Research Report

Counteractive Self-Control

When Making Temptation Available Makes Temptation Less Tempting

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ABSTRACT—We propose a self-control analysis of the role of availability in valuation. We explored the hypothesis that, when temptation becomes available, counteractive self-control processes render it less valuable. We found evidence for devaluation of available temptation among gym users before they choose to forgo an unhealthy snack rather than after they make their choice (Study 1), and among students evaluating leisure activities when their decision to enroll in an uninteresting class is reversible rather than irreversible (Study 2).

Suppose you are on a diet, yet you have found yourself in a restaurant contemplating the dessert menu. You observe a dessert cart in the distance. Would the napoleon appear more pleasurable if it were in front of you, or would it seem better if it remained in the distance?

Current theories of valuation do not provide an unequivocal answer. Making tempting stimuli available might increase valuation. Zajonc (1968) provided evidence for a positive association between availability and value: "The mere repeated exposure of the individual to a stimulus is a sufficient condition for the enhancement of his attitude toward it" (p. 1; see also Bornstein, 1989; Harrison, 1977). Subsequently, research on goal pursuit (Shah & Kruglanski, 2002) showed that presentation of a means for goal pursuit implicitly activates the goal toward which the means is instrumental. Making a stimulus available would then activate any goals toward which the stimulus is instrumental. With the goals activated, the stimulus holds more utility, and so it becomes more valuable (Ferguson, 2007; Ferguson & Bargh, 2004).

However, making temptations less available might also render the temptations more desirable. Reactance theory (J.W. Brehm, 1966; S.S. Brehm & Brehm, 1981) and commodity theory (Brock, 1968) posit that decreasing availability of a stimulus increases its perceived value. According to reactance theory, this forbidden-fruit effect would operate as a function of the individual's negative reaction to constraints on the individual's freedom. According to commodity theory, the effect is driven by the scarcity principle for appraising value (Cialdini, 1984); the scarcer an object is, the more value it has.

COUNTERACTIVE VALUATION AS A FUNCTION OF TEMPTATION AVAILABILITY

We propose a self-control analysis of the role of availability as a determinant of value. Self-control dilemmas are situations wherein individuals' higher-order goals, offering delayed benefits, conflict with lower-order goals, offering immediate benefits (Baumeister, Heatherton, & Tice, 1994; Loewenstein, 1996; Metcalfe & Mischel, 1999). Critically for a self-control dilemma, pursuit of the lower-order goal is mutually exclusive with that of the higher-order goal, and vice versa. For example, procrastinating implies work not done, and an affair may be at the expense of a happy marriage. Although short-term interests may tempt individuals to stray from otherwise dominant long-term goals (Rachlin, 1997; Thaler, 1991), people do not always act as slaves to instant gratification. On the contrary, often mindful of temptation, individuals proactively employ self-control strategies to guide behavior toward long-term interests (Gollwitzer & Moskowitz, 1996; Metcalfe & Mischel, 1999).

Counteractive self-control theory describes these proactive self-control strategies (Fishbach & Trope, 2005; Trope & Fishbach, 2000). The theory postulates that self-control involves asymmetric shifts in subjective valuation of stimuli; individuals in self-control dilemmas dampen their valuation of temptations while boosting their valuation of goals. The net counteractive effect is that the value of the goal relative to the temptation is higher, increasing the likelihood of resolving the self-control dilemma in favor of goal pursuit. Furthermore, asymmetric shifts increase as a function of

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the strength of temptation; the stronger the temptation, the more likely individuals are to devalue it relative to the goal.

The effect of availability of temptation on valuation may then depend on counteractive self-control processes. Specifically, increasing availability of temptation in the face of opposing higher order goals will cause counteractive devaluation of temptation and bolstering of goals. Available temptations threaten goals more than unavailable temptations, and are thus more likely to activate counteractive processes to promote goal pursuit. Consequently, available temptations will seem less valuable and less tempting.

We tested this prediction across two studies, examining evaluation of temptations in domains of dieting (fatty foods) and academics (leisure activities). One way to operationalize availability is by the presence versus absence of temptation. However, this procedure leaves the possibility that people choose to forgo temptation before evaluating the options, and so their devaluation could reflect postchoice dissonance reduction (Aronson, 1997; Festinger, 1957) rather than prechoice self-control processes. Accordingly, we operationalized availability as having opportunity to choose between temptation and goal pursuit versus just having had the opportunity to choose. For example, if the diner is about to choose between fruit salad and a napoleon, then the tempting dessert is readily available, merely depending on choice. However, if the dieter has just chosen to have fruit salad, then the self-control dilemma is no longer present, and so self-control processes would cease. Whereas dissonance reduction takes place after choice, self-control occurs before choice, ceasing when choice renders temptation unavailable.

We also operationalized availability as choice reversibility. Naturally, many choices are reversible. If the diner chooses to have fruit salad, but the opportunity to switch to the napoleon is still present, then self-control conflict persists and with it self-control processes. Across these two operationalizations of availability, we predicted devaluation of available but not unavailable temptation.

STUDY 1: HEALTHY EATING AND TEMPTING CHOCOLATE

We predicted that individuals would motivate choice before choosing by counteractively devaluing temptation and bolstering goals, but that self-control processes would disengage when a choice that could not be undone was made. In Study 1, health-conscious participants chose health bars over unhealthy chocolate bars. We expected that those who rated these choice options before choosing would boost their valuation of health bars while dampening their valuation of chocolates. This pattern should attenuate after choice. In dissonance terms, we predicted a reverse spreading of alternatives (Aronson, 1997; J.W. Brehm, 1956), namely, that the gap between the ratings of the two options is greater before rather than after choosing.

Method

Participants

Participants were 34 females (mean age = 21.6 years) at a gym facility. Another 9 participants did not select the health bars. They were omitted from further analysis because counteractive valuation by those who did not choose goal pursuit cannot be distinguished from postchoice justification.

Procedure

Study 1 employed a 2 (food: health vs. chocolate bars) × 2 (choice: before vs. after choice) mixed factorial design. Choice order varied between subjects, whereas food type varied within subjects.

As participants were exiting a gym facility, they were shown one plate with three health bars and one plate with three chocolate bars. The two food types were selected for the experiment because choosing between them represents a self-control dilemma for gym users, who tend to make healthy choices. The experimenter informed participants that they would be given a choice between either three health bars or three chocolates. Participants rated each type of food just before or after choosing (and before tasting). Specifically, they rated on a 160-mm scale the perceived appeal of the bars, and how much they would enjoy eating the bars. We counterbalanced the order of the ratings of health bars and chocolates.

Results and Discussion

We averaged the value ratings for the two items to compute an index for positive valuation of the food, $r_{\text{health bar}} = .70$, $r_{\text{chocolate}} = .77$. A Food Type × Choice analysis of variance of the composite food ratings yielded a main effect for target food, $F(1, 32) = 4.79$, $p_{\text{rep}} = .93$, $d = 0.77$, and no effect for choice. As predicted, this analysis yielded a two-way interaction, $F(1, 32) = 4.09$, $p_{\text{rep}} = .92$ (see Fig. 1). Among those who completed the ratings before choosing, health bars ($M = 102.19$, $SD = 19.58$) were valued higher than were chocolates ($M = 74.06$, $SD = 32.44$), $t(15) = 2.82$, $p_{\text{rep}} = .96$, $d = 1.05$. However, there was no difference between ratings of
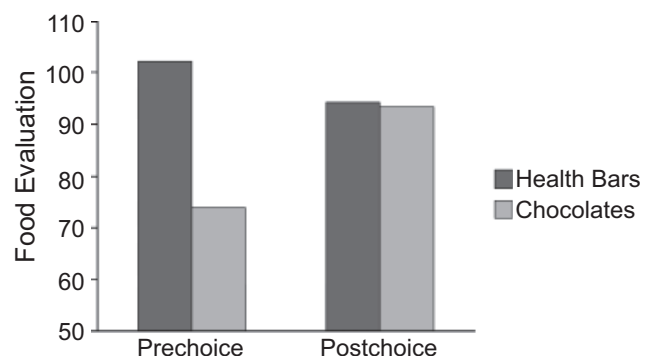
Fig. 1. Evaluation of healthy and tempting food options before versus after choosing between them. Participants' ratings of the perceived appeal of each food and how much they would enjoy eating it were averaged together to compute an index for positive valuation of the food.

health bars ($M = 94.22$, $SD = 26.11$) and chocolates ($M = 93.11$, $SD = 39.80$) among those who completed the ratings after choosing, $t(18) = .124$, $p_{rep} = .53$, $d = 0.03$.

Study 1 yielded support for our theorized relationship between availability and value. Self-control, which is activated before choosing between the foods, boosted the value of the health bars relative to the unhealthy chocolates, but this pattern diminished after having chosen between the foods.

This study examined settings where choice was perceived as final or irreversible. However, not all choice settings share this feature. Some choices may be reversed at any time. We predicted that counteractive valuation would occur for reversible choices to motivate goal pursuit, but not for irreversible choices, because the nonchosen alternatives are rendered unavailable.

STUDY 2: TAKING COURSES AND TEMPTING LEISURE

We employed a paradigm of reversible versus irreversible choice to test whether students, who wish to motivate themselves to not drop an uninteresting course, devalue tempting leisure activities (such as partying and socializing), the pursuits of which are generally inconsistent with academic goals. Devaluation of tempting activities should then increase as a function of the strength of the temptation to stray from the goal. Assuming that the temptation to stray from boring classes is stronger than that for interesting classes, devaluation of leisure activities should increase with the degree to which the class is uninteresting.

Method

Participants
Participants were 105 M.B.A. students (35 women, 70 men; mean age = 28.2 years) at the University of Chicago.

Procedure
Study 2 employed a between-subjects design with the single factor of choice (reversible vs. irreversible). Participants completed the study some days before or after the school deadline to change course registration (Week 3). Presumably, students experience course registration as a reversible choice before the deadline, but as an irreversible choice after the deadline.

Participants completed a questionnaire on their academic and extracurricular activities. Depending on experimental condition, the questionnaire reminded participants of the deadline ahead or the deadline that had passed. They first described and rated the most recent class they had attended. Participants had attended a heterogeneous sample of classes. They rated on a 150-mm continuous scale how interesting they found their class. Because they were not yet reminded of leisure temptations, participants were not experiencing a self-control dilemma, and so we obtained their assessment of course interest in the absence of counteractive self-control processes.

The next part of the questionnaire assessed the value of leisure activities. Participants rated on 150-mm continuous scales how much they enjoyed a series of 11 leisure activities, such as partying, socializing with friends, watching movies, drinking, and on-line chatting.

Results and Discussion
We computed an index for the value of leisure temptations by averaging ratings of all leisure items for each participant ($\alpha = .69$). We tested the joint hypotheses that tempting leisure activities would be valued less just before the deadline to drop courses than after the deadline, and that this effect would be stronger for participants who had just attended a less interesting course.

To achieve this, we regressed value of leisure activities on the time of evaluation (a dummy variable taking 0 if the questionnaire was administered before the deadline to drop courses or 1 if administered after), the degree to which their most recently attended course was interesting, and the two-way interaction between these two variables. The regression was significant, $F(3, 97) = 3.37$, $p_{rep} = .95$, $R^2 = .09$.

We found that the time of evaluation predicted the value of leisure, $\beta = 1.11$, $t(97) = 2.51$, $p_{rep} = .96$, indicating that temptations were devalued before, relative to after, the deadline to drop the course. There was no main effect for the interest level of the course, $\beta = 0.19$, $t(97) = 1.12$, $p_{rep} = .78$. Critically, the Choice × Interest interaction predicted the value of leisure, $\beta = -0.96$, $t(97) = -2.10$, $p_{rep} = .93$. As Figure 2 illustrates, participants' tendency to devalue leisure before (vs. after) the deadline was more pronounced after attending less interesting courses than after attending more interesting courses.
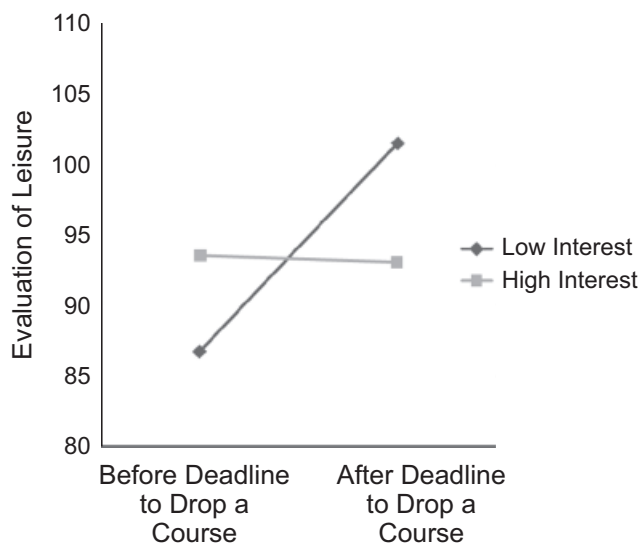

Fig. 2. Evaluation of leisure activities before versus after the deadline to drop university courses, as a function of participants' interest in their most recently attended course. The graph presents predicted evaluation of leisure activities at 1 standard deviation above and below the mean level of interest in the most recently attended course (see Aiken & West, 1991).

Study 2 complements the previous study in two important ways. First, it provides evidence for devaluation of available temptations when choice is reversible compared to when it is not. This effect is congruent with that found in Study 1, which explored the relative value of goal versus temptation stimuli. Whereas dissonance theory predicts greater devaluation of forgone alternatives when the choice is irreversible than when the choice is reversible, we found more devaluation of temptations before a final choice was made than after. Second, this study shows that counteractive devaluation varies as a function of motivation necessary to ensure goal pursuit. The more interesting a course is, the less effort is required to motivate pursuit of the course. Thus, individuals motivating pursuit of more interesting courses are expected to employ less counteractive self-control than those motivating pursuit of less interesting courses.

GENERAL DISCUSSION

We argue that the relationship between the availability of a stimulus and its value depends on counteractive self-control processes. When making a tempting stimulus available, counteractive processes make the temptation less attractive while rendering goal-related stimuli more attractive. We conclude that the relationship between availability of a stimulus and its value depends on two factors: the status of the stimulus as either a goal or a temptation, and the operation of counteractive self-control processes. When a stimulus is goal-related, making it available will render it more valuable. In contrast, when a stimulus represents a temptation, making it available will render it less valuable, given the presence of a conflicting goal.

Specifically, in Study 1, we found that counteractive valuation occurred before but not after choosing. Participants devalued chocolates relative to health bars before but not after choosing health bars. Then, in Study 2, we found that people devalued temptation for reversible but not irreversible choices. Participants devalued leisure activities before relative to after the deadline to drop courses for which they were registered. Because devaluation increases as a function of the motivation necessary for goal pursuit, devaluation of leisure activities was stronger for uninteresting courses, the pursuit of which required more motivation than that of interesting courses.

The inevitable questions arise as we consider the intuitively puzzling discovery that making temptations available makes temptations less tempting: Would dieters paradoxically benefit from waiters rolling the cart forward to their table rather than tucking it out of sight? Would the smokers actually benefit from making their cigarette packages more easily within reach? Our evidence for counteractive valuation of temptation suggests that the answer may not be the clear-cut "no!" compelled by intuition; counteractive valuation may offset the influence of temptation on behavior.

That is, counteractive devaluation of available temptation, and the likely corresponding bolstering of goal value, may prove sufficient to offset the psychological ease with which one may consume available temptation. On the one hand, the dessert next to you is within easy reach and so requires minimal effort (costs) for consumption, which increases likelihood of indulgence. On the other hand, the dessert on the cart next to your table is valued less than that on the cart in the next room due to self-control processes, which might undermine indulgence. Furthermore, there might be situations where counteractive valuation is relatively strong, but the cost of obtaining the psychologically unavailable temptation is relatively low. Then, there might emerge a crossover point, beyond which counteractive valuation more than offsets the psychological ease with which one may indulge. In such situations, making temptation available would also make one less likely to indulge.

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