Nonconscious activation of achievement goals: moderated by word class and the explicit achievement motive?

Stefan Engeser

Technische Universität München, Germany

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Abstract

In a series of experiments, Bargh et al. (2001) documented that achievement goals can be activated outside of awareness and can then operate nonconsciously in order to guide self-regulated behavior effectively. In three experiments ($N = 69$, $N = 71$, $N = 56$), two potential moderators of the achievement goal priming effect were explored. All three experiments showed small but consistent effects of the nonconscious activation of the achievement goal, but word class did not moderate the priming effect. There was no support for the hypothesis that the explicit achievement motive moderates the priming effect. Implications are addressed in the light of other recent studies in this domain and further research questions are outlined.

Key words: achievement, priming, nonconscious activation, goals, explicit, motive, nouns, verbs
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Although it is not necessarily compatible with our introspection, it seems evident that goals are also rooted in and controlled by nonconscious processes (Ach, 1935; Prinz, 1996; Bargh, 1990). Empirical studies with different priming manipulations also confirm this line of reasoning (e.g., Bargh, 1990; Bargh, & Gollwitzer, 1994; Chartrand, & Bargh, 1996; Ferguson, 2007; Moskowitz, Gollwitzer, Wasel, & Schaal, 1999; Fitzsimons, & Bargh, 2003). The nonconscious activation of achievement goals in particular was demonstrated by Bargh, Gollwitzer, Lee-Chai Barndollar and Trötschel (2001).

In four out of five experiments conducted by Bargh et al. (2001), the goal to perform well was primed with achievement-related words hidden in a word search puzzle (win, compete, succeed, strive, attain, achieve, and master). For the neutral priming condition, the words to be found were ranch, carpet, river, shampoo, robin, hat, and window. Subsequent to the priming manipulations, all participants had to find as many words as possible in the word search puzzles (Experiments 1 and 3), create words in a variation of the game of Scrabble (Experiment 4) or were confronted with task choice after interruption (Experiment 5). The results clearly showed an effect of the achievement words. Participants in the priming condition found or created more words (11, 4 and 12 % of the variance was explained by achievement word manipulation) or chose to work on the interrupted achievement task (10 % explained variance). Taking into account that none of the participants were aware of any relationship between priming task and experimental tasks, the results are a clear indication that achievement goals can be primed. Furthermore, the effect sizes are medium to strong and quite remarkable considering the small intervention.

Bargh et al. (2001; Bargh, 1990) argued that the priming conditions activate the “goal of doing well”, which subsequently fosters the experimental goal (e.g. finding words). In a domain unrelated to achievement goals, Aarts, Chartrand, Custer, Danner, Dik, Jefferis, and Cheng (2005) found that the priming of helpful behavior could only be found in people who
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had a stronger preexisting goal of helping (see also Strahan, Spencer, & Zanna, 2002, Fitzsimon & Bargh, 2004). In the achievement domain, the achievement motive might represent this “goal of doing well” (McClelland, Atkinson, Clark, & Lowell, 1953; Brunstein & Heckhausen, 2008a). In one experiment, Bargh and Gollwitzer (1994) measured the implicit achievement motive, but did not find an interaction effect with the priming manipulation. The fact that the implicit achievement motive could not be activated might be explained by the fact that the priming manipulation used words as the priming stimuli format (Schultheiss, 2001). Furthermore, the Aarts et al. (2005) experiment measured the preexisting goal of doing well with a questionnaire, which would be understood as an explicit motive (Brunstein & Heckhausen, 2008a; McClelland, Koester, & Weinberger, 1989; Rheinberg, 2008). Therefore the explicit achievement motive might represent the chronic “goal of doing well” which is supposed to be activated by achievement goal priming.

The priming stimuli of the Bargh et al. (2001) study are verbs, while the neutral words are nouns (see above). The priming effect of finding more words after achievement-related priming might therefore be attributed to an activating effect of verbs and not necessarily to an activation of an achievement goal. The same words as in the experiments by Bargh et al. were also used by Oikawa (2005) and Stajkovic, Locke, and Blair (2006; pilot study) to prime achievement goals. Although some studies do not mention the stimuli used in the neutral condition, other priming studies have not confounded word content and word class (e.g. Aarts et al., 2005; Bargh, Chen, & Burrows, 1996). Therefore, it would be reasonable to conclude that word class has no influence. However, these studies did not prime achievement goals, and the confounding factor could be especially relevant in achievement situations.

Federmeier, Segal, Lombrozo and Kutas (2000), for example, stated that: “Nouns are pointers to objects (people, places, and things) and verbs generally refer to actions and states” (p. 2552). The reference that verbs make to actions and states might be responsible for the
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observed priming effect. People are simply more activated in general by reading verbs, and combined with the explicit goal of finding words in the word search puzzle, this could make the achievement higher regardless of the content of the words.

In three experiments, I wanted to replicate the achievement goal priming effect of Bargh et al. (2001) in order to study two potential moderators. I expected the priming of achievement goals to be moderated by the achievement motive: the higher the achievement motive, the higher the priming effect. I tested this hypothesis in Experiments 1 and 3. In order to exclude possible alternative explanations of Bargh et al.’s results, I systematically varied the achievement content and class of words in Experiments 2 and 3. I expected the achievement content alone to lead to a better achievement in the subsequent task, but had no expectations about the effect of word class.

EXPERIMENT 1

Method

Participants

79 subjects took part in the experiment. One participant was aware of the priming manipulation and was therefore excluded from further analysis. I also excluded eight participants who had problems understanding the instructions, and one participant who was not a native German speaker. The following analyses are based on the remaining 69 persons (23 men, 46 women). Their mean age was 26.4 years ($SD = 9.74$) and ranged from 17 to 59 years. Forty-six participants were students (28 psychology students) and 23 were of different professions or were high school students. A between-subject one-factor (achievement priming: achievement words, neutral words) design was used and the personal variable achievement motive was measured. Participants received either course credit or feedback.

Materials

The explicit achievement motive was measured with the achievement subscale of the
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Personality Research Form (PRF; Stumpf, Angleitner, Wieck, Jackson & Beloch-Till, 1985). The PRF is the most commonly used motive questionnaire in a wide range of research topics (e.g. Brunstein & Maier, 2005; Pang & Schultheiss, 2005).

The priming manipulation participants were asked to find 13 words in a 13 x 13 matrix of letters. As in the Bargh et al. (2001) experiments, the words embedded were presented on the right-hand side of the matrix. Words could appear with letters in a straight line either forwards, backwards, diagonally, up or down. For the achievement priming condition, I used the German translations of goal, win, master, contest, best, victory, and success (Ziel, gewinnen, meistern, Wettkampf, Bester, Sieg, and Erfolg).

I also used the German translations of the following words, which were the same in both conditions: carpet, radio, hat, table, picture, and tree. For the neutral priming condition, I used the words head, handball, floor, building, animal, and root.

The number of words found in the three experimental word search puzzles served as the dependent measure. In analogy to Bargh et al. (2001), the embedded words were not listed next to the three puzzles and each puzzle had a different theme. The words could appear forwards, backwards, diagonally, up or down. Instead of the 10x10 letter matrix used by Bargh et al., I used a 14 x 14 letter matrix. In the three puzzles, ten animals (e.g., salamander, eagle, antelope), ten colors (e.g. violet, red, orange), and ten foods (e.g., bread, egg, potato) had to be found. As in the Bargh et al. experiments, the participants were able to switch between these tasks.

Procedure

At least one day before the experiment, the participants filled out the subscales of the PRF. The experiment was conducted either individually (24 participants) or in groups of up to four people. The participants were randomly assigned to the different priming manipulations and worked on the priming task until they found all 13 words. The instructions for the
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experimental word search puzzles informed the participants that they had 10 minutes to find as many words as possible from the 10 words hidden in each of the three puzzles. The puzzle was entitled with the theme and the participants were informed that they could switch between the three puzzles whenever they liked (this is analogous to the Bargh et al. procedure). The order in which the puzzles were given to the participants was counterbalanced. After 10 minutes, the task ended and participants were asked whether they had any idea what the experiment was about. I further asked specifically about any suspicions regarding the relationship between the priming and the experimental task. Finally, the participants were debriefed.

Results

Participants found an average of $M = 8.30$ ($SD = 3.25$) out of 30 words. A regression analysis was conducted on the number of words, with the achievement motive, the experimental manipulation, and their interaction term as predictors (predictor variables were centered before their interaction term was calculated; see Aiken & West, 1991). There was no reliable main effect for the achievement motive, $\beta = 0.11$, $t(67) = 0.89$, $p = .38$. There was a positive effect for the experimental manipulation of achievement content, but it was not reliable either, $\beta = 0.14$, $t(66) = 1.16$, $p = .25$. In the achievement priming condition, the participants found $M = 8.75$ ($SD = 3.64$) words and in the neutral condition $M = 7.82$ ($SD = 2.74$) words (see Figure 1). The interaction between the two predictors was not significant either; $\beta = 0.11$, $t(67) = 0.89$, $p = .38$.

Discussion

The participants in the achievement condition found more words, but this effect was not statistically significant. Moreover, I did not find the expected interaction between achievement priming and the achievement motive.

Before considering theoretical reasons why I did not find a statistically reliable
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priming effect and why the achievement motive did not moderate this effect, some critical methodological aspects have to be taken into account. Firstly, the current task was more difficult than in the Bargh et al. (2001) study. In their Experiment 1, participants found 24 out of 30 words. Secondly, although it was filled out at least one day before the experiment, the measurement of the achievement motive might have primed an achievement goal for all participants. I therefore changed these two aspects in the next experiment. I made the experimental task less difficult and did not measure the achievement motive. To avoid confounding conditions such as those in Bargh et al. (2001), I again manipulated achievement content and word class separately.

EXPERIMENT 2

Method

Participants

Seventy-five people participated. Two participants were aware of the priming manipulation and were therefore excluded from further analysis. I also excluded two participants who had problems understanding the instructions. The following analyses are based on the remaining 71 persons (32 men, 39 women). Their mean age was 25.5 years ($SD = 9.09$) and ranged from 17 to 57 years. 46 participants were students (19 psychology students) and 25 were from various different professions. A 2 (achievement priming: achievement words, neutral words) x 2 (word class: verbs, nouns) between-subject factorial design was used. Participants received either course credit or feedback.

Materials

The priming manipulation was equivalent to Bargh et al. (2001). Participants were asked to find 13 words in a 10 x 10 matrix of letters. The words embedded were presented on the right-hand side of the matrix. Words could appear with letters in a straight line either forwards, backwards, diagonally, up or down. I used the corresponding German verbs of the
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words used by Bargh et al. (2001) for the achievement verbs (see introduction; *siegen*, *meistern*, *streben*, *leisten*, *wetteifern*, *gelingen*, *erreichen*). For the achievement noun, I used the corresponding German nouns of the words used by Bargh et al. (*Sieg*, *Konkurrenz*, *Erfolg*, *Ziel*, *Wetteifer*, *Leistung*, *Meister*). The neutral words in all conditions were *building*, *pants*, *shirt*, *batch*, *lamp*, and *paddock*. For neutral verbs, I used words that indicated an active state but were free of achievement-related content: *move*, *snatch*, *buy*, *shuffle*, *begin*, *carry*, and *build* (*bewegen*, *greifen*, *kaufen*, *schieben*, *beginnen*, *tragen*, *bauen*).

The number of words found in the three experimental word search puzzles served as the dependent measure of the study. Equivalent to Bargh et al. (2001), the embedded words were not listed beside the three puzzles, had a different theme and were hidden in a 10 x 10 letter matrix. Again, the words could appear forwards, backwards, diagonally, up or down. In the three puzzles, ten animals (e.g., *dog*, *cat*, *bird*) ten colors (e.g. *violet*, *red*, *orange*) and ten fruits (e.g., *banana*, *apple*, *cherry*) had to be found. Again, the participants could switch between these tasks and the order of the puzzles was counterbalanced.

Procedure

The experimental procedure was the same as in Experiment 1, with the exception that all participants were tested individually.

Results

Participants found an average of $M = 18.5$ ($SD = 4.22$) out of 30 words. A regression analysis was conducted on the number of words, with achievement content, word class, and the interaction terms of achievement content with word class as predictors (the predictor variables were centered before their interaction term was calculated). The main effect for the achievement content was not reliable, $\beta = 0.11$, $t(69) = 0.86$, $p = .39$. With achievement content priming, the participants found $M = 19.0$ words ($SD = 3.97$), and in the neutral condition $M = 18.1$ ($SD = 4.44$) words (see Figure 1). The main effect for word class and the
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interaction were also not reliable: $\beta = 0.07$, $t(68) = 0.60$, $p = .55$ and $\beta = 0.03$, $t(67) = 0.27$, $p = .79$.

Discussion

In Experiment 2, the participants in the achievement condition found more words, but this effect was again not statistically reliable. The effect of word class and the effect of the interaction between achievement content and word class were also not statistically reliable. It therefore seems that the effect of the Bargh et al. (2001) study was not due to a confounding factor of word class.

In this experiment, the priming manipulations as well as the experimental task more closely resembled the Bargh et al. (2001) study. The experimental task was considerably less difficult than in the first experiment and no achievement motive measure was used, which could have had a priming effect for all participants.

Before considering theoretical reasons for the achievement priming effect, I was still concerned with methodological aspects due to the fact that I could not find as strong a priming effect as in the Bargh et al. studies. I considered it plausible that the achievement of finding words in word search puzzles is strongly determined by individual abilities. Therefore, motivational effects might be present, but the effect on the actual achievement might be too small to be detected. Consequently, in Experiment 3, I measured baseline achievement of finding words prior to the experimental manipulation. Furthermore, I retained to the hypothesis that the achievement motive is a moderator of the priming effect. Additionally to the first experiment, I also measured the fear of failure component of the achievement motive. Moreover, in order to be certain that the measure has no effect on the priming manipulation, I measured the achievement motive at the end of the experiment.

EXPERIMENT 3

Method
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Participants

Sixty-two people participated. One participant was aware of the priming manipulation, three participants were not native German speakers, one participant was unable to find all priming words and one participant had problems understanding the instructions. The analyses are based on the remaining 56 persons (9 men, 47 women). Their mean age was 22.5 years ($SD = 4.52$) and ranged from 19 to 39 years. All participants were students, of whom 25 were studying psychology. The experiment used a 2 (achievement priming: achievement words, neutral words) x 2 (word class: verbs, nouns) between-subject factorial design with the baseline achievement as covariate and the personal variable of achievement motive measured. Participants received either course credit or feedback.

Materials

The explicit achievement motive was measured with the German version (Dahme, Jungnickel, & Rathje, 1993) of the Achievement Motives Scale (AMS; Gjesme & Nygard, 1970). In addition to “hope for success”, the AMS also measures “fear of failure” (Brunstein & Heckhausen, 2008a). The AMS is widely used in Scandinavia and Germany and has proven to be a reliable and valid instrument (e.g. Dahme et al., 1993; Rand, 1987).

As a baseline measure of the ability to find words in the puzzle, the fruit puzzle from Experiment 2 was used.

The priming manipulation was the same as in Experiment 2. The experimental word search puzzles were the same, with the exception that the fruit puzzle was replaced with a puzzle containing trees (e.g., oak, lime, fir).

Procedure

The experimental procedure was the same in as in Experiment 2, with the following components added: Before the priming manipulation, the participants had to find as many words as possible in 3 minutes and 20 seconds in the fruit puzzle. After the debriefing, the
participants filled out the AMS and were thanked for their participation.

Results

Participants found an average of $M = 20.8$ ($SD = 4.04$) out of 30 words. A hierarchical regression analysis was conducted on the number of words with baseline measure, achievement motive (Hope of Success), achievement content, word class, and all interactions of achievement content, word class, and achievement motive as predictors (the predictor variables were centered before their interaction term was calculated). The main effect of the baseline measure was reliable, $\beta = 0.49$, $t(54) = 3.85$, $p < .01$. The main effect of the achievement motive was not significant, $\beta = 0.08$, $t(53) = 0.55$, $p = .59$. The effect of achievement content was also not significant, $\beta = 0.15$, $t(52) = 1.15$, $p = .26$. With achievement content priming, the participants found $M = 21.1$ words ($SD = 3.84$) and in the neutral condition $M = 20.3$ ($SD = 4.14$) words (see Figure 1). The main effect of word class was not reliable either, $\beta = 0.10$, $t(51) = 0.75$, $p = .46$. The interaction of achievement content and word class was not reliable, $\beta = 0.01$, $t(50) = 0.06$, $p = .95$. Moreover, the interaction of the achievement motive with achievement content and word class was also not reliable $\beta = 0.09$, $t(49) = 0.59$, $p = .56$ and $\beta = 0.00$, $t(48) = 0.00$, $p = 1.00$, nor was the three-way interaction, $\beta = -0.23$, $t(47) = -1.52$, $p = .13$.

An analogous regression analysis with Fear of Failure revealed a nonsignificant main effect of Fear of Failure, and no interaction effects with Fear of Failure were found (all $ps > .59$).

Discussion

Once again, I found that with achievement priming subjects found more words, but the effect was weak and again not significant. Furthermore, the expected interaction between the achievement motive and priming condition could not be found. The effect of word class had no reliable effect on the subsequent achievement. Before entering into a general discussion,
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the results of a meta-analysis of the three experiments will be presented. Through the meta-
analysis, I wished to examine whether the small priming effect found in all three experiments
can be considered as reliable when the data are pooled. I also tested for effects of age and
gender. I had no expectations about the main effects of these variables and did not expect
them to moderate the priming effect.

META-ANALYSIS OF EXPERIMENTS 1-3

I standardized the number of words within each experiment and analyzed the effect of
the priming content with all participants from the three experiments pooled in one analysis.
The standardization of the number of words is necessary to avoid the creation of spurious
correlations due to differences in the mean number of words in the three experiments. As
Bravata and Olkin (2001) outlined, simple pooling could be potentially problematic beyond
the differences in the mean number of words. In our sample, however, pooling does not pose
a problem. In all experiments, the effect of achievement priming was in the same direction,
and the number of participants is almost equal in each experiment.

The number of words found correlated with priming at $r = .13 (p = .08)$. Taking into
account that the hypothesis postulated a superior achievement of priming, the one-tailed
probability ($p_{one-tailed} = .04$) indicates a statistically reliable priming effect. In addition, a
regression analysis on the number of words, with priming content, age, gender, and their
interactions as predictors was conducted. The effect of achievement content was also
marginally significant in the regression analysis, $\beta = 0.12, t(192) = 1.74, p = .08$. However,
one again, the one-tailed probability ($p_{one-tailed} = .04$) indicates a significant priming effect
when gender and age are controlled for. With achievement content priming, the participants
found $M = 0.13$ words ($SD = 0.97$), and in the neutral condition $M = -0.13$ ($SD = 1.01$) words.
The effect of gender was reliable, $\beta = -.18, t(194) = -2.49, p = .01$, indicating that women
found more words than men. The effect of age was also reliable, $\beta = -.17, t(193) = -2.13, p =$

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.03, indicating that younger participants found more words than older ones.1 The interaction of age and gender was not significant; $\beta = 0.00$, $t(191) = 0.03$, $p = .98$. All interactions with gender, age and priming were also not significant, indicating that the priming effect holds irrespective of age and gender ($ps > .11$).

GENERAL DISCUSSION

Bargh (1990) proposed that goals can be activated unconsciously and therefore direct goal-relevant behavior in a similar manner to consciously set goals. A great body of priming experiments supports this assumption. For the achievement goals, Bargh et al. (2001) found a strong priming effect, all the more so considering the small intervention of the achievement priming manipulation. In the three experiments conducted here, I tried to replicate the achievement goal priming effect in order to study potential moderators of the achievement goal priming effect.

In the light of these results, it must be concluded that I was unable to replicate the Bargh et al. (2001) findings of a medium to strong achievement priming effect. However, I found a small effect in all three experiments, and when considering the three experiments together in a meta-analysis, the priming effect is statistically reliable. The magnitude of the effect was also similar to that in an online experiment of the same paradigm conducted by Engeser, Rheinberg, and Wendland (2006). Other recent studies (Eitam, Hassin, & Schul, 2008; Oikawa, 2004; Stajkovic et al., 2006 - discussed below) also showed reliable priming for achievement goals. Therefore, I feel confident in stating that our small priming effect reflects a fundamental aspect of human cognition. I will return below to the discussion of a small priming effect in our study. First, however, I will discuss the results regarding the word class and the achievement motive. Neither variable moderated priming.

In Experiments 2 and 3, the alternative explanation of word class - that the achievement priming was due to the use of verbs for achievement priming and nouns for the neutral
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condition - found no support. No reliable priming effect of word class was found (see also Engeser et al., 2006). Thus I was able to rule out this alternative explanation. Nevertheless, future research should possibly take more care when selecting the achievement goal priming words. Some priming words refer to the action to reach a goal and some to the state of goal attainment. For example, the words strive and compete used by Bargh, et al. (2001), Oikawa (2004), Stajkovic et al. (2006) and in our experiments point to the process of attaining a goal, while the words win and attain refer more to the end state (see also Eitam et al., 2008 for quite similar words). Ascertaining whether one or both aspects are related to the priming effect could provide insights into fundamental principles of achievement goal priming.

The hypothesis that the achievement goal priming should be stronger for individuals high in the explicit achievement motive and lower or absent for individuals low in achievement motive was not supported. My rationale was that the achievement motive represents the “goal of doing well”, which would be activated by the priming manipulation. One possible reason could be that the explicit achievement motive may not be relevant when an explicit achievement goal is given. Bargh et al. (2001) and the current studies set an explicit goal in instructing the subjects to find as many words as possible for the word search puzzle measuring the priming effect. Nearly all subjects most likely adopted the explicit goal irrespective of their achievement motive and therefore no motive effects were found.

Stajkovic et al. (2006) experimentally manipulated explicit achievement goals. For an easy goal, they found no achievement goal priming effect. In the “do your best” and in the difficult goal conditions, priming effects of achievement words enhanced performance. This indicates that the “goal of doing well” emerging from the situation rather than being a personal characteristic represented by the explicit achievement motive. Somewhat contrary to Stajkovic et al., Oikawa (2004) showed that the priming effect was only found when the experimental task was introduced as a filler task. This would suggest that no explicit
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achievement goal was given corresponding to the “goal of doing well”. Possibly, the priming effect here is due to subjects being high in the explicit achievement motive. The results of Oikawa, on the other hand, also suggested that when an explicit achievement goal was given, no priming effect was found. This does not fit with the results of the current study and the other studies of achievement priming mentioned thus far, as in all studies an explicit achievement goal was given. Further studies should therefore examine the interplay of achievement priming and explicit goals more carefully. It might also be the case that when no explicit goal is given, the explicit achievement motive is of importance. When studying explicit and implicit motives, researchers should tackle a limitation of our experiments by measuring the motive completely separately from the priming experiment. This would prevent any possible influence of the measure and the experimental manipulation.

Looking at the achievement motivational research, it could also be argued that the implicit motives rather than explicit motives are activated (Brunstein & Heckhausen, 2008b). Explicit motives are activated by conscious recognition and possibly not by the format of the priming stimuli, as I argued in the introduction. The recent study by Eitam et al. (2008) also suggests that the implicit motive is relevant in priming. They found that nonconscious goal pursuit fosters implicit learning and this parallels a finding regarding implicit motive effects by Schultheiss et al. (2005; see also Schultheiss, Pang, Torges, Wirth, & Treynor, 2005). For persons with a high implicit power motive dominating in a contest, Schultheiss and others found superior implicit learning. If this holds also for the achievement domain, the implicit achievement motive may influence implicit learning processes in a similar way to unconscious achievement goals in the Eitam et al. (2008) study.

Returning to the much smaller priming effect found in this study compared to that of Bargh et al. (2001), one possible explanation could be that small discrepancies in experimental procedure might have reduced the priming effect. Moreover, my samples were
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more heterogeneous than that of Bargh et al. (2001), which generally leads to smaller effects. A strong priming effect might therefore only be found in specific situations, and the Bargh et al. (2001) studies might point to how strong possible priming effects could be.

Besides the more heterogeneous sample, general population differences might also account for the different results. Pang and Schultheiss (2005) found that in a US-American sample, the implicit achievement motive was higher compared to a German sample, and I argued above that the implicit motives might amplify the priming effect, with the US sample having a higher implicit achievement motive. On the other hand, the difference in the population means between the US and Germany is not sufficiently high to completely explain the difference.

The translation of words into German constitutes a further potential reason why the achievement priming effect was small. The translation does not necessarily transport the relevant semantic connotation of the original English words. Closely related to this, it might be the case that in our German sample, different words activate the achievement goals. This would mean that the priming of achievement goals might be the same, but that other words would have to be used. This could easily be tested by comparing different words experimentally (see above for the comparison of achievement words pointing to action and states) or by comparing other priming words with the words used in these experiments.

A cross-cultural comparison of achievement goals with other goals would be highly interesting and would emphasize the cross-cultural prevalence of goals. Such a comparison would not be easy to realize, because as discussed in the last paragraph, the translation of the same words might have differing powers to prime a goal irrespective of the actual prevalence of a goal. Nevertheless, using the translated words of various goals in different culture would at least provide reasonable indications. To ascertain the prevalence of goals in a particular culture, it would clearly be helpful to gain a better understanding of what represents the goal
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that is being primed (“goal of doing well”). As I questioned above, it might be given by the experimental situation or might already be present in the person. I tested the explicit achievement motive and could not find support for such a person-based goal in this respect. Whether the implicit achievement motive might represent this person-based goal was discussed above. Here, cross-cultural differences in the implicit achievement motive were found and provided reasons as to why the priming of achievement goals is stronger for a US-American than for the German sample, as in the current experiments. Differences with regard to the achievement motives between these two countries (Pang & Schultheiss, 2005) were discussed above. In contrast to the weaker achievement motive in Germany, the stronger implicit power motivation found by Pang and Schultheiss suggest a stronger priming effect for power goals in Germany.

My explanations of the differences regarding the strength of the priming are tentative. Consequently, researchers should report small or even null effects for achievement priming and look for potential moderators. It would also be of particular interest to show the achievement priming effect using more than one paradigm. Most studies rely on semantic priming procedures, assuming that presenting synonyms of the goal activates the semantic representation of that goal. In criticism of this, Nelissen, Dijker and DeVries (2005) primed goals (Personal Safety and Cooperation) with opportunities for achieving some desired outcome and through discrepancies from a desired state. Although the results did not support the assumed priming effect in their study, this could represent an alternative way of understanding the nonconscious activation of goals.
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Figure 1. Number of Words Found for Neutral and Achievement Priming Conditions in Experiments 1, 2, and 3.
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Correspondence concerning this article should be addressed to Stefan Engeser, Technische Universität München, Lehrstuhl für Psychologie, Lothstr. 17, 80336 München, Germany. Electronic mail may be sent via Internet to engeser@wi.tum.de. Tel: 0049 (0)89 289 24204, Fax: 0049 (0)89 289 24202
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1 In each experiment, the effect of gender and age is in the same direction as for the pooled data.