

Counteractive Construal in Consumer Goal Pursuit

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The present research explores a self-control operation, namely, counteractive construal, that helps consumers resolve the conflicts between an important goal and a short-term temptation by altering the construal of the temptation. We propose that when experiencing a self-control conflict, consumers intentionally construe temptation as more damaging to the attainment of a long-term goal and use these distorted construals to help resolve the conflict in favor of the goals. Four studies in two self-regulatory domains (a dieting goal and an academic goal) provided converging evidence for the counteractive construal hypothesis. We found that people who were experiencing self-control conflict expected tempting food items to contain more calories or expected parties to take more time away from studying and were consequently less interested in consuming these temptations.

Consumers often face temptations in the pursuit of important long-term goals. For example, a dieter may be tempted by a delicious chocolate cake, and an aspiring student may be distracted by a fun and exciting party. Because the pursuit of such temptations potentially undermines the attainment of the goal, the presence of both the goal and the temptation constitutes a self-control conflict (Loewenstein 1996; Mischel 1974; Mischel, Shoda, and Rodriguez 1989; Rachlin 1996; Vohs and Heatherton 2000). The resolution of such conflicts, in turn, requires individuals to engage in self-control effort in order to maintain their goal pursuit (Fishbach, Friedman, and Kruglanski 2003; Metcalfe and Mischel 1999; Trope and Fishbach 2000).

Whereas previous research focuses on people's effort in suppressing the urge to yield to the temptation (e.g., Vohs and Heatherton 2000), relatively little is known about how one's cognition and construal of the options may influence one's success in resolving the conflict. In this research, we propose a self-control mechanism, namely, counteractive construal, that consumers employ when facing a self-control

conflict. Specifically, we propose that by perceptually exaggerating the extent to which the temptations may undermine the goal attainment, consumers are more likely to resolve the self-control conflict in favor of the long-term goal by avoiding the temptation. For example, we expect a dieter to estimate a tempting cake to contain more calories when the cake is available for consumption (vs. not available) and in turn become less interested in consuming the cake.

COUNTERACTIVE SELF-CONTROL

People exercise self-control when they anticipate that the attainment of a long-term goal may be jeopardized by obstacles, such as a short-term temptation (Gollwitzer, Bayer, and McCulloch 2005; Loewenstein 1996; Rachlin 2000; Thaler and Shefrin 1981). For example, a shopper who tries to save up for a house may need to exercise self-control when he or she descends into a mall full of "clearance" signs, and a dieter may put forth a similar effort when an office mate stops by to kindly offer a piece of moist chocolate cake. In response to such situations, consumers engage in counteractive self-control (Fishbach and Trope 2005; Trope and Fishbach 2000), so that they can overcome the temptations to ensure successful attainment of the goal. The experience of a self-control conflict, in other words, triggers people's self-control operations.

Past research examines different self-control operations that can help resolve the conflict. Some of these operations use behaviors to change the choice situation such that yielding to temptations will become more inconvenient or more difficult. For example, when anticipating self-control con-

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flicts, people voluntarily impose penalties for failing in goal pursuit or make rewards contingent on success (Ainslie 1975; Ariely and Wertenbroch 2002; Becker 1960). Similarly, they preemptively remove tempting items (e.g., cigarettes, high-calorie food) from their vicinity or make self-control acts irreversible (Ainslie 1975; Green and Rachlin 1996; Thaler 1991; Wertenbroch 1998). Other self-control operations involve altering the mental representation of the choice situation, rather than the actual situation, to reduce the urge to succumb to the temptation. For example, research shows that people form “cool,” abstract, or psychologically distanced representations of temptations, which serve to attenuate the impact of appetitive temptations on choice (Fujita et al. 2006; Kross, Ayduk, and Mischel 2005; Metcalfe and Mischel 1999; Mischel and Ayduk 2004).

While these strategies either behaviorally modify the availability of temptations or change the level of abstractness in mental representations of the options, it is not clear whether consumers’ cognitive assessments of the items involved in the conflict remain unchanged in the conflict. Specifically, because the resolution of self-control conflicts involves a trade-off between a long-term goal and a temptation that provides immediate pleasure at the cost of the goal, we ask the question whether people can directly modify their construal and assessments of the cost of temptation to help resolve the conflict, and whenever the cost of pursuing temptation for the goal attainment increases, consumers should be less likely to yield to the temptation. Therefore, we expect that consumers’ self-control effort may alter the construal of the temptations and exaggerate their negativity value, so that the conflict would be resolved in favor of the goal.

COUNTERACTIVE CONSTRUAL

Despite consumers’ wish to perceive the world in an accurate and objective way, a large body of research has demonstrated that individuals’ motivational states have a profound influence in shaping their cognition and judgments, including evaluations of other people, estimated likelihood of an event, and interpretations of ambiguous stimuli (Balcetis and Dunning 2006; Dunning 2001; Kunda 1990). For example, the motivated reasoning framework suggests that directional goals affect one’s reasoning by influencing which information will be considered in the reasoning process (Kunda 1990; see also Kruglanski 1980; Kruglanski and Klar 1987). For instance, individuals who wish to do well in school tend to remember more cases in which they did do well and thus conclude that they are indeed academically successful.

Because one’s cognition and judgments are heavily influenced by one’s motivational state, it is possible that a person’s motivation to maintain his or her goal pursuit would alter the construal and assessment of the options when these two conflict with each other. To resolve such conflicts in favor of the goal, one could either enhance the value of the goal or decrease the value of the temptation. Indeed, motivational states have been shown to change the value of

goal versus temptation-related items. For example, people may increase the value of attaining certain goals by elaborating on what makes these goals important and desirable (Bandura 1989; Kuhl 1984).

Compared with desirable goals, temptations are special because they are positive by themselves and acquire the status of temptation only when evaluated against another higher-order goal (e.g., Fishbach and Zhang 2008). Therefore, the negative value of a temptation should be determined by the extent to which it undermines the attainment of the higher-order goal. For example, a Friday night party is positive and desirable by itself, but when it interferes with the pursuit of a more important goal of studying for an exam, it acquires negative value and becomes a temptation that one would wish to avoid. The negativity of a temptation, accordingly, should be consistent with the extent to which it undermines the attainment of the goal. Therefore, one may help resolve the conflict by augmenting the perceived cost of pursuing the temptation, such that it poses a greater threat to the attainment of the more important goal and would thus be avoided. For example, if a person construes a cookie to contain more calories, it becomes a greater threat to the success of a dieting goal, so the person should be more likely to avoid this cookie. We call this alternation of cognitive construal and assessment of tempting options in a self-control conflict the counteractive construal, and we argue that it is an instrumental response that helps protect the attainment of important consumer goals.

COUNTERACTIVE CONSTRUAL AS A SELF-CONTROL MECHANISM

Based on our conceptualization, the counteractive construal is a self-control response that helps individuals maintain their goal pursuit when facing a dilemma. Therefore, we expect this operation to occur only when consumers experience the conflict between a long-term goal and a short-term temptation. The strength of the counteractive operation, accordingly, depends on the intensity of the conflict: when the conflict is minimal, such as when the goal is unimportant or the temptation is inaccessible, counteractive construal is unlikely to occur. For example, for a person who cares little about being fit, facing a cookie should not elicit counteractive construal, because this person experiences little conflict, and thus the need for self-control is minimal. However, an intensified conflict, such as when the goal becomes more important or the temptation becomes available for consumption, should increase the need for self-control; thus the strength of counteractive construal increases accordingly to protect the attainment of the important goal. For example, for a committed dieter, facing a cookie should elicit more counteractive construal because the cookie poses a bigger threat to the important goal. Similarly, a person who desires to lose weight would engage in counteractive construal when facing a tempting yet unhealthy burger, but not when facing a healthy salad that does not threaten the weight loss goal.

This conceptualization is consistent with prior findings in

the substitutability between self-control and external control (e.g., Fishbach and Trope 2005). These results suggest that people exercise self-control only when there is a need for such effort. Whenever there are externally imposed controls that can help protect the goal attainment, self-control becomes unnecessary because the external controls would be sufficient to ensure that the long-term goal would not be undermined by the temptation (e.g., Kruglanski et al. 2002). Therefore, we expect individuals to engage in counteractive construal only when self-control is the only means to protect the goal attainment; in situations where external forces can help resolve the conflict, counteractive construal should not occur. For example, dieters are unlikely to exaggerate the calorie content of a cookie that they are allergic to because it poses little threat to their goal.

Because of the instrumental nature of counteractive construal, we further expect that it should occur only when self-control is effective in helping avoid the temptations. In situations where self-control is of no value in fending off the temptation, we expect no counteractive alterations in the assessment of the temptation. For example, when the consumption of an unhealthy food item is mandatory, consumers are unlikely to engage in counteractive construal because it does not help them resolve the conflict.

While other strategies emphasize modifying the choice situation (Thaler and Shefrin 1981; Wertenbroch 1998), enhancing the affective evaluation of the goal (Kuhl and Beckmann 1985; Mischel 1974), or changing the type and abstractness in mental representation (Fujita et al. 2006; Mischel and Ayduk 2004), counteractive construal depicts an operation that works on the concrete level of mental construal and functions by altering the cognitive assessment of options. In particular, it focuses on the option that poses short-term costs to the attainment of a long-term goal, and because an option acquires the status of temptation only when it conflicts with a higher-order goal, it further highlights the responsive nature of the operation. Therefore, as an instrumental mechanism elicited by the experience of conflict, counteractive construal reflects a motivated cognition process that facilitates conflict resolution by altering the information input of self-control decisions.

In summary, we propose that consumers engage in counteractive construal when they experience the conflict between a short-term temptation and an important long-term goal. By perceptually augmenting the negative impact of the temptation on goal attainment, consumers would be more likely to resolve the conflict in favor of the long-term goal and avoid the temptation.

THE PRESENT RESEARCH

Four studies tested the present predictions. Across all studies, consumers faced a dilemma between succumbing to an immediately gratifying temptation and maintaining their goal pursuit, and we measured their perceptions of the tempting targets to test the counteractive construal hypothesis. Specifically, study 1 tested whether consumers with a strong (vs. weak) dieting goal would construe tempting food

items to contain more calories, depending on whether they expected to have an opportunity to consume the tempting items or not. Study 2 shifted domain and examined whether undergraduate students who were thinking of their academic goals (vs. not) would estimate a party to last longer and are therefore more likely to skip the party. Study 3 further tested whether consumers with (vs. without) an accessible dieting goal would construe tempting drinks to be more calorie laden, depending on whether they expected to consume the drink or not at a later stage, and further tested whether such construals affect their actual consumption. In our final study 4, we further manipulated the effectiveness of self-control by dictating the amount of consumption and tested whether people alter the construal of tempting food items only when self-control is instrumental in resisting temptation.

STUDY 1: STRENGTH OF A DIETING GOAL

The purpose of this study is to test whether consumers who are committed to a dieting goal engage in counteractive construal when they experience a conflict between the goal and an accessible temptation. We manipulate the experience of conflict by varying the availability of temptation and expect that only an available (vs. unavailable) temptation would activate a dieter's counteractive construal.

Method

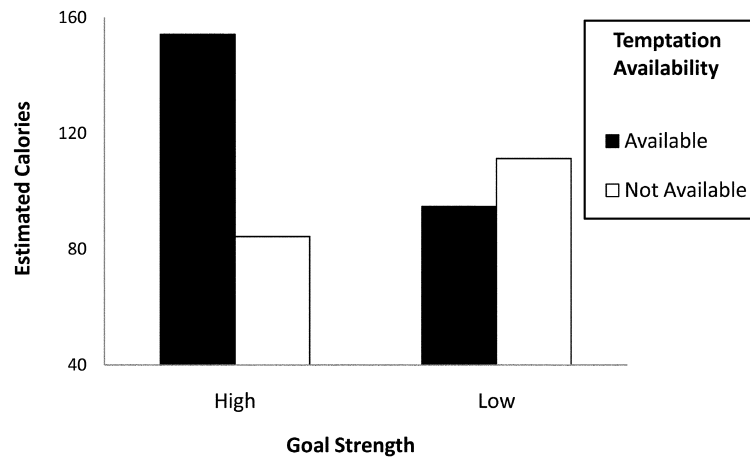
Thirty-eight female undergraduates from the University of Texas at Austin participated in the study. Because females are more concerned about weight and body shape, we purposefully included only female participants for this study (e.g., Myrseth, Fishbach, and Trope 2009).

This study used a goal strength \times temptation availability (available vs. unavailable) two-factor design, where temptation availability was manipulated as a between-subject factor and the strength of the dieting goal was measured as an individual difference factor. Participants were recruited at a student activity center and completed the experiment in a separate room. Participants were given the cover story that we were interested in consumers' abilities in evaluating various properties of products and were told to evaluate two items: a freshly baked cookie and a pack of pocket-sized tissue.

All participants were first presented with a fresh cookie placed in the middle of a white plate and were also given a survey that asked them a few questions about the cookie. Before participants started the survey, those in the available temptation condition were informed that they had the option to take a fresh cookie from us as a complimentary gift after finishing the survey. This information was also printed on top of the survey these participants were filling out. In contrast, those in the unavailable temptation condition were not given such information and were simply asked to evaluate the cookie.

The survey included questions about the physical features of the cookie (e.g., dimensions, weight) as well as those

FIGURE 1
ESTIMATED CALORIES AS A FUNCTION OF GOAL STRENGTH AND TEMPTATION AVAILABILITY



about the nonphysical features (e.g., sweetness, texture). Of key interest to us is the number of calories participants construe the cookie to contain (“How many calories do you think this cookie contains?”). After evaluating the cookie, participants went on to evaluate the dimensions and weight of the tissue box to conceal the real purpose of the study.

After finishing this section of questions, participants were asked to provide some demographic information in the final section of the survey. In this section, participants answered some routine demographic questions such as gender and age and also answered a few questions about their interest and life conditions. Among these questions, we asked participants about the strength of their dieting goal, measured by the question “Are you concerned with being slim?” (7-point scale, 1 = not at all and 7 = extremely). Other filler questions (e.g., “Is it difficult to pay attention in class?”) were also used to conceal the purpose of these questions.

Results and Discussion

We conducted a regression analysis on the estimated calorie content using two predictors, the availability of temptation and the strength of participants’ dieting goal, as well as their interaction. This analysis yielded a main effect of the strength of the dieting goal ($\beta = 6.64$, $t(31) = 1.08$, $p < .05$), indicating that the strength of the dieting goal increased the estimated calorie content of the cookie. Most important, in support of our hypothesis, this analysis yielded a temptation availability \times strength of dieting goal interaction ($\beta = 11.98$, $t(31) = 2.01$, $p = .05$). Following the spotlight analysis procedures (Irwin and McClelland 2001), we explored the impact of temptation availability on the estimated calorie content of the cookie depending on the strength of participants’ dieting goal. Participants with a strong dieting goal (one standard deviation above the mean) estimated the cookie to contain more calories when they

were told that they could take a cookie later on ($M = 154.22$) than when they did not know the cookies were available ($M = 84.36$; $\beta = 34.93$, $t(31) = 2.23$, $p < .05$). However, for individuals with a weak dieting goal (one standard deviation below the mean), temptation availability did not differentially affect calorie estimations ($\beta = -8.28$, $t(31) = -.56$, NS). See figure 1.

To better understand the interaction, we conducted an additional analysis that compared the slopes of dieting goal strength at different levels of temptation availability. For those who were told that they would have an option to take one cookie at the end of the study, the strength of their dieting goal positively predicted the number of calories they estimated the cookie to contain ($\beta = .58$, $t(18) = 3.03$, $p < .01$), such that those with strong dieting goals were more inclined to construe the cookie as containing more calories. In contrast, for those who were not offered the option to take a cookie and thus did not experience the self-control conflict, there was no such relation ($\beta = -.17$, $t(13) = -.13$, NS).

To ensure that the observed pattern reflects a target-specific self-control operation rather than a magnitude effect, we also analyzed participants’ estimates for the filler item (tissue box) and found no impact of availability on any of the answers (t 's < 1 , NS).

These results provided initial support for the counteractive construal hypothesis: when consumers experience a conflict between their long-term goal and a short-term temptation, they engage in self-control such that the temptations are construed as more threatening to the important goal. The strength of such operations corresponds to the intensity of the conflict, such that a strong (vs. a weak) long-term goal evokes more pronounced counteractive construal when one faces the same temptation.

One question that is not clear in the initial study is whether pronouncing a cookie as calorie rich means it is something

consumers want to avoid. After all, a high-calorie cookie could also mean that it would be tasty and attractive (e.g., Raghunathan, Naylor, and Hoyer 2006). We proposed that counteractive construal is a self-control operation that helps people maintain their goal pursuit, and if so, the construed cost of the temptation should decrease one's intention to consume the temptation. Our next study will test this hypothesis.

STUDY 2: STRENGTH OF AN ACADEMIC GOAL

Undergraduate participants estimated the duration of a party when shown a flyer that invited them to a party either before or after they reported their desired grade point average (GPA). We predicted that students who read the party invitation after reporting their desired GPA would experience a self-control conflict and expect the party to be longer and, in turn, show lower interest in attending the party. Students who read the flyer before they reported their desired GPA should experience less of a self-control conflict; thus we expect neither counteractive construal nor changes in their interest in the party.

Method

Ninety-three undergraduate students (54 women, 39 men) participated in the study and completed the experiment in an online experiment session. The study used a self-control conflict \times strength of academic goal two-factor design, where self-control conflict was manipulated as a between-subject factor and the strength of the academic goal was measured as an individual difference factor.

The self-control conflict in this study was operationalized using the order of questions: participants answered school-related questions either before or after they were shown a party invitation. By showing participants the party invitation after soliciting school-related information, we expect them to experience a self-control conflict between the long-term academic goal and the short-term temptation of attending the party when they read the invitation, which in turn triggers the counteractive construal. Conversely, if participants view the party invitation and provide their estimates before answering school-related questions, they should not experience the conflict and counteractive construal should not occur.

Specifically, after commencing the experiment, participants in the self-control conflict condition were first asked to provide some routine demographic information and answer a few school-related questions. These questions included their major in college, year in school, and, most important, their desired GPA. After answering these questions, participants clicked "continue" and were shown a party invitation. The onscreen instructions explained that the experimenters were interested in how students evaluate parties and were going to show them a flyer for a party on campus that was scheduled 3 days from the experiment date. The invitation, appearing on a colorful background, included information about the time and the venue of the party as

well as other details (e.g., available drinks and snacks). After viewing the invitation, participants were asked to answer a series of questions about the party. Of key interest to us was their estimates of the duration of the party ("How long [in hours] do you expect the party to last?") and their interest in attending the party ("How likely are you to attend this party?" on a 7-point scale: 1 = definitely will not and 7 = definitely will). These questions were embedded among filler questions (e.g., "What time will the party actually start?" and "How likely will you tell your friends about this party?"). In contrast, participants in the no self-control conflict condition saw the party invitation and answered the same party-related questions first, before they moved on to the demographic information section and answered the routine questions about gender and age, as well as the school-related questions.

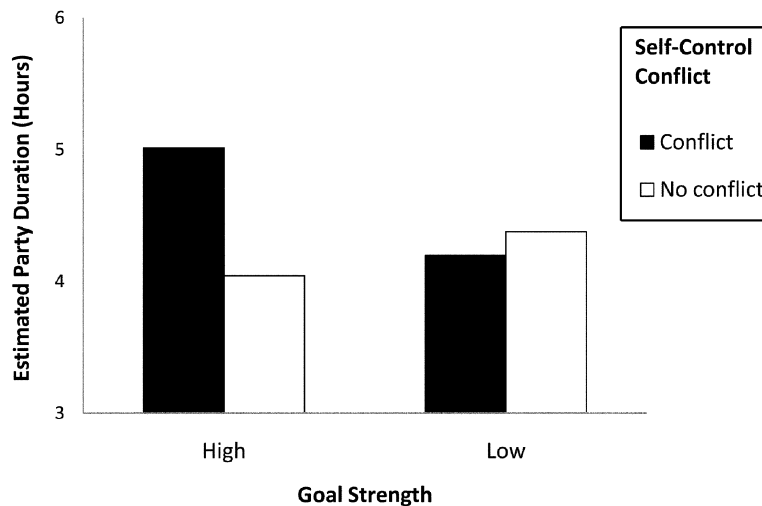
Results and Discussion

A regression of participants' estimated duration of the party on their desired GPA, experience of self-control conflict, as well as the interaction between these two predictors first yielded a main effect of the strength of academic goal ($\beta = .76$, $t(89) = 2.32$, $p < .05$), indicating that participants with a strong academic goal expected the party to be longer. There was also a main effect of experienced conflict ($\beta = 4.43$, $t(89) = 2.09$, $p < .05$), suggesting that participants who answered school-related questions first construed the party to be longer than those who answered these questions at the end of the survey. Most important, we found the predicted self-control conflict \times goal strength interaction ($\beta = 1.55$, $t(89) = 2.17$, $p < .05$). Using the spotlight analysis procedures, we found that participants with a strong academic goal (one standard deviation above the mean) expected the party to last longer if they answered school-related questions first (and thus experienced the self-control conflict; $M = 5.01$ hours) than if they did not answer the school-related questions (and thus did not experience such conflict; $M = 4.04$ hours; $\beta = 0.49$, $t(89) = 2.60$, $p < .05$). In contrast, for participants with a weak academic goal (one standard deviation below the mean), the experience of self-control conflict did not differentially affect estimations of party duration ($\beta = -.09$, $t(89) = -.48$, $p > .5$). See figure 2.

Similarly to study 1, we conducted an additional analysis that explored the slopes of the strength of the academic goal on the estimated duration of the party depending on whether participants were experiencing the self-control conflict or not when predicting the party duration. When participants viewed the party flyer after answering the school-related questions (and thus experiencing self-control conflict), their desired GPA positively predicted the expected duration of the party ($\beta = .28$, $t(45) = 1.96$, $p < .06$). In contrast, when participants viewed the party flyer before they answered the school-related questions (and thus did not experience the self-control conflict), their ideal GPA did not predict the estimated party duration ($\beta = -.15$, $t(44) = -1.02$, NS).

FIGURE 2

ESTIMATED PARTY LENGTH AS A FUNCTION OF GOAL STRENGTH AND SELF-CONTROL CONFLICT



What are the consequences of the altered construal in people's decisions? If counteractive construal is indeed a self-control operation that helps protect goal attainment, it should decrease individuals' interest in the temptation. Therefore, we expect that the duration of the party should decrease, rather than increase, students' interest in the party. Indeed, for participants who experienced the self-control conflict between the academic goal and the tempting party, the estimated duration negatively predicted their intention to attend the party ($\beta = -.42$, $t(45) = 3.08$, $p < .01$). In contrast, for participants who did not experience the self-control conflict, there was no such relation ($\beta = -.06$, $t(44) = -.42$, NS). This pattern between the construed party duration and participants' intentions to attend the party confirms the counteractive construal as a self-control response that helps people overcome the temptation and maintain their goal pursuit.

So far we have tested the counteractive construal hypothesis in two separate self-control domains and demonstrated that the cognitive alternations of the construal of targets are indeed instrumental responses that help resolve the conflict in favor of the long-term goal. However, one potential concern with the current analysis is that in both studies we relied on individual difference measures in determining the strength of one's long-term goal. It is therefore possible that instead of participants' goal strength influencing their construals of the temptations, one could argue that it was the construed temptation that affected one's reported strength of the goal. Also, such individual differences may be correlated with other variables. For example, in study 2, students' GPA may be correlated with their general capabilities, including their knowledge about parties and ability to make accurate predictions, which may have contributed to the observed effects. To address these potential concerns, we directly manipulate the accessibility of one's personal

goals in our next study to further test the counteractive construal hypothesis.

STUDY 3: ACCESSIBILITY OF A DIETING GOAL

Study 3 directly manipulated the experience of self-control conflict by changing the accessibility of the dieting goal for participants and tested their perceptions of a tempting drink depending on whether they anticipate having the option to consume it or not. We expect that participants with an accessible dieting goal would experience a self-control conflict when knowing that they would have the chance to consume unhealthy drinks and sense the need to resist the temptation. In response, they exaggerate the harms of the temptation for pursuing this long-term goal and estimate the drinks to contain more calories.

A second objective of this study is to explore whether counteractive construal as a self-control mechanism could influence people's actual consumption. We expect that when people construe the temptation to be more costly for goal attainment, their actual consumption would drop accordingly. This study also tests this hypothesis.

Method

Eighty-six female undergraduate students at the University of Texas at Austin participated in the experiment in exchange for monetary compensation. The experiment used a 2 (dieting goal prime: yes vs. no) \times 2 (temptation availability: available vs. unavailable) between-subject design. Participants were recruited in a student activity center and randomly assigned to the experimental conditions. They completed the study in a quiet experiment room nearby.

Participants were given the same cover story as the earlier study and told that we were interested in consumers' abilities in evaluating various properties of products. Because environmental cues can activate people's chronic goals (Bargh 1997; Bargh and Chartrand 1999), we manipulated the accessibility of participants' dieting goal by changing the settings of the small experiment room: in the dieting goal prime condition, participants walked into the experiment room and were greeted by three large posters (18 × 24 inches) depicting active and fit females (e.g., Fishbach, Dhar, and Zhang 2006). One poster showed a female model wearing a blue bathing suit running on a beach, another depicted a female model wearing shorts and a tee shirt stretching on the sand, and the third poster showed a female model jogging in the woods. Those posters were displayed on the wall slightly above eye level to make sure that participants noticed them during the entire time of the experiment. No information was given about these posters, and no participants raised any suspicion. In contrast, in the no goal prime condition (control group), three posters of nature sceneries (e.g., trees and mountains) were used instead.

All participants were told that the study session involved two separate studies. We first informed all participants that the first study would be about consumers' abilities to evaluate properties of some products, and they would evaluate a few products, including a sugared soda (pretested to be highly desirable, $M = 5.92$ on a 7-point scale, 1 = not desirable at all and 7 = very desirable) and other control products such as bottled water. After explaining the rules for the first study, the experimenter went on to give details about the second study as a manipulation of temptation availability. Participants in the temptation available condition were told that the second study would ask them to provide their opinions on some shopping-related issues, and during the second study, the same kind of soda they evaluate in the first study would be served as a complimentary drink and they could drink as much as they would like to. In contrast, those in the temptation unavailable condition were told only that in the second study they would complete a survey on shopping-related issues.

After receiving the instructions, participants commenced the product evaluation task. The first item was a bottle of orange sugared soda (16.9 fluid ounces), and participants were asked to provide their estimates of a series of properties of this soda, including the number of calories it contains, among other filler questions such as volume and weight. After this product, we asked participants to evaluate other filler products to conceal the real purpose of the study.

Upon finishing the first study, participants moved to another table for the second study. This study required participants to complete a 15-page filler survey on shopping behaviors that would take about 10 minutes. Participants sat down to fill out the survey and were offered the same kind of soda they evaluated in the first study as a complimentary drink. All participants were handed a fresh bottle of the soda and were told that they could drink as much as they would like to; they could do so only in this room and must leave

the unfinished bottle on the table when exiting because no food or drinks were allowed in other areas of the building. Upon finishing the study, participants went to a different room for payment, where they were fully debriefed using a funnel debriefing scheme and thanked.

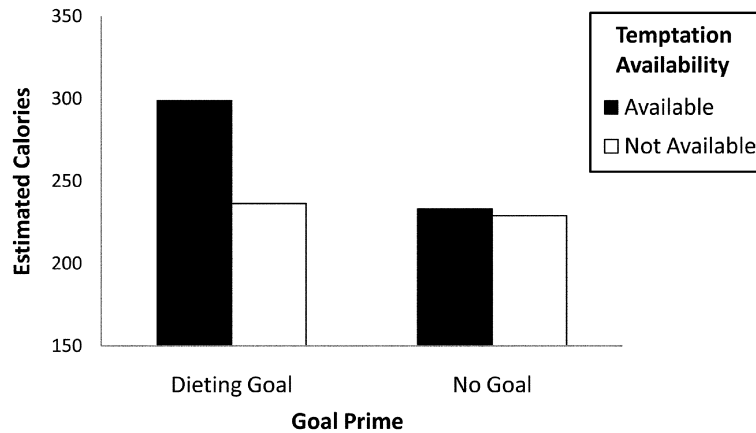
Results and Discussion

An ANOVA analysis of the number of calories participants construed the soda to contain yielded two main effects, the dieting goal prime ($F(1, 82) = 6.66, p < .05$) and temptation availability ($F(1, 82) = 5.52, p < .05$). These main effects were qualified by the predicted self-control conflict × temptation availability interaction ($F(1, 82) = 4.24, p < .05$). Participants whose dieting goal was made accessible and thus were experiencing a self-control conflict construed the soda to contain more calories when they expected it to be available for consumption ($M = 298.78$) than when they did not expect it to be available ($M = 236.36; t(43) = 3.13, p < .01$). However, when participants' dieting goal was not made accessible and thus they were not experiencing the conflict, the construed number of calories in the soda did not differ between those who expected to have an option to consume it later ($M = 233.10$) and those who did not ($M = 229.00; t(39) = .21, NS$). In addition, the post hoc Tukey test revealed that the participants whose dieting goal was made accessible and expected the drink to be available construed the soda to contain significantly more calories ($M = 298.78$) than the other three conditions (goal prime/temptation unavailable: $M = 236.36; p < .05$; no goal/temptation available: $M = 233.10; p < .01$; no goal/temptation unavailable: $M = 229.00; p < .01$), while the comparisons among the latter three groups were not significantly different (see fig. 3). This pattern confirmed that when consumers experience a self-control conflict, that is, when the goal is threatened by an available temptation, they engage in counteractive construal to exaggerate the cost of pursuing the temptation.

Does the counteractive construal of temptation influence the amount people actually consume when having the chance? To answer this question, we further analyzed the amount of soda participants consumed while they were completing the second study. We measured the remaining amount in the soda bottle to calculate the amount of soda consumed by the participants (in milliliters). An ANOVA of the amount of soda participants consumed yielded the predicted self-control conflict × temptation availability interaction ($F(1, 82) = 4.25, p < .05$). Specifically, participants whose dieting goal was made accessible and expected the soda to be available for consumption consumed less soda ($M = 30.77$ milliliters) than those who did not expect the soda to be available ($M = 83.80$ milliliters; $t(43) = -3.15, p < .01$). In contrast, when participants' dieting goal was not made accessible and thus they were not experiencing the conflict, the perceived number of calories in the soda did not differ between those who expected to consume it later ($M = 75.33$ milliliters) and those who did not ($M = 73.16$ milliliters; $t(39) = .10, NS$). Similarly to the findings

FIGURE 3

ESTIMATED CALORIES AS A FUNCTION OF GOAL PRIME AND TEMPTATION AVAILABILITY



in calorie estimations, the post hoc Tukey test revealed that the participants whose dieting goal was made accessible and expected the drink to be available consumed less ($M = 30.77$ milliliters) than in the other three conditions (goal prime/temptation unavailable: $M = 83.80$ milliliters; $p < .05$; no goal/temptation available: $M = 75.33$ milliliters; $p < .10$; no goal/temptation unavailable: $M = 73.16$ milliliters; $p < .10$), while the comparisons among the latter three groups were not significantly different (see fig. 4).

To test the impact of counteractive construal on participants' consumption, we regressed the amount of soda participants consumed on the estimated calorie content of the soda within each condition: when participants were expecting an opportunity to consume the soda, their calorie estimates negatively predicted the actual consumption amount ($\beta = -.42$, $t(42) = -4.61$, $p < .01$). For those who were not expecting such an opportunity and thus did not experience the

self-control conflict, there was no such relation ($\beta = .09$, NS).

To further examine the process of self-control through counteractive construal, we conducted a mediational analysis with participants who were expecting an opportunity to consume the soda (fig. 5). First, the accessibility of the dieting goal negatively predicted the amount of soda participants consumed ($\beta = -.46$, $t(42) = -3.39$, $p < .01$). In addition, the accessibility of the dieting goal increased the construed calorie content in the drink ($\beta = .50$, $t(42) = 3.70$, $p < .01$), which in turn decreased the consumption amount ($\beta = -.58$, $t(42) = -4.61$, $p < .01$). When we controlled for construed calorie content, the path between the accessibility of the dieting goal and the consumption amount became nonsignificant ($\beta = -.23$, $t(41) = -1.64$, NS), while the construed calorie content remained significant ($\beta = -.46$, $t(41) = -3.27$, $p < .01$; Sobel test $z = -2.40$, $p < .05$).

FIGURE 4

CONSUMPTION AMOUNT AS A FUNCTION OF GOAL PRIME AND TEMPTATION AVAILABILITY

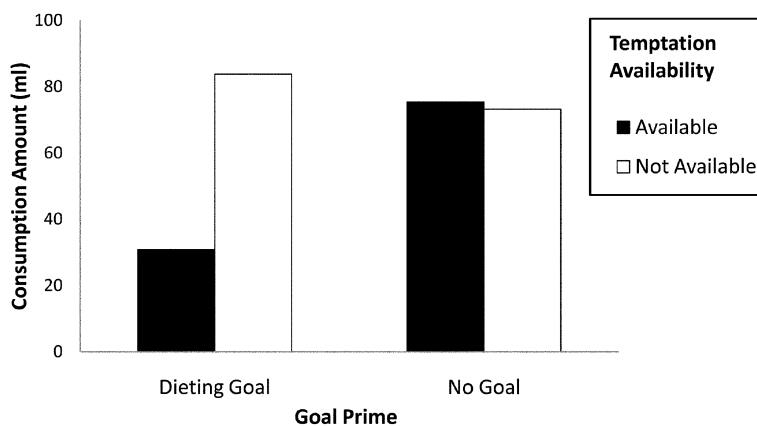
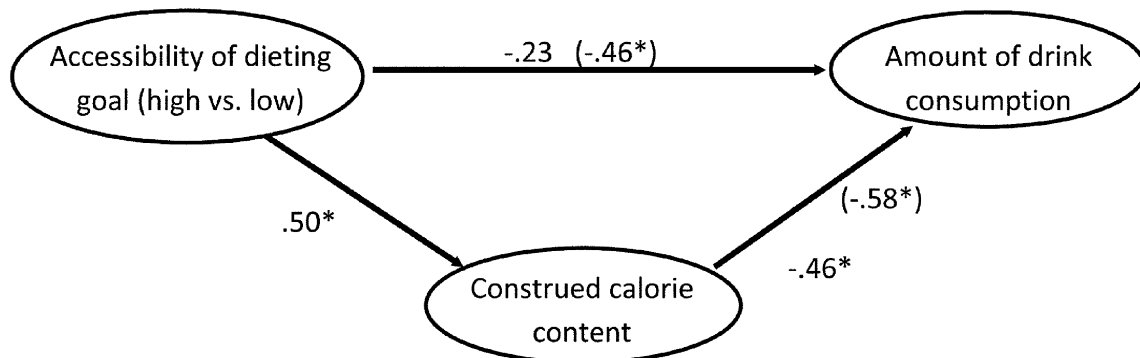


FIGURE 5

PATH MODEL OF THE INFLUENCE OF COUNTERACTIVE CONSTRUAL ON CONSUMPTION OF A TEMPTING DRINK (STUDY 3)



Using a direct manipulation of the accessibility of the long-term goal, this study provided further support to the counteractive construal hypothesis and demonstrated that when people experience a conflict and anticipate the need for self-control to resolve the dilemma, they increase the construed cost of pursuing the available temptations and reduce their actual consumption accordingly. When the long-term goal is inaccessible, consumers do not experience the conflict between the goal and the temptation, and counteractive construal does not occur.

So far we have demonstrated that the experience of a self-control dilemma elicits consumers' counteractive construal, and we tested this mechanism using both chronic goals and experimentally primed goals. We assume that these changes in cognitive construal of temptations represent a self-control response designed to help protect the pursuit of the important goal rather than a general cognitive tendency to alter assessment of all objects. Our final study will further demonstrate that these changes in construals truly represent a self-control operation by testing whether counteractive construal occurs only for targets that pose a threat to the attainment of the important goal and whether it operates only when self-control is effective at protecting the goal pursuit. Whenever self-control becomes ineffective at helping resolve the conflict, the observed counteractive construal should diminish. Specifically, in the next study we expect dieters to augment the cost of unhealthy (vs. healthy) food items, and they do so only when the consumption amount of the food items is optional (vs. fixed).

STUDY 4: SELF-CONTROL EFFECTIVENESS FOR SUBSEQUENT CONSUMPTION

In this final study, participants were asked to estimate the calorie content of a healthy or unhealthy (yet tasty) snack and were told that they had to consume an optional or fixed amount of the food they would be evaluating. On the basis of our hypothesis, participants should exaggerate the calorie

content for the unhealthy food item only if they expect to consume an optional (vs. fixed) amount of the snack, because when the consumption amount is fixed, self-control offers no instrumental value in protecting the goal pursuit. However, for the healthy snack there should be no difference in participants' estimates of the calorie content, regardless of the expected consumption amount, because this snack does not pose a threat to the goal.

Method

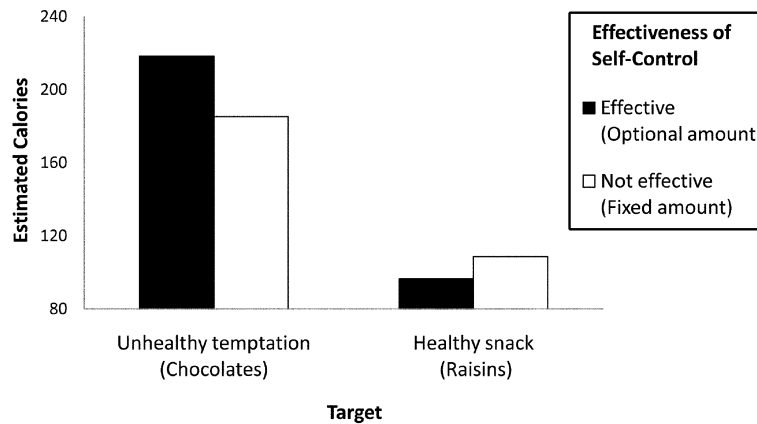
Ninety female undergraduate students at the University of Texas at Austin participated in the experiment in exchange for partial course credit. The experiment employed a 2 (target: unhealthy temptation vs. healthy snack) \times 2 (effectiveness of self-control: effective vs. ineffective) between-subject design.

Participants arrived in the lab and were led to individual cubicles to complete a product evaluation survey. In each cubicle, four magazines were placed on a desk with the cover of each clearly visible to make sure the dieting goal was activated. The magazine on the top of the pile was *Shape* magazine with a fit and well-toned female model wearing a bikini on the cover. The second one was *Women's Health* with a fit female model in a sleeveless dress on the cover. The third was a filler magazine (a marketing journal), and at the bottom the fourth magazine was *Runner's World*, featuring a fit, barebacked male jogger on the cover. All participants were exposed to the same four magazines and were told that these magazines were materials for later surveys and they should not flip through them until instructed to do so.

Participants were told that the initial study, a product survey, contained two parts: the first part was about people's evaluations of different properties of certain products, and the product they would evaluate was M&M chocolates (for the unhealthy snack condition) or Sun-Maid raisins (for the healthy snack condition). On the basis of a pretest with participants from the sample, raisins were seen as healthier

FIGURE 6

ESTIMATED CALORIES AS A FUNCTION OF TARGET AND EFFECTIVENESS OF SELF-CONTROL



($M = 5.73$ on a 7-point scale ranging from 1 = extremely unhealthy to 7 = extremely healthy) than M&M chocolates ($M = 2.51$; $t(64) = 4.28$, $p < .01$).

Effectiveness of self-control was manipulated via expected consumption amount. Participants were told that in the second part they would answer more questions about the same product but these questions required tasting the food. In the self-control effective condition, participants (expecting to taste either chocolates or raisins) were told that “for the tasting part, we will give you a variety of different M&Ms (raisins), and you can taste as many as you want.” In contrast, participants in the self-control ineffective condition were told that “for the tasting part, to ensure a proper taste of the product, you will be given a small pack of M&Ms (raisins), and you will need to finish it before answering the questions.” These instructions were also printed in bold characters and underlined on the cover of the questionnaires.

After receiving the instructions, participants started with the first part of the survey and evaluated the snack placed in front of them, which was either a small pack of M&M chocolates (1.69 ounces) or a small pack of raisins (1.5 ounces), depending on the condition. The nutrition information on packages was covered using a black marker. For the first part, participants were asked to evaluate some physical properties of the product (e.g., weight, color) and, more important, estimate the calorie content of the snack pack (“How many calories do you think this pack of M&M chocolates [raisins] contains?”).

Upon finishing this part of the survey, participants returned the survey to the experimenter and commenced the allegedly second part of the experiment. The experimenter gave them the snack that corresponded to their conditions (M&M chocolates or raisins). In the self-control effective condition, participants were given a plate with 10 M&M chocolates of different colors (or 30 raisins for the healthy snack condition to ensure that the size of stimuli was comparable across conditions) and asked to taste as many as

they would like to. In the self-control ineffective condition, participants were given a small pack of snacks (a 0.5-ounce pack of raisins for the healthy snack condition vs. a 0.6-ounce pack of M&M chocolates for the unhealthy temptation condition) and asked to finish the entire pack before filling out the survey.

All participants followed the instructions correctly and completed the second part of the survey, which contained six filler questions about the snacks (e.g., taste and texture). A page of “magazine survey” was also included at the end of the packet to disguise the real purpose of having the magazines on the table. Participants completed the study and were debriefed and thanked before leaving the room.

Results and Discussion

An ANOVA of participants’ estimated calorie content of the products first yielded a main effect for the two different snacks: participants estimated that the chocolates contained more calories than the raisins ($F(1, 86) = 80.52$, $p < .01$), and there was no main effect for the effectiveness of self-control. More important, we found the predicted target \times effectiveness of self-control interaction ($F(1, 86) = 4.20$, $p < .05$). For participants who expected to sample chocolates in the second part of the experiment, those who were told that their consumption amount would be optional estimated the chocolates to contain more calories per pack ($M = 218.17$) than those who were told that their consumption amount would be fixed ($M = 185.18$; $t(49) = 1.98$, $p = .05$). In contrast, for participants who expected to sample raisins, their estimates of the calorie content of the snack did not differ no matter whether the amount they expected to consume was optional ($M = 96.40$) or fixed ($M = 108.68$; $t(37) = .98$, NS). See figure 6.

We further analyzed the amount of chocolates participants tasted to examine the impact of counteractive construal on people’s actual consumption. For participants who expected to consume an optional amount of chocolates, we expect

that the estimated calorie content would reduce their actual consumption; indeed, the estimated calorie content of the M&M chocolates negatively predicted the number of chocolates they consumed in the second part of the experiment ($\beta = -.48$, $t(21) = -2.49$, $p < .05$). For those with raisins, there was no such relation ($\beta = .31$, $t(18) = 1.40$, NS). This pattern of actual consumption again confirmed the instrumental value of counteractive construal in helping individuals avoid temptations that are perceived to undermine goal attainment.

GENERAL DISCUSSION

In order to accomplish important long-term goals, consumers need to resist temptations that are immediately gratifying yet costly to the goal attainment. The present research documented counteractive construal as a self-control mechanism that helps people resolve the conflict between a short-term temptation and a long-term goal. By construing the temptation as more damaging to the goal attainment when experiencing such a dilemma, consumers become more likely to avoid the temptation and maintain their goal pursuit.

Across four studies, we provided converging evidence to demonstrate the changes in construal of temptations in response to self-control conflicts. Study 1 showed that consumers with a strong dieting goal construed a cookie as containing more calories if they expected to have an opportunity to consume the cookie later, but such a difference did not occur among those consumers with a weak dieting goal. In a different domain, study 2 found that students with a strong academic goal expected a party to last longer if they experienced a conflict (vs. did not experience) between achieving academic excellence and socializing; furthermore, their expected party duration negatively predicted the interest in attending the party. This, however, did not happen among students with a weak academic goal. Study 3 found that participants with an accessible fitness goal who thus experienced a self-control conflict construed a sugared soda drink to be more calorie laden when they expected (vs. did not expect) to be offered this drink, and this increase in construed calorie content negatively predicted the amount they later consumed. However, this discrepancy and effect on actual consumption did not occur if the fitness goal was not accessible. Finally, study 4 showed that dieters who expected to consume an optional amount of temptation expected the temptation to contain higher calories and in turn consumed less when given the opportunity. In contrast, those who expected to consume a mandatory amount of the same temptation did not exhibit this counteractive construal. In addition, this study also demonstrated that this pattern of counteractive construal occurred only for targets that posed a threat to the dieting goal.

The Mechanism of Counteractive Construal

Consumers experience a self-control dilemma because of the trade-off between the immediate benefits that a temptation provides and the costs it entails for the attainment of

a more important goal. By altering the construal of the temptation and augmenting its negative impact on goal attainment, the conflict becomes easier to resolve in favor of the long-term goal. This finding extends both the literature of motivated reasoning and perception (Balcetis and Dunning 2006; Klein and Kunda 1992; Kunda 1990) and the emerging literature in automatic goal pursuit (Aarts and Dijksterhuis 2000; Bargh and Chartrand 1999; Bargh and Ferguson 2000; Moskowitz et al. 1999; Shah and Kruglanski 2003).

It is important to note that counteractive construal, as a self-control strategy, should occur only in situations when consumers experience the conflict and when the effort is perceived to be instrumental in resolving it. In situations where such conflict is not experienced, such as in studies 2 and 3 when the academic or fitness goals were not activated and in study 4 when the target did not pose a threat to the goal attainment, counteractive construal should not occur. Similarly, when self-control is deemed as noninstrumental in helping avoid temptations, such as for the participants who were required to consume a fixed amount of an unhealthy snack in study 4, counteractive construal is not expected. Following this line of reasoning, the strength of counteractive construal should be proportional to the need for self-control: whenever there is little conflict, self-control should be minimal; as the threat the temptation poses to goal attainment increases, so does the strength of one's self-control effort. The strength of the long-term goal, for example, determines the intensity of conflict one experiences, and thus, the stronger the goal is, the stronger the counteractive construal becomes.

One important implication of the self-control nature of counteractive construal is the distinction between avoidable temptations and unavoidable obstacles that undermine goal attainment. For example, a foot injury may prevent one from keeping up a regular exercise regime and undermine the attainment of a fitness goal, but it cannot be categorized as a temptation or be avoided through increased self-control. In such cases, we expect no counteractive construal because self-control would be ineffective in helping to overcome these uncontrollable obstacles. It is possible, however, that people may exaggerate the damage caused by the obstacles in order to motivate greater effort when self-control does help, for example, when the person has recovered from the foot injury and is trying to make up for the missed training.

Counteractive Construal in Relation to Other Self-Control Theories

Past research has documented various strategies that consumers use to resolve the self-control conflict such as precommitments (Green and Rachlin 1996; Thaler 1991), self-imposed penalties and rewards (Ainslie 1975), and the formation of implementation intentions (Gollwitzer and Brandstaetter 1997). The counteractive construal theory advances our understanding of self-control by suggesting that in addition to these deliberate behavioral strategies, consumers may engage in self-control efforts that alter the cog-

nitive construal of the target. Essentially, we found that self-control effort can have a cognitive basis and motivational consequences.

Importantly, these findings also add to the literature that documents the importance of forming a “cold” and abstract representation of the temptation in the successful resolution of a self-control conflict (Fujita et al. 2006; Mischel and Ayduk 2004). For example, Mischel and colleagues (Metcalfe and Mischel 1999; Mischel et al. 1989) have proposed an affect-based “hot system” that leads to impulsive behaviors and a cognition-based “cool system” that results in more contemplative choices. According to this perspective, the success in self-control depends on the differential degree of activation of the two systems. Similarly, Loewenstein (1996) suggests that consumers should make choices in self-control situations based on rational calculation of preferences rather than visceral factors such as hunger. While these theories assume that the emotional-neutral cognition of the situation accurately reflects the choice options and emphasize the utilization of such information in resisting temptations, counteractive construal theory suggests that even before the utilization stage of cognition, the motivational strength of a long-term goal can intervene in the formation of the cognition to promote successful resolution of self-control conflict. According to the current findings, whenever anticipating the need for self-control, consumers proactively modify their cognition of the situation to facilitate resolving the conflict in favor of the long-term goal, and the extent of such modifications depends on the experience of conflict, as well as the necessity and effectiveness of self-control.

The counteractive construal theory also adds to the literature that emphasizes the level of abstraction of mental representations in the successful resolution of self-control conflicts. For example, Fujita et al. (2006) suggest that a high-level, abstract representation of the choice options would promote better adherence to the goal when facing a self-control conflict. The counteractive construal theory adds to this literature by showing that such conflicts may be resolved in favor of the goal even when individuals represent the options at the most concrete level. When the level of concreteness is held constant, consumers may resolve the conflict by cognitively altering the construal of the choice and render the temptation less appealing by exaggerating the damage it potentially does to the attainment of the goal, providing an alternative route to successful resolution of self-control conflict.

Building on the recent findings that self-control can occur outside conscious deliberations (Gollwitzer et al. 2005; Shah, Friedman, and Kruglanski 2002), examining whether counteractive construal may work automatically without the involvement of cognitive effort provides a promising avenue for future research. Because counteractive construal works by altering the cognitive representation of targets and such cognitive processes can be automatized through repeated practices whenever the need for self-control arises (e.g., Aarts and Dijksterhuis 2000), it is possible that counteractive construal may occur automatically and require little con-

scious effort, making it different from other more explicit self-control strategies that require conscious exertion of will and depend on processing resources (Mischel 1974; Muraven and Baumeister 2000; Trope and Neter 1994).

It is important to note that counteractive construal functions by altering one’s mental representation of the temptation, but such cognitive mutation is not the only self-control mechanism when consumers encounter a conflict. In all our experiments, we specifically elicited the construal of the temptations and demonstrated that people construed temptations as more harmful to the long-term goal and reduced the consumption accordingly. However, the spontaneous use of counteractive construal would depend on various individual and situational factors, such as the malleability of the construal and one’s self-control skills. For example, when the calorie content of certain food items is obvious (e.g., a 100-calorie pack of a snack) or the duration of a tempting television show is fixed, it would be more difficult to use counteractive construal to exaggerate the extent to which it may harm the long-term goal. In these situations, people may choose other self-control strategies, such as modifying the availability of the temptation, to help maintain their pursuit of the long-term goal.

Implications for Goal-Based Evaluations

An increasingly large body of research has documented the goal-based evaluation of targets (Brendl, Markman, and Messner 2003; Ferguson and Bargh 2004; Myrseth et al. 2009), which shows that active goals influence the implicit value of related objects or actions. For example, Ferguson and Bargh (2004) found that thirsty participants automatically evaluated words related to drinking (e.g., water, juice) as relatively more positive than goal-irrelevant words, and this positive evaluation persisted until participants quenched their thirst. Similarly, Fishbach, Zhang, and Trope (2010) found that an active goal devalues temptations that are perceived to be harmful for the attainment of the goal, until the goal is accomplished. For instance, video games were evaluated more negatively by students who were reminded of their current course work, but not by students who were reminded of their completed course work.

The current counteractive construal framework provides a potential explanation for the goal-driven evaluation of targets. Because subjective evaluation of targets is context dependent and reflects people’s current motivational states (Brendl et al. 2003) and counteractive construal reflects one’s motivational effort in resolving a self-control dilemma, it is possible that the negative evaluation of temptations in a self-control conflict follows the changes in construals; hence a temptation that is perceived to be more damaging to goal attainment becomes more negative in evaluation. Future research should examine this possibility.

In conclusion, our research contributes to the self-control literature by documenting that those individuals whose self-control is heightened by a salient long-term goal and available temptation will construe temptation as more damaging to the attainment of the long-term goal. Consequently, in-

dividuals will use these distorted construals to help resolve the conflict in favor of the long-term goal.

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