed that, under these conditions, participants primed with helpfulness did not help more than those who were not. Thus, the experimenter's instructions that the participant was running late overrode the nonconscious goal to help the confederate.

In the current research, when asked to do their best, participants put out greater effort when they were subject to experimenter evaluation than when they were not, but in neither case was the nonconscious motivation to achieve in conflict with the instruction to do one's best. When participants were presented the difficult criterion with striving instructions, there was also no conflict between the conscious and nonconscious goals until the goal prescribed by the experimenter was reached. Thus, according to Bargh et al.'s (2010) account, in these conditions the achievement prime should add to the effects of the task definition and this is what we found.

When given the difficult criterion without striving instructions, the fact that participants were not asked to strive for the goal and, as a result, only wanted to "do their best" conflicted with the desire to achieve produced by the nonconscious goal. Based on Bargh et al.'s (2010) work, this conflict should be resolved in favor of

the conscious motivation. That is, regardless of evaluation condition, there should be no difference between prime and no prime participants in these no striving conditions, and this is what we found.

However, there are other possible accounts for our results. For example, in an updating of Maslow's (1943) pyramid of human needs, Kenrick, Griskevicius, Neuberg, and Schaller (2010) suggested that needs are not dismissed or replaced with high-order needs when reached but, instead, overlap with later developing goal systems. This overlapping system takes into account the notion that goal importance plays a role in goal activation and pursuit. More specifically, situational cues interact with an individual's developmental phase, along with situational cues and an individual's traits, to determine a cost–benefit ratio, which then determines whether a given motivational system will be activated in order to achieve a goal. If the cost–benefit ratio is not beneficial, then that motivational system will not be activated and subsequent behaviors will not be taken to achieve that goal (Kenrick et al., 2010).

With respect to our findings, it is possible that the esteem/status motive is seen as more important (i.e., weighted more heavily in the cost–benefit ratio) than the achievement motive. In the no striving conditions, the primed participants may be motivated to eliminate the threat to their esteem/status by taking advantage of the no striving instructions so as to avoid testing themselves and falling short in their own eyes and/or those of the experimenter. As a result, the nonconscious achievement prime is overridden because it is deemed to be less important than eliminating the threat to esteem/status.

This account suggests that when motives are conflicting, it is not whether they are conscious or nonconscious that determines the course of behavior; rather it is the motive that weighs more heavily in the cost–benefit ratio (e.g., esteem/status vs. achievement). However, recent research by Utman and Harkins (2010) suggests that conscious sources may be more potent than nonconscious ones. Utman and Harkins used the same experimental design as the current research, but instead of priming nonconscious achievement motivation, they manipulated conscious ego-involvement by either telling the participants that performance on the task was highly related to academic achievement (high ego-involvement) or telling them nothing (low ego-involvement). Under low ego-involvement, Utman and Harkins replicated the pattern of findings produced in the no prime condition of the current research (cf. Harkins et al., 2000). Under high ego-involvement, just as with the nonconscious achievement prime, participants given striving instructions produced goal-setting effects, regardless of the potential for experimenter evaluation. However, in the no striving conditions, under high ego-involvement, they found that the opportunity to self-evaluate was sufficient to produce a goal-setting effect, whereas participants subject to experimenter evaluation still worked only at the "do-your-best" level.

Thus, although a nonconscious achievement prime produced only a "do-your-best" effect in the no experimenter evaluation/no striving condition, a conscious achievement manipulation produced a goal-setting effect. Perhaps nonconscious motivation is simply experienced as heightened motivation without a specifiable source and does not enter into the cost/benefit analysis in the same way that the conscious, ego-involvement manipulation does. Of course, this interpretation is speculative. It is also possible that Utman and Harkins's (2010) conscious manipulation of ego-involvement is simply more potent than our manipulation of nonconscious achievement motivation. Additional research will be required to support these accounts or some other account.

The social loafing paradigm can be a useful tool in conducting this research. In the current research, using this paradigm we find that nonconscious motivation does not simply add to the effects of conscious motivation, whether the source of evaluation is self or external. Nor does nonconscious motivation add to the motivation stemming from the potential for self-evaluation but not to the motivation resulting from the potential for evaluation by an external source, as suggested by Utman and Harkins's (2010) work on ego-involvement. Instead the effect of the nonconscious prime is shaped by the way that the task is defined and the manner in which the participants consciously respond to these instructions. Under some conditions, the nonconscious motivation does add to the motivation resulting from the conscious source (e.g., do-your-best instructions). Under others, the effect of the conscious source overrides that of the nonconscious (e.g., no striving instructions), whereas under yet others, the effect of the nonconscious source adds to the conscious source but only up the point defined in the instructions (e.g., striving instructions). Thus, by using this paradigm we are able to see the wide range of effects that can be produced by combining conscious and nonconscious motivation.

These findings also have implications for motivation and performance in real world settings (e.g., work, school, sports). For example, the findings suggest that using nonconscious primes (e.g., achievement words incorporated into texts or manuals) in combination with explicit numeric goals will improve performance, whether the target is subject to external evaluation or not. In fact, our findings suggest that using nonconscious primes will improve performance, even if only "do your best" instructions are used. Thus, the current research represents a promising first step in an examination of the theoretical and practical implications of the effects of the activation of implicit and explicit motives and goals in the context of self- and external evaluation.

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