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Is Planning Good for You? The Differential Impact of Planning on Self-Regulation

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Previous research suggests making plans is generally beneficial for self-control activities such as saving money or dieting. Yet the results of five experiments reveal that planning does not always benefit everyone. Although planning tends to aid subsequent self-control for those who are in good standing with respect to their long-term goal, those who perceive themselves to be in poor goal standing are found to exert less self-control after planning than in the absence of planning. This occurs because considering a concrete plan for goal implementation creates emotional distress for those in poor goal standing, thereby undermining their motivation for self-regulation. Findings of the fifth study suggest that engaging positive self-related thoughts in the relevant domain after planning can prevent any negative consequences of planning on subsequent behavior.

Consumers often strive for goals that entail self-control, such as abstaining from drinking alcohol until the weekend, avoiding unhealthy foods in preparation for bathing suit season, or saving money for retirement. Yet we often cave into the temptation of immediate satisfaction despite wishing we could be more disciplined in pursuing our long-term goal. What can we do to ensure we act in a manner that is goal consistent? Lay theory suggests that planning is one method to help individuals exercise self-control; open any lifestyle magazine, and you are likely to see advice advocating the benefits of planning in domains such as dieting and finance. Similarly, research has found evidence for the positive effects of creating plans on self-control. For example, planning is associated with greater self-control to engage in a positive activity such as exercise (Sniehotta, Scholz, and Schwarzer 2005), medical adherence (Gollwitzer and Oettingen 2007), self-health exams (Luszczynska and Schwarzer 2003), sunscreen use (Jones et al. 2001), and

schoolwork (Gollwitzer and Brandstatter 1997; Greiner and Karoly 1976), as well as to refrain from a negative behavior (Lusardi 2000; Schifter and Ajzen 1985).

Despite this general perception, recent research has begun to show limitations to planning. In some cases, planning is found to have a harmful effect for goal striving (e.g., Adriaanse et al. 2011; Bayuk, Janiszewski, and LeBoeuf 2010; Dalton and Spiller 2012). Joining the recent literature, in this research we further probe the effect of planning by examining the role played by two basic variables in goal pursuit, namely, goal distance and concrete implementation plans. We show that whereas planning of concrete implementations may aid self-control when the person is close to a goal, when the person is far from a goal, such planning might ironically backfire and lead to less self-control than in the absence of making a plan. We further delve into the mechanism underlying this negative effect of planning. We posit that the recognition that the goal is far away, combined with a concrete view of implementation toward the goal, can create a feeling of distress for the person, consequently discouraging him/her from pursuing the goal. This research, therefore, highlights the potential emotional consequences of planning that can significantly affect the efficacy of planning for self-control. In the next section, we develop our theory for the role of an implementation plan and goal distance in the effect of planning.

THEORETICAL BACKGROUND

Effect of Planning

Planning has been shown to aid self-control via multiple mechanisms. First, from a problem-solving perspective, plan-

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ning can allow the person to be more organized and better prepared before facing a task (Hayes-Roth and Hayes-Roth 1979; Kreitler and Kreitler 1987). Second, from a goal pursuit perspective, a basic effect of planning is to prime and remind the person of his/her goal (Brewer and Dupree 1983). Further, because planning involves premeditation, it allows the person to consider the decision situation and set behavioral guidelines when the visceral impact of the immediate gratification is not in full force (Laibson 1997; Laibson, Repetto, and Tobacman 1998; Thaler and Benartzi 2004). More germane to this research, planning can help translate an abstract goal into a specific set of actions that will pave the way to the goal.

One framework in this regard is that of deliberative versus implementive mind-sets (Gollwitzer, Heckhausen, and Steller 1990). Under this framework, planning can encourage the actor to turn from deliberations of the goal value to contemplations about specific steps to achieve the goal. In particular, one special type of plan involves implementation intentions, which are stated in an “if-then” form, that specify when, where, and how one is to strive for a goal (Gollwitzer 1993, 1996, 1999). Implementation intentions have been found to facilitate goal pursuit by improving a person’s ability to detect good opportunities to perform the desired action (Aarts and Dijksterhuis 2000; Webb and Sheeran 2004). The planned goal-consistent behavior can even occur automatically upon encountering the relevant situation (Gollwitzer 1999). Outside of the implementation intentions framework, research shows that even if plans for action are not structured exactly in an if-then form, simply planning for specific behaviors might aid self-control. For example, planning allows individuals to explicitly state their positive behavioral intentions, increasing the accessibility of that behavior (Levav and Fitzsimons 2006). Planning can also create concrete standards for action, making those actions more likely (Sniehotta et al. 2005). Thus in general, prior research suggests that planning can facilitate self-regulation by turning an abstract goal into more concrete implementation steps toward a goal, making such actions more accessible and easier to self-monitor.

Negative Effects of Planning on Self-Regulation

Despite the preponderance of research demonstrating the positive effect of planning on self-regulation, recent research has begun to uncover conditions in which planning can have a negative impact. A number of mechanisms are involved in such negative effects, including specific plan formats, in-plan versus out-of-plan actions, the individual’s current construal level, and the number of goals considered. For example, recent studies showed that when implementation intentions are stated in an “if, then not to do” structure, the behavior to be avoided ironically becomes more likely, due to its greater accessibility (Adriaanse et al. 2011). Other research found that concrete planning decreased one’s ability to act on goal-consistent, out-of-plan opportunities (Ba-yuk et al. 2010). The authors posited that a concrete implementation plan focuses attention on means specified by

the plan but decreases appreciation for activities that are goal consistent but not in the plan, making people miss out on these opportunities. In the domain of financial decisions, it is found that planning a specific amount to save undermined savings when the individual is under a “how” rather than a “why” mind-set (Ülkümen and Cheema 2011). Further, consistent with findings in the goal-striving literature showing a goal dilution effect (Zhang, Fishbach, and Kruglanski 2007), Dalton and Spiller (2012) show that goal commitment can be weakened by forming implementation intentions for multiple goals simultaneously. Joining this emerging stream of findings, in this research we propose that the effect of planning on self-regulation may be influenced by an additional goal dimension, namely, goal distance. That is, the effect of planning might vary, depending on the gap between one’s current standing and one’s goal.

Interaction between Concrete Implementation Plans and Goal Distance

In general, goal distance has been shown to be negatively correlated with motivation for goal pursuit. The goal-gradient effect shows that effort invested in reaching a goal increases with proximity to that goal (Hull 1932; Kivetz, Urminsky, and Zheng 2006). When the goal is near, a fixed increment of progress represents a larger proportion of the remaining distance than when the goal is further away (Forster, Higgins, and Idson 1998). Because of this, the value of incremental progress is greater for those who perceive themselves as close to the goal, in comparison to those who perceive themselves as far away. Similarly, goals that seem as if they will be achieved in less time tend to have a greater impact on behavior than do those that seem as if they will take a longer period of time (Bandura and Simon 1977). Moreover, as goal distance increases, so does the perceived probability of failure (Bandura 1997), and anticipation of failure can cause anxiety and be demotivating (Huber 1985).

This general goal gradient effect notwithstanding, research shows that the effect of goal distance or a change in goal distance can be malleable. For example, recent findings suggest that the relationship between goal distance and motivation is subject to reference point effects (Bonezzi, Brendl, and De Angelis 2011). When someone is close to a reference point, marginal movement has the greatest perceived value. In particular, because people naturally use the initial state as a reference point early on, and the final state as a reference point when closer to the goal, motivation is lowest around the middle. In another work, Fishbach and Dhar (2005) showed that the effect of a movement toward the goal on subsequent self-regulation can depend on the manner in which the movement is construed by the individual; whereas movements perceived as a signal of one’s commitment to the goal lead to more goal consistent behavior subsequently, movements perceived as progress toward the goal can actually cause people to switch goals and begin pursuing a different, even inconsistent, goal. Finally, Cheema and Bagchi (2011) found that the goal gradient effect can be ex-

aggregated with visualization of the goal outcome. Specifically, when a person is close to a goal, being able to have a concrete vision of the goal outcome makes the goal appear even closer, but such visualization had little effect on those far from the goal.

In this research, we propose that the effect of goal distance can also depend on the availability of a concrete implementation plan. We observe that two factors are involved in the goal gradient effect: an assessment of one's standing with respect to the ideal goal state (i.e., distance *per se*) and an appreciation of the actions involved to go from the current state to the goal state (implementation concreteness). Thus, the first factor is the evaluation of the discrepancy, and the second is the awareness of what needs to be done, or what needs to happen to close the gap. Theoretically, these two factors can be independent, such that it is possible to have a goal that is relatively far away but does not involve elaborate actions or difficult circumstances to achieve and vice versa. However, in studies of the goal gradient effect, because these two factors are typically not separately identified, it is often unclear which factor is driving the goal gradient effect. Conceivably, it may not be the abstract goal distance *per se* but rather what the distance implies in terms of effort and difficulty/probability required to achieve the goal that ultimately gives rise to the goal gradient effect (Bandura 1997; Bandura and Simon 1977). Building on this insight, in this research, we propose that whereas an abstract awareness of a large goal distance alone may not be strongly demotivating, when the awareness of large goal distance is combined with concrete considerations of goal implementation as a result of planning, the overall picture becomes rather daunting for the individual. In fact, consistent with research showing that people may experience stress and distress when anticipating a difficult situation (Bandura 1977, 1988; Gellatly and Meyer 1992), when an individual in poor goal standing sees the concrete implementation necessary to achieve a goal, he/she might experience a feeling of distress, and this distress ultimately leads to weakened commitment to exert self-control toward the goal. In other words, for individuals who know they are far away from their goal, they may not necessarily be discouraged from goal striving if they did not also have a concrete view of how to achieve the goal; however, when a concrete implementation plan is also made salient, the large goal distance becomes distressing due to the actions needed for goal achievement.

Our proposed effect coheres with previous research showing that a goal violation may lead to further abandonment of the goal in subsequent choices (Soman and Cheema 2004). When making a concrete plan, the specific steps involved and, consequently, the various opportunities to fail may become more evident for those far from their goal. Thus, distress and demotivation can also stem from an anticipation of future goal violations. Our proposition is also consistent with the Ülkümen and Cheema's (2011) finding that setting a specific goal (e.g., to save a specific and exact amount) combined with a "how" mind-set can increase perceived goal difficulty and lead to less self-control. Indeed

planning the implementation toward an overall goal such as accumulating savings for retirement can be seen as turning the overall abstract goal into specific goals for action and doing it under a "how to" mind-set. Focusing on the specific actions to achieve a goal, in turn, leads to distress and demotivation for individuals far from their goals.

It is also important to note that we posit that the feeling of distress from planning only occurs for those in poor goal standing. We argue that for those who are close to their goal, seeing the concrete implementation toward the goal is unlikely to cause psychological distress because, regardless of the efforts prescribed in the plan, one is sufficiently close to the goal such that goal accomplishment is not perceived to be overwhelming. In fact, it is possible that the person in good standing is even encouraged by implementation concreteness or otherwise benefits from the cognitive accessibility of positive actions, resulting in more self-control. However, in this research we focus on the negative effect of planning for those in poor goal standing, and we will remain agnostic as to whether the positive effects would be significant for those in good goal standing, while maintaining that no negative effect of emotional distress will be produced by planning for this group.

Thus, in summary, we propose an interactive effect between planning and goal distance, whereby neither implementation concreteness nor large goal distance alone would necessarily engender distress, but their combination will create distress over goal achievement, thereby undermining the motivation to self-regulate toward the goal. Specifically, we propose the following hypotheses:

- H1:** The impact of concrete implementation planning on subsequent self-control toward a long-term goal will depend on one's perceived standing with respect to the goal:
- H1a:** For those who perceive themselves far from the goal, concrete implementation planning will lead to less subsequent self-control than in the absence of planning.
- H1b:** For those who perceive themselves close to the goal, planning will not negatively affect subsequent self-control.

Further, we hypothesize the following mechanisms underlying the effect of planning:

- H2:** The negative impact of planning on subsequent self-control for those in poor goal standing is due to the increased concreteness in one's vision of goal implementation. When making a plan does not increase implementation concreteness, it will not have a negative influence on self-control for this group.
- H3:** The negative effect of planning occurs because the combination of implementation concreteness and poor goal standing creates emotional dis-

stress, which then demotivates the individual to self-regulate toward the goal.

In the next sections, we present five experiments, including one field experiment, to test our hypotheses and to rule out a number of alternative theories.

STUDY 1: IMPACT OF PLANNING ON SPENDING OF THE 2008 TAX REBATE

As a test of hypothesis 1, we examined the effect of planning in a field experiment. The dispersion of the US 2008 Economic Stimulus Tax Rebate offered an opportunity for a natural setting. In an effort to rouse the faltering US economy, in the spring/summer of 2008 many US consumers received a tax rebate of up to \$1,200. In deciding how to use this money, consumers faced a self-control conflict whereby they could use it either to serve their long-term financial interest of accumulating savings and paying off loans or to pursue the immediate gratification of spending money on purchases. In this study we examine whether making a plan for how to use the stimulus money might affect how it is eventually used.

Method

Four hundred and eighty-three participants, consumers from a large online subject pool, took part in this study and were compensated for their time ($M_{\text{age}} = 36.0$, 70% female). The study was a two-condition between-subjects design, whereby half the participants were asked to plan how they would use the stimulus money, and the other half were not. Participants were contacted on three separate occasions as follows:

Time 1. The first part of the study took place 1 month before the first stimulus checks were to be sent out. Participants were given basic information about the 2008 Economic Stimulus Tax Rebate—who would qualify and the specifics of how the amount of the stimulus check was to be determined. On the basis of this information, all participants were asked to figure out how much money they would likely receive and report this. Participants were then randomly assigned to either the planning or the no-planning condition. In the planning condition, participants were asked to plan out how they would use the money. Specifically, they were asked to plan to allocate the money toward five purposes: spend, save, donate, pay off loans and debts, and invest, where the sum was equal to the projected amount they were to receive. Participants were then thanked and notified that they might be contacted later for a follow-up study. In the no-planning condition, participants were simply thanked and notified that they might be contacted later for a follow-up study.

Time 2. Participants were invited to participate in the second part of the study 2.5 months after they completed the first part. By this time most tax payers had received their stimulus checks. Those who indicated they had not yet received the check were excluded from the analysis of results.

Participants were asked to report their use of the tax rebate money. Specifically, they were asked how much of it they had spent, saved, donated, used to pay off loans and debts, or invested. Participants gave their responses in dollar amounts in which the sum was equal to the amount they received.

Time 3. Participants were invited to participate in the third and final part of the study 6 months after they completed the first part. Using a 5-point scale (anchored on “no savings at all” and “a great deal of savings”), they were asked to describe their level of savings 6 months ago, that is, approximately at the time of planning. This response served as a measure of self-assessed standing with respect to the long-term goal of accumulating savings at the time when plans were made.

Two hundred and twenty-eight participants completed all three parts of our study and reported having received the stimulus money by time 2. Attrition occurred across the three time periods but did not differ between the planning and the no-planning conditions ($t(482) = .73$, $p = .46$). These participants formed the basis of our analysis.

Results

To control for the amount of stimulus money received, absolute dollar responses for both planned and actual use of the money were converted into percentages of total amounts. To facilitate the analysis of the results, we consolidated the five-category response into three categories: long-term actions (includes saving, investing, and paying off debts, which all contribute to the long-term goal of accumulating more savings), short-term actions (spending), and other actions (donating). Our dependent measure was the percentage of rebate used for the short-term action of spending. For more detailed results breaking out all five categories, see table 1.

A regression with percentage of rebate spent as the dependent measure and planning, one's goal standing (i.e., savings level at the time of planning), as well as their interaction term as predictors revealed no main effect of planning ($\beta = .12$, $t(224) = 1.32$, $p = .19$) or of perceived goal standing ($\beta = .05$, $t(224) = 1.20$, $p = .23$). However, consistent with our prediction, there was a marginally significant interaction effect between planning and goal standing ($\beta = -.19$, $t(224) = 1.81$, $p = .07$). To explore this interaction, we conducted a spotlight analysis at the level of savings 1 standard deviation above and 1 standard deviation below the mean (Aiken and West 1991; Fitzsimons 2008; see fig. 1). Consistent with our hypotheses, we found that at savings 1 standard deviation above the mean, planning had no influence on percentage spent ($\beta = -.06$, $t(224) = .81$, $p = .42$). However, at savings 1 standard deviation below the mean, planning had a marginally significant positive effect on percentage spent ($\beta = .05$, $t(224) = 1.95$, $p = .08$).

Further, we examined the slope of goal standing both with and without planning. In the absence of planning, there was no relationship between perceived goal standing and spend-

ing ($\beta = .13, t(224) = 1.09, p = .28$). However, after planning there was a marginally significant negative relationship ($\beta = -.11, t(224) = 2.37, p = .06$), indicating that those who perceived their goal standing to be worse spent more relative to those who perceived their savings to be better. The nonsignificant slope in the absence of planning guards against the possibility that participants with lower savings may have spent more of the rebate money because of their greater need of money or a lack of will power. In fact, their self-control became worse than that of those with high savings only after planning.

Discussion

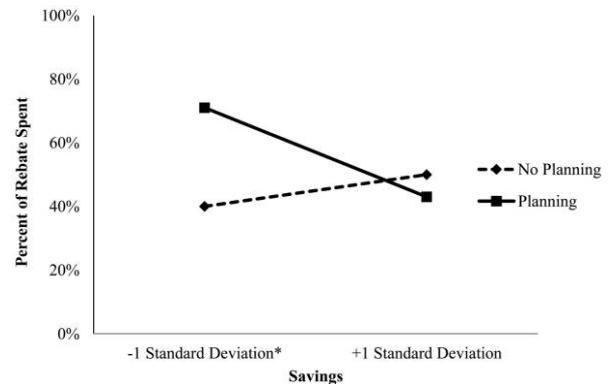
In an experiment with the 2008 Economic Stimulus Tax Rebate, we found that planning how to use this money led to more spending and less allocations into savings, investments, and paying off debts among those who lacked savings; in contrast, this effect did not occur among those already high in savings. However, although the field setting adds to the realism of the results, there are also several important caveats to this study. First, the self-control behavior was based on self-reports and thus subject to reporting errors and categorization biases. Second, the measure of self-assessed goal standing was based on recall after a significant delay. Hence, it is possible that the retrospective perceptions were not accurate reflections of subjective goal standing at the time of planning. Given these limitations, although this study provided support for our hypotheses in a field setting, more evidence is needed to further test the effects. Next we seek to provide convergent evidence as well as process insights in a set of lab studies.

STUDY 2: EFFECT OF PLANNING ON SUBSEQUENT FOOD CHOICE

In study 2 we wish to extend the effect of planning observed in study 1 to another self-control domain, namely, food consumption. In deciding what food to consume, consumers often face the self-control conflict between options

FIGURE 1

STUDY 1: INTERACTION OF PLANNING AND GOAL STANDING (SAVINGS) ON PERCENTAGE OF REBATE SPENT



NOTE.— * = effect of planning is significant at $p < .10$.

that are unhealthy but tasty and healthier options that are unfortunately less tasty. In this study, we look at the effect of a planning exercise that is commonly prescribed in the popular press to aid self-control in eating, namely, planning one's food intake for the day. In particular, we examine how this planning might affect a subsequent snack choice.

Further, we begin to provide insights into the mechanism underlying the negative effect of planning for those in poor goal standing. We first consider several alternative accounts to our hypothesized process of emotional distress. One explanation is based on ego depletion. Specifically, planning is an executive function that uses up one's general resource of self-regulation. Consequently, after planning, one may be depleted and unable to further exert self-control. One argument against this explanation is that it does not readily explain the asymmetry we find among those in good versus

TABLE 1

STUDY 1: PLANNED AND REPORTED USE OF REBATE MONEY AVERAGE PERCENTAGE ALLOCATED

	High perceived savings			Low perceived savings		
	Planning group		Not-planning group	Planning group		Not-planning group
	Plan	Reported behavior	Reported behavior	Plan	Reported behavior	Reported behavior
Short term (spend)	27 ^b	41 ^b	49	34 ^b	51 ^{a,b}	37 ^a
Long-term total	71 ^c	57 ^c	49	65 ^c	48 ^c	61
Invest	5	3	0	5	0	0
Save	47 ^b	22 ^{a,b}	9 ^a	29 ^b	11 ^b	11
Pay off loans/debts	19 ^b	32 ^b	40	31	37	50
Other (donate)	2	1	1	1	0	2

NOTE.—High perceived savings and low perceived savings groups are based on respondents' retrospective ratings of their own level of savings on a 5-point scale.

^aSignificantly different at $p < .05$, for differences between the reported behavior of the planning group and the not-planning group.

^bSignificantly different at $p < .05$, for differences between the plan and reported behavior among the planning groups.

^cSignificantly different at $p < .10$, for differences between the plan and reported behavior among the planning groups.

poor goal standing, unless we assume planning is differentially ego depleting for those in good versus poor goal standing—an assumption that has not been established in previous research.

Another difference between ego depletion and our proposed mechanism is that research reveals ego depletion is not context specific—when a self-regulatory resource is used in one domain, it affects self-control in all arenas subsequently (Baumeister and Vohs 2004). Thus, if making plans taxes one's executive function enough to reduce subsequent self-control, this effect should occur regardless of whether one makes plans for eating or, say, for studying. In contrast, our account based on emotional distress due to planning is domain specific; the situation is stressful only for those who perceive themselves to be in poor standing in the planned domain. Thus, in this study we examine whether the effect of planning is domain specific. This will help us not only gauge whether a general ego depletion effect can account for the planning effect but also delineate a boundary for the planning effect, namely, whether planning in one domain can influence self-control behavior in another.

An alternative theory is that the negative effect of planning is a result of poor self-esteem among those in poor goal standing. Self-esteem differs from goal standing in that, whereas self-esteem is a general perception of oneself, perceived goal distance is only specific to the goal domain. Thus, we wish to test whether planning works negatively for all with low self-esteem or whether the pattern is only driven by domain-specific poor goal standing.

Finally, we wish to examine whether planning affects subsequent self-control simply by reminding people of their self-control goal or whether other processes are involved. To this end, we equalize goal activation across all conditions to control for this factor.

Method

Participants were 363 members of the University of California, Los Angeles (UCLA), community who participated in this study along with several other studies and were compensated for their time ($M_{\text{age}} = 21.2$, 62% female). To control for the activation of one's health goal across all groups, all participants were first given a "health questionnaire." The questionnaire involved sets of three food items and asked participants to cross out the least healthy and circle the most healthy option from each set. Thus, the goal to eat healthily and the contrast between healthy and unhealthy foods became equally salient for all participants.

Next, participants were randomly assigned to three conditions—relevant planning, irrelevant planning, and no planning (control). In the relevant-planning condition, participants were asked to plan out all of their meals and snacks throughout the rest of the day (the study was run in the morning). In the irrelevant-planning condition, they were asked to plan out when and how much time they would study throughout the rest of the day. In the no-planning condition, they were asked to describe what they did the day before.

Then, after several filler tasks, we collected our goal distance as well as general self-esteem measures. Respondents were asked whether they considered themselves overweight (5-point scale: 1 = very overweight, 2 = overweight, 3 = average weight, 4 = underweight, 5 = very underweight) and then were given the 10-item Rosenberg Self-Esteem Scale (1965).

Finally, after completing all questions in the packet, as participants left the room they were stopped by a research assistant, blind to our hypothesis, who explained to them that as a thank-you gift they were to be given a snack, along with their payment. They were shown a single-cup Reese's Peanut Butter Cup (unhealthy option) and a snack-sized box of Sun Maid Raisins (healthy option; confirmed by pretest) and asked whether they would like either of these snacks. The research assistant unobtrusively noted which snack they took or if they took no snack at all. The no-snack choice was retained to maintain the realism of the situation (that participants were not forced to take a snack).

Results

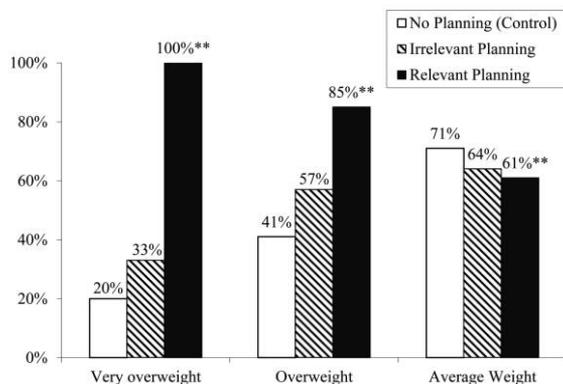
We examined the percentage of participants selecting the unhealthy option, the candy. We coded choosing the healthy option, namely, the raisins, as well as choosing to not have any snacks as one category ("choosing healthy") because both are behaviors of successful self-regulation toward one's long-term health goal. Overall, 13.2% selected no snack, and there was no effect of planning ($\beta = -.36$, Wald = .18, $p = .73$), self-weight perception ($\beta = -.53$, Wald = .54, $p = .48$), or their interaction ($\beta = .17$, Wald = .18, $p = .64$) on selecting no snack across conditions. An analysis focusing only on those choosing either the candy or the raisins yielded similar results as when "no choice" participants were included. We excluded those who were underweight (values = 4 or 5 on the weight-standing response; $N = 54$, 14.9%) from analysis because it was not clear what would be the more long-term beneficial choice in this context for this group, although the pattern of results did not change when the underweight participants were included.

A logistic regression with planning as a categorical variable and weight standing as a continuous variable (varying from 1 to 3) and their interaction revealed no main effect of planning on unhealthy snack choice ($\beta = .22$, Wald = .26, $p = .87$), nor was there a main effect of self-perceived weight ($\beta = .24$, Wald = 2.76, $p = .47$). However, as predicted, there was a significant interaction between planning and weight perception ($\beta = -2.62$, Wald = 12.17, $p < .001$).

Effect of Planning. We examined contrasts according to hypotheses 1a and 1b (see fig. 2 for choice percentages) at each level of weight. First, among "average weight" participants, planning food intake had a significant impact on the likelihood of selecting the unhealthy option (no planning = 71%, relevant planning = 61%; $\chi^2(1) = 10.48$, $N = 138$, $p = .001$), suggesting that planning had a positive effect on subsequent self-regulation, supporting hypothesis 1b. How-

FIGURE 2

STUDY 2: INTERACTION OF PLANNING AND SELF-REPORTED WEIGHT STANDING ON CHOICE OF UNHEALTHY SNACK OPTION



NOTE.— ** = significantly different from no planning at $p < .05$.

ever, supporting hypothesis 1a, planning had a negative effect on those in poor weight standing. Among participants who rated themselves as “2 = overweight,” whereas 41% of participants selected the unhealthy option in the no-planning condition, 85% did so in the relevant-planning condition ($\chi^2(1) = 12.22$, $N = 59$, $p < .001$). Finally, among participants who rated themselves as “1 = very overweight,” only 20% selected the unhealthy snack in the no-planning condition, but all (100%) selected it in the relevant-planning condition ($\chi^2(1) = 6.67$, $N = 10$, $p = .01$).

It is also noteworthy that, in the no-planning condition, there was a significant difference in snack choice among participants of different weights, whereby the more overweight participants were less likely to select the unhealthy option: very overweight = 20%, overweight = 41%, and average weight = 71% (comparison of all three: $\chi^2(2) = 11.39$, $N = 105$, $p = .003$). This pattern in the no-planning condition argues against an alternative theory whereby planning backfired for those who were overweight because they were less disciplined people by trait. Our results show that to the contrary, absent planning, those who perceived themselves to be overweight were more disciplined in regulating their eating than were those who did not perceive themselves to be overweight. However, self-regulation ironically unraveled for those in poor goal standing after they engaged in planning.

Effect of Irrelevant Planning. Next, we examined the situation in which planning and self-control were in different domains. Inconsistent with a general ego depletion effect of planning, we found that when participants first planned their studying, this planning did not affect their subsequent self-control behavior in the snack choice domain (irrelevant planning = 61%, no planning = 59%; $\chi^2(1) = .07$, $N = 207$,

$p = .79$). This was the case among the average-weight participants (irrelevant planning = 64%, no planning = 71%; $\chi^2(1) = .64$, $N = 132$, $p = .42$), the overweight participants (irrelevant planning = 57%, no planning = 41%; $\chi^2(1) = 1.83$, $N = 67$, $p = .22$), and the very overweight participants (irrelevant planning = 33%, no planning = 20%; $\chi^2(1) = .18$, $N = 8$, $p = .67$). Thus, planning did not have a general ego depletion effect, and it affected self-control only when planning was in the relevant domain.

Effect of Self-Esteem. Next, we examined whether the negative planning effect was driven by poor goal standing in the weight domain or one’s general self-esteem. Indeed, we found that self-perception of weight was correlated with overall self-esteem ($r(363) = -.13$, $p = .01$), with being overweight associated with lower self-esteem. However, a logistic regression on likelihood of selecting the unhealthy option with planning conditions, self-esteem, and their interaction as predictors showed no main effect of planning ($\beta = -.11$, Wald = .42, $p = .54$) or self-esteem ($\beta = -.02$, Wald = 2.02, $p = .33$) or an interaction effect ($\beta = -.12$, Wald = 1.11, $p = .14$). Thus, although self-esteem correlated with self-perception of weight, it did not play a significant role in the effect of planning on snack choices.

Healthiness of Plans. Finally, we examined the content of participants’ plans. One possible explanation for the differential effect of planning on those in good versus poor goal standing is that those in poor goal standing actually made less healthy plans, thereby leading to their less healthy choices subsequently. To examine this possibility, we created for each participant an overall index of healthiness of his/her plan by taking the number of healthy options in the plan (e.g., fruit, vegetables, water) and subtracting the number of unhealthy options (e.g., fast food, pizza, dessert, soda; classification was done by two coders blind to our hypothesis: rater agreement = 83.7%, disagreements were resolved by discussion). There was no significant difference in healthiness of plans among participants of different weight standing ($M_{\text{average}} = 1.57$, $M_{\text{over}} = 1.46$, $M_{\text{very over}} = 1.40$; $F(2, 105) = .05$, $p = .96$). Thus, it appears that, regardless of one’s self-assessed weight standing, all plans were relatively healthy. Nevertheless, the same healthy plans had differential effects on self-control whether the person perceived himself/herself to be in good versus poor weight standing.

Discussion

Study 2 provided convergent evidence that planning can have a negative effect on subsequent self-control for those who are in poor goal standing. Further, this effect does not seem to stem from effects of ego depletion, low self-esteem, chronic weakness of will, or the content of the plans. Instead, those in poor goal standing appear to respond differently to planning than do those in good goal standing.

In the next studies, we seek to examine the mechanism underlying the negative planning effect. We theorized that the aspect of planning driving the effect is increased im-

plementation concreteness. That is, given a self-control goal, planning tends to create a more specific and concrete vision of the implementation toward goal achievement. This concreteness of implementation, in turn, engenders a feeling of distress among those far away from their goal, resulting in demotivation. Thus, in study 3, we examine the role of implementation concreteness in the planning effect. Then in study 4, we study the mediating role of emotional distress.

STUDY 3: ABSTRACT VERSUS CONCRETE PLANNING

We hypothesized that implementation concreteness combined with poor goal standing leads to an individual's demotivation from self-regulation. If this is the case, then when the planning is done more abstractly and does not afford significantly greater implementation concreteness than in the absence of planning, we would not expect to see the same negative effects on subsequent self-control. Thus, in study 3 we contrast concrete planning to abstract planning.

Moreover, we institute a number of methodological variations compared to study 2 for generalizability of the findings. Specifically, in study 2 we measured self-perceived weight standing using a rating scale. Even though this approach directly measures the theoretical construct of interest, one caveat is that such self-ratings might be confounded by issues with scale usage and sensitivity of the measure. Thus, to provide convergent evidence, in study 3 we measure goal distance using an objective measure of weight standing as a proxy for subjective weight standing, namely, one's calculated body fat percentage (BFP; Deurenberg, Weststrate, and Seidell 1991). Such an objective measure also increases the external relevance of this research.

Further, whereas in study 2 goal distance was made explicit and salient before the self-control choice (the weight-standing question took place before the eventual snack choice), in this study we take the measures for goal distance after the self-control decision. Thus, we are able to demonstrate that the planning effect does not rely on an artificially elevated salience of goal distance; instead, one's chronic self-perception of weight standing, even without being activated explicitly, can interact with planning to affect subsequent self-control.

Method

Participants were 161 members of the UCLA community who participated in this study along with several other studies and were compensated for their time ($M_{\text{age}} = 21.6$, 45% female). As in study 2, we first activated participants' healthy weight goal across all conditions to control for goal activation. Participants were told, "consciously or unconsciously maintaining a healthy and attractive weight is a goal that most people pursue" and then asked in an open-ended question to "please discuss why reaching and/or maintaining an ideal weight is important to you and how this would help you in the future."

Next, participants were randomly assigned to one of three

conditions: concrete planning, abstract planning, and no planning (control). In the concrete-planning condition, participants were asked to consider their eating, all meals and snacks, throughout the rest of the day (the study was run in the morning). Specifically, they were asked to divide the day up into 2-hour increments and then for each 2-hour increment plan the number of calories they were to consume in that time period. In the abstract-planning condition, they were asked to select one of nine options of total calories to consume during the rest of the day, where the options were given as a range to increase their abstractness (e.g., 0–500 calories, 601–1,000 calories). Thus, in both planning conditions, participants were asked to plan their caloric intake in numeric terms; however, the critical difference is that in one condition, this planning was done at a very specific level of every 2 hours and in exact numbers, whereas in the other, it was for the whole day and only a range was specified. We expect that in the latter case, the plan offered only a vague blueprint for how one might implement healthy eating that day and, hence, was unlikely to significantly increase implementation concreteness. Participants in the no-planning condition were not asked to do any planning (after the health goal activation task). As a manipulation check, participants were then asked to rate on a 7-point scale how concretely they could see what they needed to do that day in terms of food intake.

Of note, the concrete planning in this study is different in format from that in study 2 (relevant planning)—whereas in study 2 participants planned the specific food items for each meal and snack for the day, in this study, participants planned for specific caloric numbers. By varying the form of plans, we wish to demonstrate that the effect of planning is not specific to any particular form of planning. In contrast, the abstract-planning condition is conceptually different because the planning is much less concrete. Thus, we show that it is the concreteness of the plan, rather than its specific form, that underlies the planning effect.

After the planning manipulation, several filler tasks were performed. Then, in an ostensibly unrelated study, participants were told that they had a choice between two possible studies to complete. They could participate in either a taste study that would involve eating Oreo cookies or a decision-making study (that did not involve eating cookies). Participants were told that the two studies would take the same amount of time and were the same level of difficulty. Oreo cookies have been pretested to be considered both tasty and unhealthy, and the Oreo-tasting study was considered more attractive than the decision-making study. Therefore, a choice to participate in the less attractive decision-making study in order to avoid eating the Oreo cookies required a certain amount of self-regulation.

After their choice, participants who had selected the taste study were given a sandwich bag containing Oreo cookies and were asked questions about the taste of the cookies. Participants who selected the decision-making study were asked various questions about how they made decisions unrelated to the current study.

Finally, participants were asked to give their current height, weight, age, and gender. They were then debriefed and thanked for their participation.

Results

Objective Measure of Weight Standing. We calculated participants' BFPs on the basis of a formula by Deurenberg et al. (1991) that takes into account height, weight, gender, and age. Women naturally have a higher BFP than men, and recommendations for healthy BFP vary by gender. Specifically, according to both the American Council on Exercise (2009) and the American Dietetic Association (2009), whereas men with a BFP of 17% or higher are classified as overweight, women with a BFP of 25% or higher are classified as such. To account for this gender difference in the weight-standing implication of BFP numbers, we added eight to the BFP for all male participants, such that a value above 25 is overweight for both genders.

Manipulation Check. Respondents were asked how concretely they see what they had to do that day in terms of food intake. An ANOVA showed a marginally significant overall main effect in implementation concreteness across the three planning conditions (control = 4.4, abstract planning = 4.7, concrete planning = 5.1; $F(2, 158) = 2.49$, $p = .08$). Planned contrasts showed that as intended, the comparison between the concrete-planning and the no-planning conditions was significant ($F(1, 99) = 4.98$, $p = .03$), whereas the abstract-planning condition fell in between and was not significantly different from the no-planning condition ($F(1, 103) = 1.03$, $p = .31$).

Effect of Abstract and Concrete Planning. Using a logistic regression, we examined the percentage of participants selecting the taste study that involved eating Oreo cookies. We included planning as a categorical variable and found no main effect of abstract planning (37%, $\beta = -.68$, Wald = 2.47, $p = .12$) or of concrete planning (54%, $\beta = .24$, Wald = .33, $p = .57$) compared to the control condition (49%). There was a main effect of BFP ($\beta = -.90$, Wald = 4.49, $p = .03$), whereby respondents with lower BFP were more likely to select the taste study. However, this main effect was qualified by a significant interaction effect ($\beta = .87$, Wald = 9.59, $p = .002$), which was driven by the interaction of concrete planning and BFP ($\beta = 1.61$, Wald = 8.93, $p = .003$), while there was no significant interaction effect of abstract planning and BFP ($\beta = .39$, Wald = .56, $p = .45$).

To explore the interaction between planning and BFP, we performed a spotlight analysis. Supporting hypothesis 1a, at 1 standard deviation above the mean BFP, concrete planning significantly increased the likelihood of selecting the unhealthy snack ($\beta = 1.85$, Wald = 6.56, $p = .01$). In contrast, consistent with hypothesis 1b, at 1 standard deviation below the mean BFP, concrete planning significantly reduced the unhealthy choice ($\beta = -1.37$, Wald = 4.51, $p = .03$). Abstract planning had no significant effect at BFP 1 standard

deviation above the mean ($\beta = -.29$, Wald = .15, $p = .70$) but marginally reduced the unhealthy choice at BFP 1 standard deviation below the mean ($\beta = -1.08$, Wald = 3.18, $p = .07$; see fig. 3).

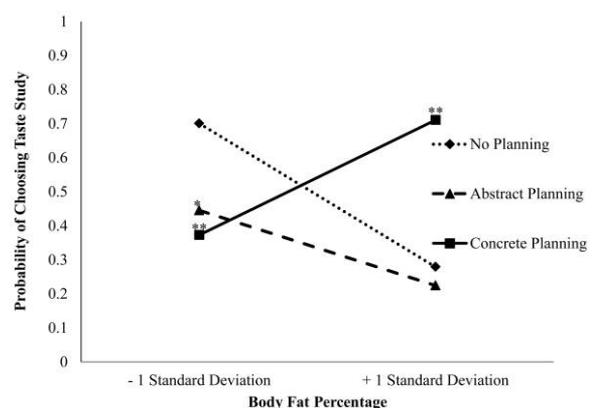
Additionally, we examined the slopes of BFP at each level of planning. In the concrete-planning condition, the slope of BFP was positive and significant ($\beta = .71$, Wald = 4.60, $p = .03$), indicating that after planning individuals in poorer weight standing were more likely to select the unhealthy snack than were those in better weight standing. However, the slope of BFP in the abstract-planning condition was negative although only marginally significant ($\beta = -.50$, Wald = 2.79, $p = .09$). Finally, in the no-planning condition, the slope of BFP was negative and significant ($\beta = -.89$, Wald = 4.16, $p = .04$). Thus, in the absence of planning and under abstract planning, those in poor weight standing were more likely to exert self-control. As in studies 1 and 2, this result suggests that it was not a chronic lack of self-control but rather the activity of concrete planning combined with their weight status that led the more overweight individuals to abandon self-control subsequently.

Discussion

Using an objective weight measure as a proxy for subjective goal standing, and a different form of planning (planning for calories rather than food items), study 3 replicated the results of study 2. Further, the deleterious impact of planning among participants in poor goal standing only occurred when planning was relatively concrete but not when it was abstract, supporting our theory that the concrete vision of goal implementation is driving the planning effect.

FIGURE 3

STUDY 3: INTERACTION OF PLANNING (ABSTRACT AND CONCRETE) AND PERCENTAGE BODY FAT ON PROBABILITY OF CHOOSING TASTE STUDY INVOLVING EATING COOKIES



NOTE.— * = significantly different from no planning at $p < .10$; ** = significantly different from no planning at $p < .05$.

Next, we examine the process by which implementation concreteness leads to decreased self-regulation among those in poor goal standing. We proposed that for these individuals, having a more concrete idea of what needs to be done in order to achieve the goal is likely to cause a feeling of distress over the daunting nature of the goal, causing demotivation to self-regulate toward the goal. In study 4 we seek to test for this hypothesized mediating role of feelings of distress.

STUDY 4: EMOTIONAL DISTRESS IN RESPONSE TO PLANNING

We wish to examine whether participants in poor goal standing experience emotional distress when they make concrete plans and whether this emotional distress drives the breakdown of self-regulation after planning. Further, we wish to measure distress via implicit measures (Greenwald and Banaji 1995). Research shows that measuring emotions explicitly can be intrusive and that often their mere measurement can alter a person's subsequent emotions and behavior (Pham 1998). Consequently, we shy away from measuring emotions explicitly after the act of planning and before the act of self-regulation so as not to artificially influence the self-regulation observation. (Measuring emotions after the self-control decision is equally unappealing, as emotions could change after the self-control decision.) Instead, we adopt an implicit measure of affect (DeWall and Baumeister 2007) to test for distress unobtrusively.

Method

Participants were 171 University of Miami undergraduates who participated in this experiment for partial course credit ($M_{\text{age}} = 19.6$, 39% female). Participants were randomly assigned to two conditions—planning and no planning (control). The procedure was similar to that used in study 3, with the planning condition mirroring the concrete-planning condition. Additionally, after planning (or a filler task in the control condition), participants filled out an implicit emotions measure. Participants completed a word stem completion task used in previous research to measure emotions implicitly (DeWall and Baumeister 2007). Specifically, they were given the first half of various words and asked to complete them. Some of the stems could be finished to create emotional words, for example, “str” could be used to form “stress.” Electing to form words with emotional meaning is considered an implicit measure of those emotions existing within the person at that time (DeWall and Baumeister 2007; DeWall et al. 2011). We gave participants a total of 14 word stems, three of which contained our critical emotional words, namely, “stress” based on completion of the stem “str,” “upset” (“ups”), and “distress” (“dis”). The other word stems were not targeted toward any emotional words. After the word completion task and a few more filler tasks, participants made a choice between participating in a taste study that involved eating Oreo cookies and a decision-making study that did not involve eating, as in study 3.

Finally, participants were asked to give their current height, weight, age, and gender. They were then debriefed and thanked for their participation. We calculated participants' BFP and accounted for gender using the same method as in study 3.

Results

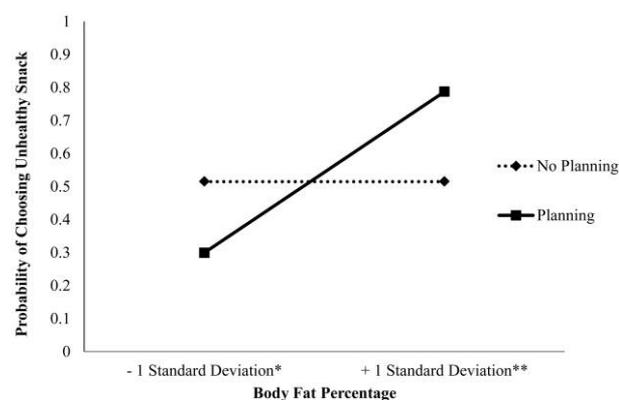
Planning and Behavioral Response. As in study 3, we examined the percentage selecting the taste study that involved eating Oreo cookies, using a logistic regression with variables for planning, BFP, and an interaction of the two terms. We found no main effect of planning on task choice (planning = 58%, no planning = 52%; $\beta = .17$, Wald = .29, $p = .59$), nor was there a main effect of weight standing ($\beta = .002$, Wald = .002, $p = .97$). However, there was a significant interaction of these two variables ($\beta = 1.08$, Wald = 6.07, $p = .01$).

To explore this interaction, we performed a spotlight analysis to consider the effect of planning among those with higher and lower BFP. Consistent with hypothesis 1a, at BFP 1 standard deviation above the mean, planning significantly increased the likelihood of selecting the unhealthy snack ($\beta = 1.26$, Wald = 4.82, $p = .03$). Consistent with hypothesis 1b, at BFP 1 standard deviation below the mean, planning marginally decreased the likelihood of selecting the unhealthy snack ($\beta = -.91$, Wald = 3.29, $p = .06$; see fig. 4).

Additionally, we examined the slopes of BFP both with no planning and with planning. Consistent with prior studies, with no planning, there was no relationship between BFP and likelihood of selecting the taste test ($\beta = .01$, Wald =

FIGURE 4

STUDY 4: INTERACTION OF PLANNING AND PERCENTAGE BODY FAT ON PROBABILITY OF SELECTING THE UNHEALTHY SNACK



NOTE.— * = planning and no planning are significantly different at $p < .10$; ** = planning and no planning are significantly different at $p < .05$.

.002, $p = .97$). However, after planning there was a significant positive relationship ($\beta = 1.10$, Wald = 8.89, $p = .003$), indicating that those with a higher BFP were more likely to select the task involving eating Oreo cookies.

Implicit Measure of Emotional Distress. For our implicit measure of emotional distress, we created a dummy variable, where a value of one indicated the participant completed at least one of the three emotional distress stems with the target word, and zero indicated otherwise. We used a dummy coding scheme because we had no predictions whether there would be additive effects among these items. A logistic regression with planning, BFP, and their interaction as predictors found no main effect of planning (planning = .46, control = .33; $\beta = .52$, Wald = 2.49, $p = .12$) or of BFP ($\beta = .11$, Wald = .03, $p = .86$), but there was a significant interaction effect ($\beta = 1.06$, Wald = 8.09, $p = .004$). A spotlight analysis showed that, parallel to the patterns of the self-control behavior, at BFP 1 standard deviation above the mean BFP, planning significantly increased emotional distress ($\beta = 1.58$, Wald = 9.30, $p = .002$). In contrast, at 1 standard deviation below the mean BFP, planning had no effect on emotional distress ($\beta = -.54$, Wald = 1.27, $p = .26$; see fig. 5).

Mediation Analysis. We then tested whether the impact of planning on subsequent self-control was mediated by emotional distress, using a series of logistic regressions (Baron and Kenny 1986). As discussed earlier, there was a significant interaction effect of planning and BFP on task choice ($\beta = 1.08$, Wald = 6.07, $p = .01$) and on implicit distress ($\beta = 1.06$, Wald = 8.09, $p = .004$). Additionally, there was a significant effect of implicit distress on task choice ($\beta = .62$, Wald = 3.74, $p = .05$). Importantly, when both planning \times BFP and distress were included in the regression to predict task choice, the effect of planning \times BFP became insignificant ($\beta = .40$, Wald = 1.56, $p = .21$), whereas distress remained significant ($\beta = .46$, Wald = 7.86, $p = .005$; Sobel test statistic = 1.89, $p = .05$). Thus, emotional distress mediated the influence of planning and weight standing on self-control.

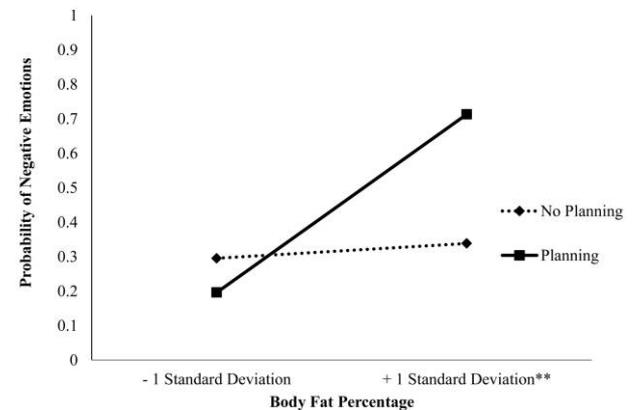
Discussion

Studies 3 and 4 revealed why planning led to less self-control among participants far from their goal. Study 3 focused on the role of implementation concreteness, whereas study 4 demonstrated that the reason concrete plans reduce self-control is due to the emotional distress engendered by such plans.

Taken together, the four studies thus far consistently demonstrated the differential effect of planning on those in good versus poor goal standing, across different self-control contexts, types of measurements, and plans. However, in these studies we have only relied on measured variables of goal standing. This gives rise to the concern that there might be a spurious correlation between the population that is overweight (or low in savings) and the negative response to

FIGURE 5

STUDY 4: INTERACTION OF PLANNING AND PERCENTAGE BODY FAT ON PROBABILITY OF REPORTING EMOTIONAL DISTRESS



NOTE.— ** = significantly different at $p < .05$.

planning and that the planning effect is not driven by goal standing but a correlate of it unrelated to our theory. In our last study, we wish to rule out this explanation by experimentally manipulating the temporary self-perception of goal standing.

STUDY 5: MANIPULATED PERCEPTION OF GOAL STANDING

In study 5 we examine the effect of temporarily manipulated self-perception of goal standing on the impact of planning.

Method

Participants were 378 members the UCLA community who participated in this study along with several other studies and were compensated for their time ($M_{age} = 21.1$, 64% female). There were three sections to the study, and participants were led to believe the sections were not related. In part 1 participants were randomly assigned to either the planning or the no-planning condition. The procedures for the planning manipulation were identical to study 2. In part 2 participants were randomly assigned to the positive or the negative perception of self-standing or the control conditions. In part 3 (when they left the study session) participants had a choice between a healthy and an unhealthy snack (a chocolate bar vs. a box of raisins), as in study 2. As in study 2, to maintain the realism of the situation there was also the option to select neither. Thus, study 5 had a 2 (planning, no planning) \times 3 (perception of self-weight standing: positive, negative, control) between-subjects design.

To manipulate perception of self-weight standing, partic-

ipants in the positive and negative conditions were shown an image of someone in a bathing suit either with an out-of-shape body or with an ideal body, respectively. The image was matched to the gender of the participant. Previous research shows that self-views on physical appearance are threatened by exposure to idealized images (Richins 1991). Using 9-point scales, participants were asked to compare their own body to this body (1 = my body is much worse, 5 = the same, 9 = my body is much better) and what their friends would say if asked to compare the participant's body to this body (same scale). We expect those seeing an ideal image would feel they were far from the ideal weight themselves, whereas those seeing the out-of-shape body would feel more content with their own weight. All participants, including those in the control (no-image) condition, were then asked about their satisfaction with their body, which served as a manipulation check.

Results

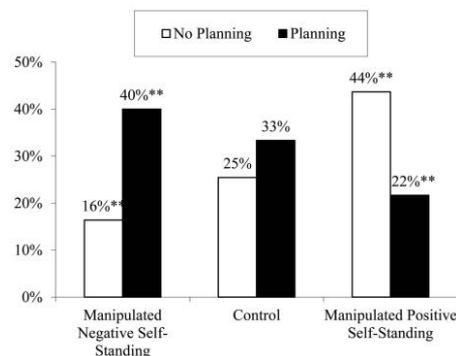
Manipulation Check. An ANOVA on the self-body satisfaction measure showed a main effect of weight-standing manipulation ($F(2, 375) = 7.50, p = .001$). Participants in the positive-perception condition were more satisfied with their body ($M = 4.62$) than were those in the negative-perception condition ($M = 3.98; t(255) = 3.83, p < .005$), with those in the control condition falling between the two ($M = 4.43$) and significantly different from the negative-perception condition ($t(245) = 2.66, p = .008$), although not from the positive-perception condition ($t(250) = 1.08, p = .81$). We venture that this may reflect individuals' greater susceptibility to upward than to downward social comparison in the body image domain. However, for the theory-testing purpose of this study, it is sufficient that the positive and the negative conditions were significantly different through our manipulation.

Effect of Planning. We examined the choice of the unhealthy snack (choosing the healthy snack or choosing neither snack was considered a healthy choice). We found no main effect of planning (planning = 32%, no planning = 29%; $\chi^2(1) = .83, N = 378, p = .60$), nor was there a main effect of manipulated self-weight perception (negative = 29%, control = 30%, positive = 34%; $\chi^2(2) = .83, N = 378, p = .66$). There was, however, a marginally significant interaction effect of these two terms ($\chi^2(2) = 4.95, N = 378, p = .08$).

Consistent with hypothesis 1a (see fig. 6), planned contrasts showed that for those who were made to feel negative about their weight, planning increased the propensity to choose the unhealthy option (no planning = 16%; planning = 40%; $\chi^2(1) = 8.60, N = 126, p = .003$). In contrast, consistent with hypothesis 1b, planning decreased one's propensity to select the unhealthy choice among those made to feel positive about their weight (no planning = 44%, planning = 22%; $\chi^2(1) = 7.05, N = 131, p = .01$). There was no significant difference between the planning (33%) and the no-planning (25%) conditions among the control

FIGURE 6

STUDY 5: INTERACTION OF PLANNING AND MANIPULATED GOAL STANDING ON CHOICE OF UNHEALTHY SNACK OPTION



NOTE.— ** = difference between plan and no plan is significant at $p < .05$.

(no-image-presented) participants ($\chi^2(1) = .89, N = 121, p = .35$), reflecting the fact that this condition was a mix of participants with both positive and negative chronic self-body image.

Finally, corroborating the results of prior studies, in the no-planning condition, those made to perceive their body negatively exerted more self-control (16% choosing the unhealthy option) than did those who were made to perceive their body positively (44%, $\chi^2(1) = 4.89, N = 125, p = .02$). Thus, a (temporary) perception of poor goal standing does not itself lead to lack of self-regulation; in fact, the opposite is true. However, when this poor goal standing is combined with a plan of specific, concrete implementation, one becomes demotivated to self-regulate toward the goal.

Discussion

Adding to the results of the previous studies based on chronic goal standing, study 5 showed that a temporarily induced self-perception of one's standing in a particular goal domain can also interact with planning to affect subsequent self-control behavior. One further implication of study 5 is that those in chronic poor goal standing are not doomed to suffer from planning—they can also benefit from planning if their self-perception of goal standing can be temporarily elevated.

GENERAL DISCUSSION

In five studies, we found consistent evidence that, contrary to popular belief, the act of planning is not always beneficial for subsequent self-regulation. Specifically, although planning tended to have either a positive or an insignificant effect for those who were in good standing with

respect to their long-term goal, it consistently had a negative effect on subsequent self-control for those who were in poor goal standing. Further, we provided insight into why this effect occurred. Study 3 revealed that the increased concreteness in one's vision of goal implementation due to planning is the driver of the effect. Moreover, as observed in study 4, this concrete implementation plan combined with large goal distance produced a feeling of distress, which mediated the negative effect of planning on subsequent self-control.

This research makes a significant theoretical contribution to the literature of planning and self-regulation. Whereas previous research tended to study goal distance and goal implementation separately, this research examined their interaction and found significant interactive effects. Further, this research highlights the emotional and motivational, rather than cognitive, impact of planning and its consequences for behavior. It demonstrates that thought processes that may have positive cognitive effects (e.g., greater accessibility of positive behavior) might also have detrimental emotional consequences.

By focusing on the emotional response to planning and its behavioral consequences, this research also sheds light on the classic gap that exists between stated intentions and actual behavior (Ajzen and Fishbein 1977; Ajzen and Madden 1986). In addition to factors identified by previous research contributing to this gap, such as differences in predicted versus experienced utility (Kahneman and Snell 1992), perceptions of control (Ajzen and Madden 1986), and amount of self-monitoring (Ajzen, Timko, and White 1982), this research suggests that perhaps another factor that might widen the gap is the emotional response elicited by stated plans and intentions. Such a factor might be particularly likely to come into play in domains that are highly important to the self and ridden with conflict, as dieting and personal finance may be for many.

Further, this research contributes to a deeper understanding of the effect of goal distance and goal gradient. Specifically, even though the goal gradient effect is a well-established phenomenon, the factors involved in this effect still remain to be thoroughly studied. In this research, we found evidence that, without planning, those who are more distant from a goal are equally motivated or even more motivated to pursue the goal than are those closer to a goal; however, with planning they become more demotivated, as the goal gradient hypothesis would suggest. We venture that this discrepancy occurs because the effect of goal distance depends on how this distance is psychologically represented—when it is represented abstractly as a gap between an ideal and the current state, a large gap might in fact be motivating; however, when the distance is represented in terms of concrete implementation in order to achieve the goal, the classic goal gradient effect emerges strongly such that those who are far away from the goal become distressed and consequently demotivated. Thus, this research highlights the importance of understanding the mental representation of goals and goal pursuit and how behavioral interventions such as

planning may change such representations. Further, the emotional impact of changes in mental representation of goals is worthy of much future research.

Limitations and Future Research

This research also has a number of limitations and raises important questions for future investigation. First, although we provided evidence against several alternative mechanisms such as ego depletion, self-esteem, and difference in plan content, future research can more fully rule out alternative explanations. For example, another alternative account might be that of licensing (Khan and Dhar 2006). Specifically, planning might be seen as a virtuous act, and as such, it gives the person license to indulge in the next actions. However, if licensing plays any role in our planning effect, it must be that those in good versus bad goal standing perceive the license differently. Such a possibility has not been raised in the existing literature on licensing. Additionally, a licensing explanation cannot explain the emotional response results we obtained in study 4. Thus, for a licensing account to be established, more research is needed to examine how licensing affects individuals with different goal standing differentially.

One additional potential alternative account may be based on the notion of goal commitment versus goal progress (Fishbach and Dhar 2005). Specifically, it might be possible that those in good versus poor goal standing construe planning differently such that those in good standing see planning as a sign of goal commitment, whereas those in poor standing view planning as a sign of goal progress. Previous research shows that seeing goal progress might cue the person to switch to another goal. However, one caveat of this explanation is that it cannot account for the emotional effect of planning found in study 4—if those in poor goal standing view planning as goal progress, then they should not feel distressed about the goal. Yet another factor that may have played a role in the planning effect is the perception of goal difficulty. Indeed, whereas we have focused on the overall emotional response of distress in driving the demotivation toward a goal, such emotional distress may have also been accompanied by explicit or implicit appraisals of increased goal difficulty. In general, the relationship between planning and the notions of goal commitment versus progress and the appraisals of goal dimensions such as goal difficulty are rich grounds for future research.

Finally, another alternative explanation might be that the observed demotivation is the result of a mismatch in construal level between a large goal distance and a concrete implementation plan. Such an explanation presumes that those who are further from their goal tend to have an abstract construal of goal implementation, and further, a mismatch in construal level can lead to emotional distress. However, although an abstract construal has been shown to result from temporal and social distance, the relationship between construal level and goal distance (without an explicit temporal correlate) is an interesting question that remains to be examined in the construal literature.

A second limitation of the current studies is that, although in this research we focused on explaining the negative effect of planning on those in poor goal standing, questions remain regarding the effect of planning for those in good goal standing. Previous research suggests that planning generally has positive effects on self-regulation due to its cognitive properties such as greater accessibility for positive behavior, implemental mind-set, and rational decision making. Thus, it might be expected that, without the negative emotion of distress engendered by planning, the net effect of planning for those in good goal standing should be positive. Additionally, it is possible that, not only is there no negative emotion of distress but in fact a positive emotion, such as confidence or cheerfulness, might be produced by planning for these individuals. Indeed, we found directional support for a positive effect of planning under good goal standing in all our studies. The effect was significant in studies 2, 3, and 5 and marginally significant in study 4. Thus, more research is needed to illuminate the exact nature of the positive effects of planning on self-control for those in good goal standing and to identify the conditions in which the effect is stronger versus weaker.

Third, most of our studies involved a self-regulation choice shortly after planning. The one exception is study 1, which extended for months. Thus, one question to be further tested is how long the negative motivational impact of planning lasts for those in poor goal standing. If it indeed lasts a relatively long period of time, as study 1 suggests, research is also needed to examine the exact mechanism(s) by which such effect is perpetuated over time. For example, one possibility is that the emotional distress from planning is simply quite strong and does not dissipate quickly. Another possibility might be that the initial breakdown of commitment can even be exaggerated over time through a “what the heck” type of mechanism (Polivy and Herman 1985; Soman and Cheema 2004). That is, once the commitment is breached, one might throw one’s hands in the air and decide to give up on the goal entirely. Further research might also compare the relative longevity of the positive cognitive effect of planning against the negative emotional effect of planning and examine whether in the long run the net effect of planning tends to be positive or negative.

Finally, future research can further test the robustness and implications of these effects in the field, particularly in areas with significant social welfare and policy implications. For example, future research might examine the effect of planning on savings behavior of low-income households—consumers who naturally have low levels of accumulated savings and for whom planning might make the goal of accumulating savings seem even more difficult. Such findings might contribute to recent theorizing regarding the psychology of savings behavior among the poor. In particular, a poverty trap is sometimes observed such that the very poor do not tend to save, even though accumulating savings is their way out of poverty (Mullainathan and Shafir 2009; Soman 2012). An understanding of their psychology toward various self-regulation tools such as planning can help to aid the design

of more effective interventions to help these consumers get out of poverty. For example, our research suggests that making concrete plans for those in poverty might ironically backfire and demotivate; however, planning might become beneficial, if these individuals focus on more proximal (hence, smaller), rather than distant, large savings goals.

The Art and Science of Planning

This research has significant implications for the design and use of planning procedures for the purpose of behavioral intervention. In particular, this research highlights the role of goal standing in self-regulatory behavior. The message from this research is that planning cannot be considered and conducted in isolation. Other self-related factors, most notably a positive self-perception of goal standing, need to be in place for planning to have a beneficial effect. As demonstrated in study 5, if a person does not have a positive self-perception in the goal domain on a chronic basis, a positive self-assessment could be temporarily introduced at the time of planning to similar effect. Further, this self-assessment needs to be specific to the goal domain, rather than referencing global self-esteem. Other mechanisms to combat potential distress from planning may include making one’s long-term goal appear less distant and daunting, for example, by breaking the larger goal down to smaller subgoals and focusing on achieving one subgoal at a time.

Additionally, although not tested in this research, other factors that may help make planning work advantageously for the individual include expert guidance and more rigorous reinforcement and monitoring systems to accompany planning. For example, under expert guidance, one may tailor one’s plan to one’s own habits and abilities, thereby making the plan easier to follow. Further, “lock in” mechanisms, such as stocking one’s fridge only with planned items or bringing one’s own snacks, as well as substantive punishments for deviating from the plan, may also help secure the benefits of planning. The effects of all these mechanisms and their interactions are rich grounds for future research.

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