

Available online at www.sciencedirect.com



Journal of Experimental Social Psychology

Journal of Experimental Social Psychology 44 (2008) 1144-1150

www.elsevier.com/locate/jesp

Accessibility as input: The use of construct accessibility as information to guide behavior

Valerie E. Jefferis, Russell H. Fazio*

Department of Psychology, Ohio State University, 1835 Neil Avenue, Columbus, OH 43210-1287, USA

Received 8 June 2007; revised 1 February 2008 Available online 13 February 2008

Abstract

Priming typically increases behavioral enactments of primed constructs. The current work explored a novel mechanism for the behavioral effects of priming, termed the "accessibility as input" account. In two experiments, participants were nonconsciously primed and then completed anagrams until they judged themselves to have reached a particular state. Two different states, or stop rules, were specified, and were matched to the primed constructs such that the combination either implied that the state had been met (e.g., "slow" prime and "tired" stop rule) or had not been met (e.g., "fast" prime and "tired" stop rule). The priming and stop rule manipulations interacted to determine persistence on the anagram task. The results demonstrate that the heightened accessibility resulting from priming can be used as information about one's current state in relation to situational requirements and, hence, can produce varying, contextuallydependent behavior.

© 2008 Elsevier Inc. All rights reserved.

Keywords: Priming; Accessibility

Introduction

Different situations call for different behaviors. Behavior that is perfectly acceptable in one setting might be entirely inappropriate in another. At a party, for example, feeling relaxed and telling jokes are appropriate responses that convey one's friendliness. In this situation, the sense that one is interacting in a casual manner would indicate that one is behaving appropriately and should continue with the same demeanor. During a job interview, however, people usually strive to come across more professionally. The same casual behaviors are inappropriate in this situation, and so the perception of one's own casual demeanor in this setting should ideally prompt the corrective action of adopting a more formal interaction style. In these two contexts, the significance of "casual behavior" differs and thus would be expected to have different implications for subsequent behavior. In the present work, we focus on the role that accessible constructs play in this perception of one's current behavior and argue that the implications of such accessibility for future behavior depend on the significance of the accessible construct within the situational context.

Construct accessibility has been researched extensively in many studies employing priming procedures. Priming manipulations are designed to increase the accessibility of mental representations in an unobtrusive manner, so that participants are unaware of both the purpose of the manipulation as well as the effects that it might have on later judgments and behavior (Bargh & Chartrand, 2000). Heightened accessibility of a construct can have any number of consequences depending upon what tasks are subsequently encountered. The current work focuses on the potential behavioral effects of primed constructs. We begin by reviewing mechanisms that have been proposed to account for these effects and then propose what we believe to be a novel way in which the heightened accessibility of a construct can influence overt behavior.

^{*} Corresponding author. Fax: +1 614 688 5414.

E-mail addresses: fazio.11@osu.edu, fazio@psy.ohio-state.edu (R.H. Fazio).

^{0022-1031/\$ -} see front matter 0 2008 Elsevier Inc. All rights reserved. doi:10.1016/j.jesp.2008.02.002

Direct effects of construct accessibility

In what is perhaps the most well-known demonstration of priming's behavioral effects, Bargh, Chen, and Burrows (1996) found that priming the elderly stereotype significantly slowed participants' walking speed. Bargh et al. argue that these and related findings demonstrate automatic social behavior that is "unmediated by conscious perceptual or judgmental processes" (p. 231). They instead propose a probabilistic mechanism rooted in James' (1890) principle of ideomotor action, termed the perceptionbehavior link (Dijksterhuis & Bargh, 2001). These two notions share a common assumption that activation of a construct, be it the result of internal thought or perception of the external environment, makes that construct more likely to be enacted. The conceptualization of overlapping perceptual and behavioral systems might be considered the most direct route from priming to behavior, as it posits no intervening processes.

However, a direct perception-behavior link may fail to produce corresponding behavior when simultaneously accessible mental representations interfere. Macrae and Johnston (1998) nonconsciously primed participants with "helping" and then presented an opportunity to act out the accessible construct by helping an experimenter pick up pens she had dropped. Priming did increase helping under control circumstances, but this effect was eliminated when the dropped pens were leaky or when the experiment was running late. As Macrae and Johnston (1998) note, the findings indicate that the perception-behavior link is limited by a system that censors the performance of potentially costly behaviors. In this case, situational impediments produced competing concerns that inhibited the expression of the behavioral tendency promoted by the primed construct.

Other evidence indicating potential limitations of the perception-behavior link comes from work by Cesario. Plaks, and Higgins (2006). As in Bargh et al.'s (1996) experiments, constructs were made accessible indirectly, by priming social categories such as gay men and the elderly. Attitudes toward the social categories were found to moderate the effect of construct accessibility. For example, in the case of the elderly prime, participants who held positive attitudes toward this group did indeed walk more slowly, as a direct-effect account would predict. However, an opposite effect emerged for those participants who held negative attitudes toward the elderly. These individuals instead walked more quickly, as if preparing for a potential encounter by attempting to distance themselves from the disliked other. Like Macrae and Johnston's (1998) findings, these results suggest that the production of even simple behaviors involves multiple mental processes that can moderate the influence of the primed construct.

Indirect effects of construct accessibility

Priming can also impact behavior through indirect routes. Accessible constructs can affect any number of judgments depending upon what information is subsequently encountered and what tasks are undertaken. The person perception literature clearly demonstrates that priming affects impression formation (Higgins, Rholes, & Jones, 1977; Srull & Wyer, 1979). As would be expected, these judgments in turn guide behavior. Herr (1986) primed participants with hostile exemplars, leading to more hostile impressions of an upcoming game partner and corresponding expectations of more competitive behavior by this person. In response, participants themselves performed more competitively during a subsequent prisoner's dilemma task. In this case, priming impacted behavior through an indirect route mediated by another judgment.

Like judgments of people, judgments of situations can be affected by construct accessibility. Kay and Ross (2003) found effects of priming on construals of a game situation. Priming competition led participants to view an upcoming game as more competitive compared to when cooperation was primed, and these different construals were reflected in the behavioral inclinations that participants reported. Similarly, Higgins and Chaires (1980) found priming to influence construals of objects within the environment. In this work, participants were exposed to phrases referring to pairs of objects using either an undifferentiated form (e.g., carton of eggs) or a differentiated form (e.g., carton and eggs), highlighting different overarching mindsets regarding the nature of the connection between objects. Exposure to the differentiated construction primed participants to see the objects as independent of each other, so that they were more likely to view a box of tacks as separate objects with potentially distinct uses. This in turn helped participants reach the correct solution on Duncker's (1945) candle problem, which requires construing the box as something other than a container for the tacks.

Thus, priming can influence behavior indirectly through its effect on judgmental processes, including construal of interaction partners (Herr, 1986), the situational context (Kay & Ross, 2003), and the objects available in the environment (Higgins & Chaires, 1980). In addition, priming may directly activate behavioral tendencies, although any such direct impact on behavior may be limited by situational constraints (Macrae & Johnston, 1998) or even compatibility with one's attitudes (Cesario et al., 2006).

Accessibility of constructs can be used as information

In the current work, we sought to demonstrate a heretofore unexamined mechanism by which priming can influence behavior. We argue that heightened accessibility of a given construct does not necessarily have a fixed direct or indirect effect on behavior. Instead, the behavioral implications of a construct's accessibility are themselves influenced by the surrounding situational context. It is the product of this accessibility-within-situation assessment that then determines how behavior should be modified to meet the demands of the situation. Before presenting the logic of our argument, it is useful to consider the role that context has been shown to play in other domains. Schwarz's (1990) notion of "feelings as information" and Martin's (2000) "mood as input" account both propose that what an affective state signals depends on the surrounding situational context. As a result the same affective response can have different motivational consequences in different contexts. Sadness is generally regarded as a negative state that indicates a problem with one's current circumstances and a need for compensatory action. During some movies, however, the experience of sadness is called for and the experience indicates that the movie is engaging, not problematic.

In a similar way, context also can moderate the interpretation of one's own bodily responses. Tamir, Robinson, Clore, Martin, and Whitaker (2004) induced brow (vs. cheek) tension while participants made either a difficult decision, in which the options were very similar, or an easy decision, in which one of the options was clearly better. When making an easy decision, brow tension led to less decisive judgments, as indicated by a smaller difference between ratings of the two options. Brow (vs. cheek) tension had the opposite effect when it accompanied a difficult decision. In this case, the result was more polarized judgments. The researchers argue that brow tension while confronting a difficult decision signaled that one was working to accommodate the demands of the task and, hence, should have confidence in the ultimate judgment. During an easy judgment, however, brow tension signaled unexpected difficulty and, hence, reduced confidence. The findings indicate that, just as is the case for affective states, the implications of bodily states are interpreted in context.

In the current research, we sought to demonstrate that the signal value of construct accessibility also is subject to this type of interpretative process. The research tests the hypothesis that context plays a pivotal role in determining the meaning, and hence the subsequent behavioral implications, of accessible constructs. The paradigm we designed was modeled after the "stop rule" experiments that have been used to illustrate how moods can serve as information (Hirt, McDonald, Levine, Melton, & Martin, 1999; Martin, Ward, Achee, & Wyer, 1993). In these experiments, participants are provided a criterion by which to decide when to stop working on a task. For example, participants in Martin et al.'s experiment were instructed to stop gathering information about a target either when they "had enough information" or when they "no longer enjoyed the task." Under the "had enough" instructions, participants placed in a positive mood stopped sooner than those in a negative mood, presumably because "having enough information" suggests the need for a positive affective state. On the other hand, "no longer enjoying the task" implies negativity, which led those in the negative mood condition to stop sooner. Mood did not have a main effect on persistence, but instead affected behavior as a function of what the specific mood state signaled in the given task context.

The present experiments were modeled after this stop rule paradigm. Construct accessibility was first manipulated with a priming procedure, followed by instructions to work on a task until a particular state had been reached. These states served as the contextual variable that could interact with the accessible constructs to indicate that the appropriate point at which to stop either had or had not been reached. In this sense, the role of accessibility is as input to a decision process. When the accessible construct implies having met the stop rule criterion, the task will be terminated. However, the same accessible construct may imply that a different stop rule criterion has not vet been achieved. Under this interpretational frame, construct accessibility will lead to continued task persistence. We expect prime-induced accessibility to be interpreted with reference to the demands of the task, leading the same prime to produce opposite behavioral effects.

Experiment 1

The first experiment utilized a subliminal priming procedure. Participants were primed with "slow" or "fast" and then instructed to perform an anagram task until they were "tired" or until they had "mastered the task." In the context of a "tired" stop rule, accessibility of "slow" implies having satisfied the stop rule more than does "fast." Under a "master" stop rule, it is accessibility of "fast" (more so than "slow") that signals an appropriate point to stop. Hence, our conceptual reasoning predicts that the priming and stop rule manipulations will interact in determining task persistence.

Method

Participants

One hundred and sixteen introductory psychology students were randomly assigned to a 2 (stop rule: master or tired) \times 3 (prime: slow, neutral, fast) design.

Procedure

The first task, ostensibly a test of spatial location ability, was a subliminal priming procedure (Bargh & Chartrand, 2000). Participants were instructed to fixate on the asterisk in the center of the computer screen. They were told that they would see brief flashes and should press the right or left arrow key to indicate the side of the screen on which the flash had appeared. The flashes were prime words presented parafoveally for 80 ms and immediately masked by a string of consonants for 60 ms. Participants were randomly assigned to "fast", "slow", or "no-prime" conditions. The primes in the fast condition were *fast*, *quick*, rush, and rapid. In the slow condition, the words were slow, *delay*, *late*, and *crawl*. Each item was presented 24 times, for a total of 96 trials. In the neutral prime condition, scrambled versions of the fast and slow prime words were presented (e.g., olsw in place of slow). Trials were separated by a random 2–7 s delay.

Participants then read instructions for the upcoming anagram task that directed them to terminate the task when they felt the appropriate point had been reached. Participants read a description of either a tired or a master stop rule to use as a basis for this decision. In the tired stop rule condition, the instructions read:

"We are asking you to complete this task today so that we may create a version for use in experiments in the future. We're testing out a huge number of words, and there is no way that you will be able to do all of them today. Instead, we would like you to do this task only until you're tired of it. After each item you will be asked to indicate whether you would like to go to the next anagram item or would like to go on to the next portion of the experiment. When you are tired of this task, you should decide to go on to the next portion of the experiment."

The instructions in the master stop rule condition read:

"The first set of items is just practice, and then later in the experiment we will have you do a real version of the anagrams that we will score. We're not sure how many practice items people will need, so what we want you to do is to do practice items until you feel like you have mastered the task and gotten good at it. After each item you will be asked to indicate whether you would like to go to the next practice anagram item or would like to go on to the next portion of the experiment. When you feel like you have mastered the anagram task, you should decide to go on to the next portion of the experiment."

The anagram task, adapted from Trope and Pomerantz (1998), entailed rearranging all the letters in a word to make one new word. After each item, participants were prompted to choose whether they wanted to continue or quit the anagram task. In the tired stop rule condition, the options given were "go to the next anagram item" or "I am tired of the anagram task; move to the next portion of the experiment." In the master stop rule condition, the options were "go to the next anagram item" or "I have mastered the anagram task; move to the next portion of the experiment." A maximum of 46 anagrams of variable difficulty were presented.

To check the possibility that any effects were influenced by mood, participants then completed the Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988) and the Affect–Arousal Scale (Salovey & Birnbaum, 1989). This was followed by questions to check for awareness of the prime words and suspicion about the connection between the priming procedure and the anagram task (no participants were excluded on this basis).

Results and discussion

Stop rule usage

We first sought evidence that the stop rules communicated different appropriate points to terminate the anagram task. Compared to the tired stop rule, the master stop rule calls for a correct answer on the very last item. Indeed, 51 of the 58 participants assigned to the master stop rule answered their last item correctly, whereas only 32 of the 58 participants given the tired stop rule did so, $\chi^2 = 15.29$, p < .01.

We also reasoned that appropriate use of the stop rules would lead to a difference in the amount of time spent on the very last (but not the very first) item, as it is upon finding themselves taking a relatively long time to solve an anagram that participants in the tired stop rule condition should consider stopping. Because the distribution was heavily skewed, the number of seconds spent on each anagram was first subjected to a square-root transformation. These scores were then entered into a 2 (stop rule) \times 3 $(prime) \times 2$ (item position: first or last) ANOVA. This analysis revealed main effects of stop rule, F(1, 110) =12.89, p < .01, $\eta_{\rm P}^2 = .11$ and item position, F(1, 110) =7.37, p < .01, $\eta_{\rm P}^2 = .06$, qualified by a significant interaction between stop rule and item position, F(1, 110) = 10.91, $p < .01, \eta_{\rm P}^2 = .09$. No other effects reached conventional levels of significance. Means are presented in Table 1. Further analyses revealed no differences in time spent on the first anagram as a function of stop rule, t < 1, but a significant effect of stop rule on the last item, t(114) = 4.10, p < .01, d = .76. Compared to the master stop rule condition, participants given the tired stop rule spent significantly longer on their last item, indicating correct use of the stop rules. That is, participants assigned to the tired stop rule condition were more likely to stop in response to the experience of working on an item for a relatively long time.

Task persistence

Table 1

Of primary interest for our argument was the total amount of time that participants spent doing anagrams. Means are presented in Table 2. Overall, participants given the master stop rule quit much sooner (M = 45.3 s, SD = 40.4) than those given the tired stop rule (M = 303.9 s, SD = 184.1), t(114) = 10.45, p < .01, d = 1.94. Because the standard deviations in the two conditions differed so markedly, time spent on the anagram task was standardized within each stop rule condition before submitting the scores to a 2 (stop rule: master or tired) $\times 3$ (prime: slow, neutral, fast) ANOVA. As predicted, this analysis yielded a significant prime \times stop rule interaction, F(2,110) = 3.90, p < .03, $\eta_P^2 = .07$. Within the tired stop

Mean time spent (in seconds) on the first and last anagrams in Experiment

	First item	Last item
Master stop rule	8.84	8.33
Tired stop rule	9.43	15.71

Note: Means were calculated following a square-root transformation of the data. The means displayed in the table have been re-transformed back to the original metric of seconds.

Table 2 Raw total time spent on the anagram task (in seconds) by prime and stop rule

	Slow prime	No prime	Fast prime
Master stop rule	57	41	38
Tired stop rule	229	321	361

rule condition, prime had a significant linear effect, F(1,110) = 5.06, p < .03, $\eta_P^2 = .12$. Those primed with "slow" spent less time on the anagram task than those primed with "fast," indicating that accessibility of slowness cued participants that they had reached the state implied by the tired stop rule. Although not statistically significant, the linear effect within the master stop rule condition was in the predicted direction, opposite to what was observed in the tired stop rule condition, F(1,110) = 2.36, p < .13, $\eta_P^2 = .06$. Those primed with "fast" tended to spend less time on the task than those primed with "slow".¹

This interactive effect of prime and stop rule was evident despite no direct effect of prime on the speed with which any given anagram was attempted. As noted earlier, the time spent on the first and on the last anagram was not affected by the priming manipulation. Moreover, when we created an overall index of per-anagram speed, by averaging the seconds (square-root transformed) spent on each item, we again found no effect of the priming manipulation, F < 1.

Scores on the PANAS questionnaire were computed by subtracting the sum of the negative items from the sum of the positive. Responses to the affect and arousal items of the Affect–Arousal scale were separately summed. PANAS scores, affect, and arousal were each entered into a prime × stop rule ANOVA. No significant effects were found, Fs < 1.

These findings demonstrate that priming interacts with context when influencing behavior. Accessibility of "slow," compared to "fast," was more indicative of an appropriate time to stop under the tired stop rule. The relative effect of the primes reversed under the master stop rule. Importantly, the priming manipulation did not directly influence the speed with which the anagrams were answered. This null effect runs counter to an alternative explanation that might have been considered plausible on an a priori basis—the possibility that the primes would directly influence participants' behavior and that subsequent self-observations would then provide information as to whether they had satisfied the stop rule criteria. Instead, these results indicate that participants used the accessibility of the constructs to inform them about their current state. In other words, priming influenced behavior by serving as input for the decision that participants were asked to make.

Experiment 2

The second experiment was intended as a conceptual replication of Experiment 1. Context was again manipulated by tired and master stop rules. Rather than directly priming relevant constructs, as in Experiment 1, accessibility of "slow" was heightened indirectly by priming the elderly stereotype. Relative to a no-prime control condition, participants primed with the elderly were expected to stop working sooner when being guided by a tired stop rule, but relatively later when governed by a master stop rule. Once again, the critical prediction is for an interaction between priming and stop rule.

Method

Participants

One hundred eight introductory psychology students were randomly assigned to conditions within a 2 (stop rule: master or tired) \times 2 (prime: elderly or no-prime) design.

Procedure

Participants first completed a scrambled-sentence task modeled after that used by Bargh et al. (1996). Twenty sets of five words were presented, and participants were instructed to rearrange four of these five words to make a grammatically correct sentence. Participants were randomly assigned to either the "elderly" or the "no-prime" condition. In the elderly condition, the sets included words related to the stereotype of elderly people (e.g., *bingo*, *grey*, *conservative*, *worried*, *Florida*, *old*), while in the no-prime condition these words were replaced by neutral, non-stereotypic words (e.g., *cards*, *blue*, *moderate*, *calling*, *Georgia*, *dress*).

Immediately following the priming procedure, participants completed an anagram task identical to that used in Study 1. Participants were again randomly assigned to either the "tired" or "master" stop rule. Participants then answered questions designed to assess awareness and suspicion and were debriefed.

Results and discussion

Six participants who were so unengaged in the experiment that they did not complete any anagram items were excluded from analyses, leaving 102 participants in the sample.

Stop rule usage

Initial analyses again focused on whether participants used the stop rules as intended. Of the 52 participants given the master stop rule, 40 completed their last anagram cor-

¹ We chose amount of time working on the anagram task as the measure of anagram persistence rather than number of anagrams attempted because the anagrams varied markedly in difficulty and also because participants obviously differed in their skill at solving the anagrams. Time was therefore considered a more equivalent metric across participants. In Experiment 1, neither the main effects of prime or stop rule nor their interaction were significant in an analysis of the number of anagram items attempted, Fs < 1.2.

rectly, compared to 32 out of 50 given the tired stop rule, $\chi^2 = 2.05$, p < .15. Although this result failed to reach a conventional level of statistical significance, the direction of the effect corresponds to that observed in Experiment 1, suggesting that participants did follow the instructions presented by the stop rule.

The second check on stop rule usage—time spent on the last anagram-yielded statistically stronger results. Time spent on the first and last items were square-root transformed, and these scores were entered into a 2 (stop rule) $\times 2$ (prime) $\times 2$ (item position: first or last) ANOVA. This yielded main effects of stop rule, F(1,98) = 7.87, $p < .01, \eta_{\rm P}^2 = .07$, and item position, F(1,98) = 17.94, $p < .01, \eta_{\rm P}^2 = .16$, and the expected interaction between stop rule and item position, F(1,98) = 5.52, p < .03, $\eta_{\rm P}^2 = .05$. (No other effects approached significance, Fs < 1.) As in Experiment 1, stop rule did not affect time spent on the first item, t(100) = 1.25, p > .20, but did significantly affect time on the last item, t(100) = 2.88, p < .01, d = .57. Means are presented in Table 3, and indicate that participants told to stop when they were tired spent longer on the anagram at which they chose to terminate the task than did participants told to stop when they had mastered the task. These results provide further evidence that the stop rules were interpreted correctly to imply that different experiences warranted terminating the task.

Task persistence

The total amount of time spent doing anagrams again constituted the primary dependent measure. The tired stop rule produced significantly longer persistence (M = 193.7 s, SD = 138.2) than the master stop rule (M = 45.7, SD = 55.7, t(100) = 7.15, p < .01, d = 1.42. The large difference between the standard deviations led us to standardize the scores within each of the stop rule conditions before entering them into a 2 (stop rule) \times 2 (prime) ANOVA. This analysis yielded a significant interaction between stop rule and prime, F(1,98) = 4.94, p < .03, $\eta_P^2 = .05$. The means, which are presented in Table 4, support our contention that the surrounding context fundamentally influences the behavioral implications of primed constructs. The significant interaction indicates that the primes affected behavior in opposite directions in the different stop rule contexts. Among participants given the tired stop rule, those primed with the elderly stereotype stopped doing anagrams marginally sooner than those not primed with

Table 3

Mean time spent (in seconds) on the first and last anagrams in Experiment 2

	First item	Last item
Master stop rule	6.73	8.12
Tired stop rule	7.55	13.32

Note: Means were calculated following a square-root transformation of the data. The means displayed in the table have been re-transformed back to the original metric of seconds.

Table 4

Raw total time spent on the anagram task (in seconds) by prime and stop rule

	Elderly prime	No prime	
Master stop rule	56	35	
Tired stop rule	164	231	

the stereotype, t(48) = 1.75, p < .09, d = .50. In the master stop rule condition, the effect of prime trended in the reverse direction, t(50) = -1.40, p < .17, d = .39. Although neither simple effect reached a conventional level of statistical significance, both effects were in the predicted direction. We might reasonably expect these effects to be weaker than those in Experiment 1, as the construct "slow" in Experiment 2 was made accessible through a relatively more indirect mechanism, by way of the elderly stereotype rather than by priming the construct directly.²

As in Experiment 1, overall speed of anagram performance was assessed by averaging the number of seconds devoted to each item (following a square-root transformation of the times). No direct effect of the priming manipulation was evident, t(100) < 1.

General discussion

The results of two experiments support the notion that the heightened accessibility of mental constructs can be used as information about one's current state. The stop rules directed participants to make specific judgmentswhether they had reached a current state of tiredness or mastery. It is within the context of these stop rules that the overall significance of the primed constructs was assessed. Both experiments yielded the predicted interactive effects of construct accessibility and stop rule. In the first, accessibility of "slow" led to an earlier stop time than accessibility of "fast" when the stop point was defined as when the participant was tired. In a different context, under the master rule, the effect of the prime trended toward a reversal, with accessibility of "fast" leading to a somewhat earlier stop time. Experiment 2 replicated this interactive effect using a supraliminal priming procedure that activated relevant constructs indirectly. Priming the elderly stereotype led to diverging effects in the different stop rule conditions. When participants had been instructed to assess tiredness, the elderly prime facilitated the "tired" conclusion, presumably because of heightened accessibility of the "slow" construct commonly associated with the elderly category. This, in turn, led to less persistence on the anagram task. In contrast, the elderly prime interfered

² The number of anagram items attempted was also examined. Number was first standardized within stop rule condition, and then entered into a prime × stop rule ANOVA. The interaction between prime and stop rule was significant, F(1,98) = 4.12, p < .05, and revealed a pattern similar to the effect on time. Compared to the no-prime condition, those in the elderly prime condition attempted more items in the master condition and fewer items in the tired condition.

with participants' conclusion that the task had been mastered, thus increasing persistence. These findings demonstrate that priming does not have a single invariant effect on behavior, but that the influence instead depends upon the significance of the accessible construct within the particular situation.

Our notion of construct accessibility as input is consistent with the results of other demonstrations of the effects of priming on behavior, including those cited as support for a direct account. Walking speed, for example, is a behavior that under many circumstances should be directed merely by how quickly or slowly one "feels like" walking. These are precisely the circumstances that we assume surrounded participants in Bargh et al.'s (1996) experiment, in which participants walked more slowly after being primed with the elderly stereotype. Because the experiment was supposedly complete at the point when walking speed was measured, it would have been reasonable for participants to accept accessibility of slowness as matching the requirements of the situation and to behave accordingly. However, as a "thought experiment", consider a scenario that calls for a fast walking speed. Imagine that participants had an important engagement scheduled immediately after the experiment that made it necessary for them to hurry. In this case, accessibility of the construct "slow" would indicate inappropriate current behavior. According to our logic and the present findings, the elderly prime would have an opposite effect in such a scenario—that is, accessibility of slow would indicate an inappropriate current state and prompt participants to actually walk more quickly.

In conclusion, the present research illustrates a novel mechanism by which priming can influence behavior. The experienced accessibility of a construct can signal that one is, or is not, meeting current situational demands. It can inform one that the task objectives are being fulfilled, or that corrective action is needed. Like mood, construct accessibility can serve as information.

References

- Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle: A practical guide to priming and automaticity research. In H. Reis & C. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 253–285). New York: Cambridge University Press.
- Bargh, J. A., Chen, M., & Burrows, L. (1996). Automaticity of social behavior: Direct effects of trait construct and stereotype activation on action. *Journal of Personality and Social Psychology*, 71, 230–244.

- Cesario, J., Plaks, J. E., & Higgins, E. T. (2006). Automatic social behavior as motivated preparation to interact. *Journal of Personality* and Social Psychology, 90, 893–910.
- Dijksterhuis, A., & Bargh, J. A. (2001). The perception-behavior expressway: Automatic effects of social perception on social behavior. In M. P. Zanna (Ed.). Advances in experimental social psychology (Vol. 33, pp. 1–40). San Diego: Academic Press.
- Duncker, K. (1945). On problem solving. Psychological Monographs, 58 (Whole No. 270).
- Herr, P. M. (1986). Consequences of priming: Judgment and behavior. Journal of Personality and Social Psychology, 51, 1106-1115.
- Higgins, E. T., & Chaires, M. (1980). Accessibility of interrelational constructs: Implications for stimulus encoding and creativity. *Journal* of Experimental Social Psychology, 16, 348–361.
- Higgins, E. T., Rholes, W. S., & Jones, C. R. (1977). Category accessibility and impression formation. *Journal of Experimental Social Psychology*, 13, 141–154.
- Hirt, E. R., McDonald, H. E., Levine, G. M., Melton, R. J., & Martin, L. L. (1999). One person's enjoyment is another person's boredom: Mood effects on responsiveness to framing. *Personality and Social Psychology Bulletin*, 25, 76–91.
- James, W. (1890). *The principles of psychology*. New York: H. Holt and Company.
- Kay, A. C., & Ross, L. (2003). The perceptual push: The interplay of implicit cues and explicit situational construals on behavioral intentions in the Prisoner's Dilemma. *Journal of Experimental Social Psychology*, 39, 634–643.
- Macrae, C. N., & Johnston, L. (1998). Help, I need somebody: Automatic action and inaction. *Social Cognition*, 16, 400–417.
- Martin, L. L. (2000). Moods do not convey information: Moods in context do. In J. P. Forgas (Ed.), *Feeling and thinking: The role of affect in social cognition* (pp. 153–177). New York: Cambridge University Press.
- Martin, L. L., Ward, D. W., Achee, J. W., & Wyer, R. S. (1993). Mood as input: People have to interpret the motivational implications of their moods. *Journal of Personality and Social Psychology*, 64, 317–326.
- Salovey, P., & Birnbaum, D. (1989). Influence of mood on health-relevant cognitions. Journal of Personality and Social Psychology, 57, 539–551.
- Schwarz, N. (1990). Feelings as information: Informational and motivational functions of affective states. In E. T. Higgins & R. M. Sorrentino (Eds.). *Handbook of motivation and cognition* (Vol. 2, pp. 527–561). New York: Guilford Press.
- Srull, T. K., & Wyer, S. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality and Social Psychology*, 37, 1660–1672.
- Tamir, M., Robinson, M. D., Clore, G. L., Martin, L. L., & Whitaker, D. J. (2004). Are we puppets on a string? The contextual meaning of unconscious expressive cues. *Personality and Social Psychology Bulletin*, 30, 237–249.
- Trope, Y., & Pomerantz, E. M. (1998). Resolving conflicts among selfevaluative motives: Positive experiences as a resource for overcoming defensiveness. *Motivation and Emotion*, 22, 53–72.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063–1070.