Self-Control & Self-Regulation in Social Contexts

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Strategic Control Over the Unhelpful Effects of Primed Social Categories and Goals

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Abstract. Social situations can, at times, have a detrimental influence on behavior (e.g., exposure to supermodels can make people dumb, certain social situations can prompt excessive alcohol consumption). Gaining control over such effects can be difficult because the situational influence often occurs outside conscious awareness. The present research investigates whether forming if-then plans or "implementation intentions" (Gollwitzer, 1999) can help people to strategically prevent unwanted social influences. Two experiments found that priming social categories (e.g., supermodels, Experiment 1) or social goals (e.g., socializing, Experiment 2) can have a detrimental impact on participants' general knowledge (Experiment 1) and mental readiness to drink (Experiment 2), respectively. However, both experiments also showed that forming implementation intentions designed to ensure the effective mobilization of resources (Experiment 1) or to ignore temptation (Experiment 2) prevented social primes from influencing behavior. These findings suggest that if-then planning affords strategic control over unwanted social influences on action.

Keywords: implementation intentions, stereotypes, priming, self-control

Strategic Control of Unconscious Social Influences on Behavior

Control Theory (Carver & Scheier, 1982) suggests that self-regulation is a process of comparing the current rate of goal progress (*input*) against the desired rate of goal progress (*reference value*) and acting on discrepancies as and when they arise (*output*). For example, reducing weekly alcohol consumption requires a comparison between the number of drinks consumed versus intended rate of consumption. If the current rate of drinking exceeds intended consumption then effective self-regulation requires that the person act in a way that will reduce the discrepancy. For example, selecting a soft drink in place of an alcoholic one. However, Control Theory also acknowledges that self-regulation does not occur in a vacuum. In addition to the individuals' efforts, the situation can also have an impact on the rate of goal progress. This impact is termed "*disturbance*" and reflects "forces from outside [that] occasionally impinge on any system" (Carver & Scheier, 1982, p. 112). Although some disturbances may be obvious to the person (e.g., the opportunity to socialize at a friend's birthday party derails one's goal of abstaining from alcohol), in recent years a large body of evidence has developed to suggest that situations can also

have a nonconscious or *automatic* influence on perception and behavior (for a review, see Bargh, 2006).

In a typical experiment investigating automatic influences on behavior, participants are exposed to particular situational cues. Next, the impact of this situational disturbance on either perception or behavior is assessed in an ostensibly unrelated task. For example, Haddock, Macrae, and Fleck (2003) found that listing similarities between four photographs of supermodels led to poorer performance on an ostensibly unrelated general knowledge test compared to listing similarities between four photographs of professors (see also Dijksterhuis & van Knippenberg, 1998). When debriefed, participants reported no awareness of this influence. In this experiment then, the situational cue is a social category (e.g., supermodels) that is associated with particular traits (e.g., lack of intelligence). Priming social categories in this way is thought to cause people to act accordingly because the mental representations of perceptual and behavioral features overlap (referred to as the 'common coding' hypothesis; Hommel, Müsseler, Aschersleben, & Prinz, 2001) leading to an "expressway" between perception and action (Dijksterhuis & Bargh, 2001).

Another way that situational cues can influence behavior is by activating mental representations of goals (Bargh, Gollwitzer, Lee-Chai, Barndollar, & Trötschel, 2001;

Chartrand & Bargh, 1996; Dijksterhuis & Aarts, 2010). For example, Bargh, Raymond, Pryor, and Strack (1995) found that priming power led men with high scores on the Attractiveness of Sexual Aggression Scale (Malamuth, 1989a, 1989b) to rate a female confederate as more attractive than men exposed to neutral primes. The implication is that the situational feature of power activated the goal of having sex among these men, which then influenced how they responded to the confederate. In summary, studies suggest that social situations can activate stereotypes or goals that influence behavior without participants being aware of that influence.

For the most part, the automatic effects of situations on behavior are functional. For example, without having to think about it we lower our voice in the library, exhibit good manners in exclusive restaurants, and so on (Aarts & Dijksterhuis, 2003). However, there are also instances where situational influences are unwanted to the extent that the disturbance increases discrepancies between desired and current (rates of) goal progress. For example, exposure to supermodels can impair performance on intellectual tasks (Dijksterhuis & van Knippenberg, 1998; Haddock et al., 2003), television adverts can prime snack consumption (Harris, Bargh, & Brownell, 2009), and social contexts can lead to excessive alcohol consumption (Sheeran, Aarts, et al., 2005). In short, there are instances where situations prompt undesired actions. Unfortunately, dealing with unhelpful situational influences is likely to be difficult because, as research on priming effects shows, people may not realize the impact that situational cues have on their behavior (Oettingen, Grant, Skinner, Smith, & Gollwitzer, 2006; Parks-Stamm, Oettingen, & Gollwitzer, 2010; Wilson & Brekke, 1984). So how can people deal with these unwanted automatic disturbances to self-regulation?

The present research investigated whether forming implementation intentions (Gollwitzer, 1993, 1999; Gollwitzer & Sheeran, 2006) could help people to control the effects of activating unhelpful social categories or goals. Implementation intentions are specific behavioral plans that spell out both a good opportunity in which to act and a suitable response to that opportunity. The specified opportunity and response are linked together in an if-then format; "If opportunity Y occurs, then I will perform goal-directed response Z!" Considerable evidence suggests that people who form implementation intentions are more likely to achieve their goals than are similarly motivated people who do not form implementation intentions (for a review, see Gollwitzer & Sheeran, 2006). The benefits of if-then planning are not due to increased motivation and/or self-efficacy (Webb & Sheeran, 2008); rather if-then planning renders the specified opportunity more accessible (Aarts, Dijksterhuis, & Midden, 1999; Webb & Sheeran, 2007, 2008) with the consequence that it is swiftly and accurately identified (Parks-Stamm, Gollwitzer, & Oettingen, 2007; Varley, Webb, & Sheeran, 2011; Webb & Sheeran, 2004; Wieber & Sassenberg, 2006). Being able to rapidly identify a good opportunity to act is of particular import if the focal behavior is likely to be subject to situational disturbances because the person has a chance to enact the intended response before the unwanted situational influence can derail responses (for a similar argument in relation to

overcoming habits, see Webb, Sheeran, & Luszczynska, 2009). Forming implementation intentions holds another advantage in this regard – if-then planning forges a strong link between the specified opportunity and the intended response (Aarts & Dijksterhuis, 2000; Webb & Sheeran, 2007, 2008). The consequence is that the person does not need to deliberate about how to act in situ – instead, the intended response can ensue in a relatively automatic fashion; that is, more immediately (Brandstätter, Lengfelder, & Gollwitzer, 2001; Gollwitzer & Brandstätter, 1997), more efficiently (Brandstätter et al., 2001; Lengfelder & Gollwitzer, 2001; Webb & Sheeran, 2003), and with less need for conscious intent (Bayer, Achtziger, Gollwitzer, & Moskowitz, 2009; Sheeran, Webb, & Gollwitzer, 2005).

Gollwitzer, Sheeran, Trötschel, and Webb (2011) provided some preliminary evidence that forming implementation intentions could help to control situational influences on behavior. Across three experiments, participants were primed in ways that could disrupt their performance on a focal task. In Study 1, exposure to exemplars of fast versus slow animals led to predictable effects on participants' reaction times in a subsequent lexical decision task. In Study 2, reading a biography of Mother Teresa (vs. Margaret Thatcher) led participants to be more easily distracted by a request for help. In Study 3, participants who were induced to complete a join-the-dots task quickly drove more recklessly in a subsequent driving simulation than did participants who took their time to complete the join-the-dots task. In each case, however, forming implementation intentions designed to direct performance prevented the prime from influencing behavior. Participants in Study 1 who formed the plan "If the non-word 'avenda' appears then I respond especially quickly!" did not evidence slower responses to this nonword following exposure to fast animals. Participants in Study 2 who formed the plan "If I get distracted, then I will concentrate on the test even more!" were not influenced by exemplar priming. Finally, the driving performance of participants in Study 3 who formed the plan "If I enter a curve then I will slow down, and if I enter a straight road then I will accelerate!" was not compromised by being primed to drive quickly. These findings suggest that forming implementation intentions is a useful strategy for overcoming behavioral priming effects. Furthermore, priming people who exemplify particular goals (namely, prosocial goals) in Study 2 provides preliminary evidence that if-then planning may help people to deal with unwanted social influences. However, exposure to an exemplar is just one example of a social situation that could derail goal striving. Further empirical examination is warranted to investigate whether if-then planning can also enable strategic control of the effects of exposure to unhelpful social categories (e.g., supermodel effects on intellectual performance) or goals (e.g., the goal to socialize may disrupt the goal to curtail alcohol consumption). In keeping with the theme of this topical issue, therefore, the present research focused explicitly on how self-regulation might be shaped by aspects of the social situation; namely, by exposure to members of particular social groups (Study 1) or unobtrusive priming of social goals (Study 2).

Experiment 1: Ensuring That You Stay Smart When Supermodels Prime You Dumb

In Experiment 1, participants were primed with social categories (images of either supermodels or professors) and they either planned or did not plan how to answer general knowledge questions. Performance on a standard test of general knowledge was then measured. We expected to replicate the behavioral priming effects reported by Dijksterhuis and van Knippenberg (1998) and Haddock et al. (2003) among participants who did not engage in if-then planning. That is, we predicted that priming participants with supermodels (rather than professors) would undermine performance on a general knowledge test. However, we predicted that the performance of participants who formed if-then plans would be protected from any disturbance by situational priming effects.

Method

Participants and Design

Sixty undergraduate students (28 female) from a UK University volunteered to take part. The experiment adopted a 2-between (stereotype priming: supermodels vs. professors) by 2-between (implementation intentions: formed vs. not formed) design with the number of correct answers on a general knowledge test as the dependent variable. Participants were randomly allocated to conditions.

Procedure

Participants were tested individually and told that the purpose of the experiment was to investigate the way that people describe pictures. As such, participants were asked to describe two series of pictures separated by a test of general knowledge (ostensibly serving as a filler task). In fact, the first series of pictures was designed to prime a social category and the filler task investigated the impact of this priming on intelligence.

Priming Manipulation

Participants were asked to list six similarities of persons depicted in either four photographs of supermodels or four pictures of professors. Photographs depicted the head and shoulders of each person and were presented on a single side of A4 paper. None of the persons depicted were likely to be known to participants (i.e., we avoided selecting exemplars of either category, such as Claudia Schiffer and Albert Einstein, as this has been shown to produce contrast effects, Dijksterhuis et al., 1998).[1]

General Knowledge Task and Manipulation of Implementation Intentions

The last 13 questions of the information section of the Wechsler Adult Intelligence Scale (WAIS) served as our measure of general knowledge. Participants were told "*As a distraction task please can you answer these general knowledge questions for another experiment; you will have ten minutes to answer as many of the questions as you can.*" Answers were scored according to the WAIS III manual (Wechsler, 1988). Thus, all participants were given the goal to perform well on the knowledge test. One-half of the participants were additionally asked to form an implementation intention to support this goal: "*If I see a difficult question, then I will use all of the knowledge at my disposal to answer it!*" In order to remember their plan, participants were told that they should close their eyes and quietly say their plan back to themselves. Participants were told to repeat this process until they could repeat the plan three times without making a mistake.

Debrief

Following the recommendations of Bargh and Chartrand (2000), funnel debriefing (Chartrand & Bargh, 1996) was used to investigate whether participants had any suspicions about the true nature of the experiment. No participant evidenced any suspicion and so all participants were retained in the final analyses.

Results and Discussion

The dependent variable was how many questions participants answered correctly on the general knowledge test (see Figure 1). A 2-between (stereotype priming: supermodels vs. professors) by 2-between (implementation intentions: formed vs. not formed) ANOVA found no main effects of stereotype priming, $F(1, 56) = 2.53$, *ns*, partial $\eta^2 = .04$, or implementation intentions, $F(1, 56) = 0.42$, *ns*, partial $\eta^2 = .01$. However, the expected interaction between stereotype priming and implementation intentions was significant, $F(1, 56) = 5.27$, $p < .05$, partial $\eta^2 = .09$. Simple main effects revealed a significant effect of stereotype priming among participants who had not formed implementation intentions, $F(1, 28) = 5.47$, $p < .05$, $\eta_p^2 = .16$. Participants who were primed with supermodels answered fewer questions correctly ($M = 55\%$, $SD = 21\%$) than did participants primed with professors ($M = 72\%$, $SD = 19\%$). However, when participants had formed implementation intentions, stereotype activation had no effect on performance,

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[1] This priming procedure (and that used in Study 2) is a form of "supraliminal" priming (Chartrand & Bargh, 2000) to the extent that participants were aware of the priming stimuli, but not of the relation between these stimuli and the dependent variables. Thus, the influence of the social primes on behavior can be considered to have occurred outside of participants' awareness (i.e., to be unconscious) while the priming stimuli themselves were processed at a conscious level.
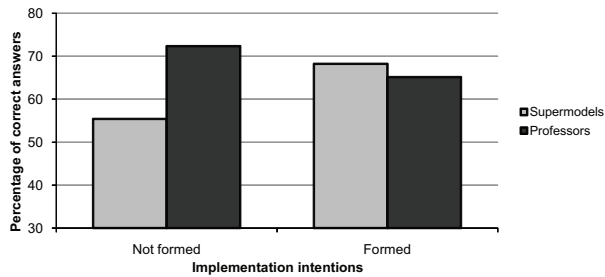
Figure 1. Percentage of general knowledge questions answered correctly as a function of priming and implementation intention formation (Experiment 1).

$F(1, 28) = 0.40$, *ns*, $\eta_p^2 = .01$. Participants who were primed with supermodels, but then formed if-then plans answered the same number of questions correctly ($M = 68\%$, $SD = 14\%$) as participants primed with professors ($M = 65\%$, $SD = 12\%$). Thus, forming implementation intentions geared at promoting intellectual performance was effective in alleviating the disruptive impact of priming supermodels.

Experiment 2: Ensuring That Sociability Does Not Prime Your Drinking

Experiment 2 focused on the other route by which situational cues can influence behavior – by activating mental representations of goals (Bargh et al., 2001; Dijksterhuis & Aarts, 2010). Thus, Experiment 2 sought to provide conceptual support for the findings of Experiment 1 using a different priming procedure (designed to activate the goal to socialize or to study, respectively) and a different behavioral response (mental readiness to drink).

Method

Participants and Design

One hundred seventy-three female undergraduates at two UK universities took part in return for experimental credits. The experiment adopted a 2-between (goal priming: socializing vs. studying) by 2-between (implementation intentions: related vs. unrelated) design. Participants were randomly assigned to conditions.

Procedure

Participants were tested individually and informed that they were going to take part in a verb identification task as part of a study of language. While the experimenter was setting up the computer program, each participant was asked to complete two questionnaires that were ostensibly unrelated to the main experiment. In fact, the first questionnaire contained the manipulation of implementation intentions and

the second was designed to prime the goal of socializing versus studying, respectively.

Implementation Intention Manipulation

Participants were informed that the first questionnaire was a pilot study about how people distract themselves when they find themselves in situations that involve temptation. One-half of the participants were asked to form an implementation intention to prevent them drinking excessive quantities of alcohol (related condition), while the other half were asked to form an implementation intention to prevent them from consuming excessive amounts of snack food (unrelated condition). Participants completed the following sentence: "*As soon as I think about drinking (eating snack food), then I will ignore these thoughts and tell myself to. . .*"

Priming Manipulation

The second questionnaire was introduced as part of a study being carried out by researchers in the Sociology Department, who were supposedly interested in students' life at university. One-half of the participants completed a questionnaire about socializing comprising of five items:

(i) "How important is going out socializing to you?;
(ii) "How many nights will you go out each week?;"
(iii) "On which night(s) will you go out each week?;"
(iv) "On a typical night how many people will you go out with?;" and
(v) "How many new people do you think you will meet in the next week?"

The other half of the participants completed a questionnaire of similar length and design, but this time concerning their studying behavior.

Verb Identification Task

After the manipulation of implementation intentions and situational priming, participants were asked to undertake a verb identification task, ostensibly as part of a study on language. Participants were informed that a row of asterisks would be presented on the screen followed by a word. Their task was to indicate, as quickly and accurately as possible, whether or not the word was a verb by pressing the relevant key on the keyboard. Once participants understood the task and had completed 10 practice trials, they were told to press any key to start the computer program. Participants responded to a block of 72 words: 36 were verbs and 36 were not verbs. The verb *drinking* was presented five times within the 36 verbs. The dependent variable was participants' mental readiness to drink as indexed by their response latency to these five drinking trials.

Debrief

Once participants had completed the verb identification task, they were thanked for taking part and debriefed.
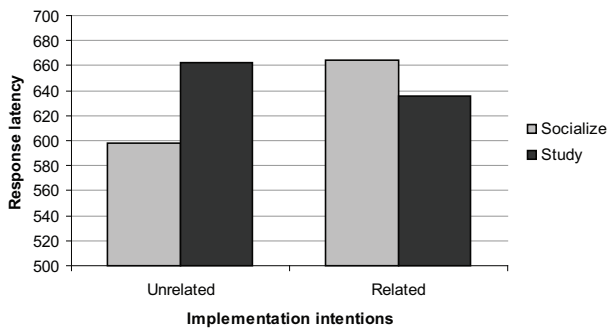
Figure 2. Response latencies (ms) to drinking words as a function of priming and implementation intention formation (Experiment 2).

Funnel debriefing (Chartrand & Bargh, 1996) indicated that nine participants (5%) thought that the questionnaires might be related to the computer task. Following the recommendations of Bargh and Chartrand (2000), these participants were removed from analyses. The computer failed to record data for three further participants, leaving $N = 161$.

Results

A 2-between (goal priming: socializing vs. studying) by 2-between (implementation intentions: related vs. unrelated) ANOVA with response latencies to the drinking trials as the dependent variable (see Figure 2) showed that the main effects of implementation intentions and goal activation were not significant, $Fs(1, 157) = 0.77$ and 0.64, respectively, ns, $\eta_p^2 = 0.01$ and 0.00. However, the expected interaction between implementation intentions and goal activation was significant, $F(1, 157) = 4.06$, $p < .05$, $\eta_p^2 = 0.03$. Simple main effects revealed a significant effect of goal priming among participants who formed unrelated implementation intentions, $F(1, 80) = 4.02$, $p < .05$, $\eta_p^2 = .05$. Participants who had no relevant plan were quicker to respond to drinking-related words ($M = 598$, $SD = 85$) when they were primed to socialize compared to when they were primed to study ($M = 662$, $SD = 179$). Goal priming did not, however, influence responses when participants had formed related implementation intentions, $F(1, 77) = 0.73$, ns, $\eta_p^2 = .01$. Participants who planned to ignore thoughts of drinking responded comparably to the drinking-related words whether they were primed to socialize ($M = 664$, $SD = 162$) or study ($M = 636$, $SD = 124$).

General Discussion

The present research investigated whether forming implementation intentions can help people to strategically control the effects of priming unhelpful social categories and goals on self-regulation. Our hypothesis was that, while such disturbances are often difficult to control because people

lack insight into the nature and impact of these primes, forming implementation intentions might provide a means to regain control because if-then planning permits fast and effortless instigation of wanted responses. In Experiment 1, we found that participants who were primed with the stereotype of supermodels (and did not form implementation intentions) answered less questions correctly on the general knowledge test than did participants primed with professors, even though participants evidenced no awareness of a relation between the tasks. This finding reinforces the idea that exposure to social groups can have an automatic effect on behavior (Dijksterhuis & van Knippenberg, 1998; Haddock et al., 2003). In our experiment, however, the priming manipulation was crossed with an implementation intention manipulation designed to ensure the effective mobilization of resources on the task. As expected, the priming manipulation did not influence performance when participants had formed an implementation intention. These findings support those of Gollwitzer et al. (2011) and, importantly, extend this research to show that forming implementation intentions can also help overcome the unintended effects of exposure to social stereotypes.

Experiment 2 investigated whether forming an implementation intention could overcome the effects of priming a goal that is known to promote alcohol consumption on participants' mental readiness to drink. University students evidenced a greater mental readiness to drink (faster responses to drinking words) when the goal of socializing had been unobtrusively activated than when the goal of studying had been activated. This finding replicates those of Sheeran, Aarts, et al. (2005) and is consistent with the automotive model of goal striving (Bargh et al., 2001), but represents a problem for the individual who wants to prevent any unwanted disturbance to goal striving. The findings of Experiment 2, however, showed that priming the goal to socialize did not influence the responses of participants who planned to put thoughts of drinking out of their mind. Taken together with the findings of Experiment 1 and Gollwitzer et al. (2011), these findings provide clear evidence that if-then planning can permit strategic control over unwanted priming effects on action.

The implication for self-regulation in social contexts is that situations that prime detrimental mental representations (e.g., social categories or goals) do not inevitably disturb goal striving. Instead, their impact depends on whether the relevant goal intention has been furnished by an implementation intention. Research suggests that goal striving under implementation intentions is characterized by (i) swift and effective identification of good opportunities to act (Parks-Stamm et al., 2007; Varley et al., 2011; Webb & Sheeran, 2004; Wieber & Sassenberg, 2006) and (ii) automatic initiation of intended responses (Bayer et al., 2009; Brandstätter et al., 2001; Gollwitzer & Brandstätter, 1997; Lengfelder & Gollwitzer, 2001; Sheeran, Webb, & Gollwitzer, 2005; Webb & Sheeran, 2003). The present research demonstrates that one consequence of such "strategic automaticity" (Gollwitzer & Schaal, 1998) is that goals furnished by implementation intentions are shielded from unwanted social influences. This finding adds to a growing body of literature suggesting that forming implementation intentions

can facilitate effective self-regulation in difficult contexts – e.g., when there are antagonistic habits (Holland, Aarts, & Langendam, 2006; Webb et al., 2009), when opportunities to act are difficult to discern (Bayer et al., 2009; Webb & Sheeran, 2004), when self-interests are to the fore (Trötschel & Gollwitzer, 2007), and so on. The present findings extend this research, however, by focusing on protecting goal striving from the disruptive effects of priming certain social categories (Experiment 1) or goals (Experiment 2).

Ours is not the first research program to suggest a moderator of behavior priming effects. For example, Sassenberg and Moskowitz (2005) showed that activating a "think different" mind-set could prevent stereotype activation following exposure to African-Americans. Similarly, Macrae and Johnson (1998) showed that the presence of inhibitory cues in the environment (in their case, leaking pens) could prevent the characteristic effect of helping primes on behavior (whether the participant helped the experimenter pick up the pens). Implementation intention formation, however, confers an important benefit over these other methods for overcoming behavior priming effects – if-then planning is *strategic* to the extent that the person can decide when and how to plan and is not reliant on external assistance or cues to do so.

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