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The Effects of Self-Referencing and Counteractive Construal on Consumption Goal Reversion*

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Abstract

Purpose - This study aims to explore the factors that can trigger the escalation of an initially pursued long-term utilitarian goal that is set aside to pursue a competing hedonic goal.

Research Design, Data, and Methodology - The experimental study covered three groups : Group 1 (ego-depletion, self-referencing), Group 2 (ego-depletion, neutral), and Group 3 (no ego-depletion, neutral). The participants of the study comprised 150 undergraduates who were divided into three groups of 50 students for each. One-way ANOVA and regression analyses were used to verify the hypotheses.

Results - Ego-depleted consumers are less likely to resist immediate temptation than those who are not in an ego-depletion state. Self-referencing has a positive impact on long-term goal reversion when consumers in an ego-depletion state experience immediate temptations. Counteractive construal plays a mediating role between self-referencing and long-term goal reversion.

Conclusions - We found that consumers tend to yield to momentary temptations when they are in an ego-depletion state. Self-referencing and counteractive construal can eliminate the ego-depletion effect and then facilitates escalation of the set-aside long-term goal.

Keywords: Counteractive Construal, Ego-Depletion, Goal Conflict, Goal Reversion, Self-Referencing.

JEL Classifications: C83, L81, M31, P46.

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1. Introduction

Imagine a consumer is concerned about his or her health and thus is keeping on a diet for a fit body shape. When the consumer pulls into the strip mall where the fruits, vegetables, and other low-calorie food are sold, she or he finds a bakery, where thereare so many tasty and delicious but high-calorie foods that are not good for losing weight. This vignette depicts a common self-control dilemma, that is, the consumer should execute self-control over himself or herself to bring him/her in line with the desirable long-term fitness goal at the expense of immediate temptations. Given that, with the increase of awareness toward health, people around the world are becoming to lead a healthier lifestyle to improve quality of life. Accordingly, the majority of consumers view the utilitarian consumption goal as a long-term and higher priority goal in their mindset due to reasons of self-esteem (appearance), and concerns about longevity and survival.

In the past decade, much research has documented that consumers hold multiple goals (e.g., long-term utilitarian vs. immediate hedonic goal) that they intend to pursue in their daily consumption behavior. Utilitarian consumption goal is often viewed as a long-term goal, which involves extrinsic and task-related reward. In contrast, hedonic goal is often viewed as a short-term or momentary goal, which involves intrinsic, personal, and emotional reward. Consumers are not committed to a particular goal but rather hold goals that are in conflict with each other, for instance, long-term goal of being healthy and immediate goal of fulfilling the appetite.

In fact, the majority of momentary temptations are activated outside of consciousness, in turn, the activated temptations not only distract consumers from pursuing the goal they are committed to (e.g., a long-term goal) but also increase the intensions to consume the products that are consistent with the temptations (e.g., choosing some tasty food but high calories), which results in failure of self-control. In addition, past research has shown that operation of self-control depends on a limited resource, akin to energy or willpower. (Muraven, Baumeister, 2000). However, when such regulatory resource has been used, it leads people into a state of ego depletion and cannot help people perform subsequent self-control task.

When experiencing a goal conflict (e.g., long-term goal vs. immediate temptations), consumers under ego-depletion state tend to set aside the competing goal, that is, the set-aside goal is becoming increasingly irrelevant and is shielded from cognitive resources until the pursued goal is achieved (Kruglanski et al., 2002; Fishbach et al., 2003; Shah et al., 2002). However, Carlson et al. (2013) suggest that the set-aside goal can escalate in activation until a new opportunity to pursue it arises. And if the activation of the set-aside goal increases sufficiently, consumers will revert to it, which is referred to goal reversion.

However, previous research only put emphasis on the effects of activated temptations and ego-depletion on pursuit of consumption goals related to long-term (e.g., eat healthy goal) versus short-term (e.g., eat tasty goal). For instance, Laran (2010) shows consumers find it difficult to resist temptations, which leads to failure of self-control and impediment of long-term goal pursuit, because pursuit of hedonic goal is associated with nature of human being, such that people strive to seek pleasure and avoid pain. And past literature shows that ego-depletion can be overcome by formation of implementation intentions (Webb, Paschal, 2003), delay (Baumeister et al.,1998), and high-level mental construal (Fujita et al., 2006).

However, to the best of our knowledge, few studies paid attention to the factors that can influence long-term goal reversion. Therefore, the current study raises the fundamental and intriguing questions of how consumers manage predecisional goal conflicts, how to avoid focal goal being set aside, and what can facilitate goal escalation to occur in predecisional consumer choice processes.

In this research, we are interested in how consumers manage goal conflicts and examine how ego-depletion might be offset or overcome once they have occurred. Moreover, a primary objective of the research presented here is to find whether the factors that eliminate the ego-depletion effect (self-referencing and counteractive construal) can facilitate escalation of the set-aside long-term goal (long-term goal reversion), which could greatly benefit the depleted people.

2. Theoretical Background and Hypotheses

2.1. Hedonic Consumption and Utilitarian Consumption

Past research suggests that any product contains both hedonic and utilitarian attributes (Chernev, 2004). However, whether a product is hedonic or utilitarian can be described as a function of the relative salience of its hedonic and utilitarian attributes.

Typically, hedonic goods are related to more experiential consumption, whereas utilitarian goods are considered as more functional and instrumental. Moreover, hedonic goods are ones whose consumption is relatively more pleasure-oriented, affective, and are associated with sensory experience of aesthetic or sensual pleasure, fantasy, and fun. In contrast, utilitarian goods are ones whose consumption is goal-oriented, cognitive, instrumental, and are associated with necessary functions in life (Chernev, 2004). In addition, prior research suggests that hedonic products can be viewed as vice products and luxuries which are linked to "wants" (the emotional or affective preference of the decision maker), whereas utilitarian products are often viewed as virtue products and necessities which are related to "shoulds" (the cognitive or reasoned preference of the decision maker) (Wertenbroch, 1998).

Furthermore, consumption experiences can indeed produce both utilitarian and hedonic value (Fischer & Arnold,1990). Past research suggests that consumers can have two consumption goals during they purchase and consume; one is hedonic goal which is often referred to the pursuit of momentary temptations, the other one is utilitarian goal. Hedonic goal that arises from innate affective and sensory attributes involves intrinsic, personal, and emotional reward and for this reason it is sought as an end in itself, and it is considered as a kind of short-term goal. In contrast, utilitarian goal that is derived from the expectations of task completion involves extrinsic and task-related reward; as a result, it is instrumental to the achievement of a higher-order goal and is viewed as a long-term goal Dhar & Wertenbroch, 2000).

These two consumption goals, hedonic and utilitarian goals, are often simultaneously activated to trigger conflicts in the domain of eating behavior. Focusing on the eating behavior, in the current research, the eat tasty goal is defined as a short-term hedonic goal, and the eat healthy goal is defined as a long-term utilitarian goal.

2.2. The Conflict between Long-Term Utilitarian Goal and Immediate Hedonic Goal

The population is increasingly interested in leading a healthier lifestyle well-being or being healthy, which is, typically, viewed as the higher priority goal that consumers keep in their mindset as the behaviors involving health are related to life-maintenance, death thoughts, and self-enhancement. The focal goal can influence consumers'choices between hedonic and utilitarian options. Therefore, in the current research, we propose that consumers are more likely to engage in utilitarian long-term goal commitment because they are prioritizing this particular goal over others and are more likely to perform utilitarian consumptions. To illustrate, when consumers are committed to a focal goal (e.g., being physically fit), they are more likely to make choices consistent with their focal goal (e.g., choosing healthy food items) (Fishbach & Dhar, 2005).

The majority of consumer behaviors are driven by consumers' goals. According to the Goal Systems Theory, goals and the means used to achieve these goals are connected to each other in an associative network. When a goal is activated, it spreads energy to the related means used to achieve the goal through the associative links (Kruglanski et al., 2002). Under different contexts or priming conditions, consumers will differ in

their beliefs and make different judgments or reactions consistent with the context (Laran et al., 2008).

Consumers may hold goals that are in conflict with regard to a particular indulgence. To clarify, people, on one hand, want to keep physically fit (e.g., a long-term utilitarian goal), but on the other side, they also would like to eat something that will make them happy in the short run (a short-term hedonic goal). However, these different goals that are activated by various environmental cues and social opportunities cannot be equally central to an individual's identity. Hedonic goals can be easily activated by some environmental cues even when consumers focus on utilitarian goals. In addition, consumers find it difficult to resist temptations as the hedonic or indulgent alternatives are highly desirable and are associated with nature of human being, such as pleasure-seeking (Laran, 2010). That is, consumers need to solve these conflicts when making choices.

Self-control conflict often happens when the attainment of a higher-order goal comes at the cost of momentary low-order temptations (Dhar & Wertenbroch, 2000; Fishbachet et al., 2003; Fishbach, Trope, 2005). People execute self-control over themselves to bring themselves in line with a desirable long-term end state. For example, students have to study for long hours to attain academic success even when they have received a party invitation.

2.3. Ego Depletion as A Factor Influencing Long-Term Goal Inhibition

In the context of self-control problems, self-regulatory resource is viewed as willpower or mental resource. Self-regulatory resource can enable people to progress from the current state to the desired end state and allow people to be better performing self-regulation tasks (Baumeister et al., 1988). However, the reservoir of regulatory resource is limited; as a result, such regulatory resource can become temporarily depleted by situational self-control demand and cannot help people perform the subsequent self-control task. This state of diminished ability for self-control is referred to ego depletion.

Ego-depletion reduces people's capability to engage in the subsequent, seemingly unrelated self-regulation task. For example, Kahan et al. (2003) found that, compared with the restrained participants who did not participate in the initial self-control task, those who participated in the initial self-regulation task increased food intake when they are asked to do the second self-control task. Moreover, ego-depleted participants felt more urge to buy and were willing to spend more than those whose metal resources were not depleted (Vohs & Faber, 2007). In addition, when an initial, unrelated self-control task has depleted the resource required for effective executive control, consumers tend to engage in more intuitive and less effortful processing for subsequent behaviors (Pocheptsova et al., 2009).

In the course of their self-regulatory pursuits, consumers may often encounter immediate temptations that entice them to prevent from attaining theirlong-term focal goal. When consumers experience a conflict between long-term and short-term goal (e.g., eat tasty and eat healthy), the consumers under ego-depletion state will be less likely to engage in effortful trade-off comparison between the hedonic and utilitarian options, which results in choices that are more in line with their intuition. Our hypothesis is expressed as follows:

H1: When experiencing a conflict between maintaining a long-term goal and indulging an immediate temptation, consumers under ego-depletion state are less likely to resist the immediate temptation than those who are not under ego-depletion state.

2.4. The Roles of Self-Referencing and Counteractive Construal on Long-Term Goal Reversion

Prior research has suggested that forming implementation intention toward the long-term goal can impede the activation of automatic responses as the implementation intentions are effective in promoting goal achievement, such that the ego-depleted participants who formed implementation intentions showed a stronger persistence than those similarly depleted participants who did not form implementation intentions(Webb, Paschal, 2003). In addition, Baumeister et al. (1998) suggest that the depleted people can recover strength after Fujita et al. (2006) show that increasing levels of mental construal can enable a better self-control. Moreover, Schmeichel and Vohs (2009) suggest that self-affirmation enables good self-control by promoting abstract or high-level mental construal under the conditions of resource depletion.

In this research, we propose two factors, namely, self-referencing and counteractive construal, that can offset or overcome ego-depletion and facilitate escalation of the set-aside long-term goal.

2.4.1. Self-Referencing Effect on Long-Term Goal Reversion

A growing amount of research has shown that self-reference is one of methods to promote consumers to relate ads to themselves (Debevec & Romeo, 1992; Sujan et al., 1993). Self-referencing refers to the cognitive processes that consumers use to understand the incoming information when it is related to the self it not only serves to enhance learning and the recall of information, it also can increase product feature and ad message elaboration and then affects persuasion (Burnkrant & Unnava, 1995). For example, prior research has shown that participants have more favorable attitudes toward the advertised product in the advertisements that facilitate personal relatedness than those in the advertisements that do not facilitate personal relatedness (Debevec & Romeo, 1992). However, whether consumers relate the ad to one's self primarily depends on which aspect of the self is activated by the stimulus as self-referential processing becomes different according to the activated self (Krishnamurthy & Sujan, 1999).

Previous research suggests that the self is construed from a

multidimensional perspective, such as actual self, ideal self, and ought self (Aaker, 1999). Since the self is a complex, highly organized memory structure, the availability of more potential linkage points between the incoming information and memory facilitates elaboration of the incoming information. Ideal self refers to how a person would like to perceive himself/herself (Sirgy, 1982); the activation of one's ideal self tends to generate subsequent behaviors consistent with his or her ideal self. To suppose, you are striving to lose weight right now. One day, on your way to the local gym, you find another person wearing the same jeans as you, but he or she looks much more attractive and sexier than you thanks to his/her perfect body shape. At that time, you might make a decision to invest more efforts to lose weight than before because of the self-referencing effect induced by the person you met.

The focal goal consumers pursue can be inhibited by the momentary temptation goals which are activated by some environmental cues, however, once the thwarting of the set-aside focal goal plays the same role in impeding the activation of momentary temptations, the pursuit of the focal goal will follow a predecisional pattern (Carlson et al., 2013). That is, focal goal escalation occurs when motivational states concerned with the focal goal persist and activation increases though interference or interruption exists (Chartrand et al., 2008).

In the current research, we assess that self-referencing can lead mental representation of the anticipated attainment of focal goal to become highly accessible, which can induce activation and escalation of the focal goal, though interference or interruption exists. Our hypothesis is expressed as follows:

H2: Self-referencing has a positive impact on long-term utilitarian goal reversion when consumers under ego-depletion state experience immediate temptations.

2.4.2. The Effect of Counteractive Construal on Long-Term Goal Reversion

A great number of past studies have demonstrated different self-control strategies by which consumers either behaviorally modify the activation of immediate temptations or change mental representation of the choice situation to attenuate the impact of temptations on choice. For example, when anticipating self-control conflict, consumers often use behaviors to change the choice situation in order to resolve the conflict, such as imposing penalties for failing in long-term goal pursuit, rewarding the self for success of the goal pursuit (Ariely & Wertenbroch, 2002), and removing tempting options from their vicinity (Green & Rachlin, 1996; Wertenbroch, 1998).

Zhang et al. (2010) have explored a self-construal operation which is named as counteractive construal and suggest that changing the construal and assessments of temptations can help resolve self-control conflict. Moreover, they argue individuals'motivations to pursue their focal goal can change the construal and assessment of options when there are conflicts between these two options (e.g., healthy vs. tasty food)due to the significant effect of motivational state on cognition and judgments. For instance, people augment the negative value of temptations which is determined by the extent to which it undermines the attainment of the focal goal. Specifically, when consumers experience a conflict between a long-term focal goal and an immediate hedonic goal, those who engage in counteractive construal tend to augment the negative impact of the temptations on their focal goal attainment and are more likely to resolve the conflict in favor of the long-term goal and resist the temptations. Therefore, in this research, we argue that engaging in counteractive construal can lead the set-aside focal goal to reemerge as the dominant goal and can induce utilitarian-directed behaviors because it could help consumers perceive the increase of negative impact of temptations on the focal goal attainment. In short, when consumers engage in counteractive construal, the activated goal of indulging appetite temptations will be supplanted by the pursuit of focal goal, which results in a higher preference for utilitarian products.

In addition, in line with our previous prediction, we assess self-referencing could help consumers relate the ideal self (e.g., a physically fit person) to themselves, which leads the decision to eat high-calorie food (e.g., chocolate cake) to be more influenced by the fact that it is unhealthy than by the fact that it is tasty. In other words, when consumers feel conflict between maintaining a long-term utilitarian goal and indulging momentary temptations, self-referencing could help resolve the conflicts and leads to the focal goal-driven behaviors through augmenting the negative effects of temptations (counteractive construal). Our hypothesis is expressed as follows:

H3: Counteractive construal plays a mediating role between self-referencing and long-term utilitarian goal reversion.

For experimental study, three groups, group 1 (ego-depletion, self-referencing), group 2 (ego-depletion, neutral), and group 3 (no ego-depletion, neutral) were used. To test H1 (H2 and H3),in experiment 1 (2), group2 and group 3 (group1 and group 2) were designed by manipulating ego-depletion (self-referencing). 150 undergraduates were assigned to these three groups of 50 students for each.

3. Experiment 1

3.1. Method and Procedure

In experiment 1, participants were asked to make two choice-decisions. The first choice task is followed after participants were primed by the long-term fitness goal, and the second one is followed by the e-hunting task.

3.1.1. Priming of Long-term Fitness Goal

To manipulate long-term fitness goal, participants are told to

read a scenario with some pictures and imagine that they are on a diet because their weight have been increased since they became indulgent in some high-calorie food. After reading this scenario, we informed the participants to picture the situation of losing weight in their mind and describe their feelings and thoughts about losing weight in the questionnaire, which can lead to our expectation that the participants should favor the healthy and low-fatty food. Subsequently, the participants were told to complete a survey to measure whether they would like to choose vegetable salad, which is the first choice task of this experiment.

3.1.2. Ego-depletion Manipulation (e-hunting task)

After performing the first choice task, all the participants in both group 1 and group 2 were instructed to complete a problem-solving task (e-hunting task) we apply from the past study (Moller et al., 2006). The participants in the no ego-depletion condition were informed to find and cross off all instances of the letter e when it is at the beginning of a word.

In order to manipulate initial efforts at self-control, the task used to induce ego-depletion was made quite difficult. The participants in the ego-depletion condition were informed to find the letter *e* and to cross it out, except for following three rules. The three rules given to the ego-depletion group were as follows: (a) do not cross out an eif it is adjacent to another vowel, (b) do not cross out an e if it is the first letter of a word, and (c) do not cross out an e if it is followed by two consonants in the same word. These rules can lead to a self-control activity as it required participants to override the impulse to simply cross off every letter *e* they found.

3.1.3. Development of Choice-Task

Following the manipulation of ego-depletion, we designed a task inducing pursuit of immediate temptation, which can trigger a goal-conflict between maintaining a long-term fitness goal and indulging in an immediately gratifying temptation. We asked the participants to imagine they received an invitation from one of their close friends (e.g., go out to have drink and enjoy some fried chicken) at dinner time. And then participants were presented with a choice-task to complete the dependent measure of self-control task, which is the second choice task in the experiment 1. After completing this section of questions, participants were also asked to complete the final section concerned with the experiment 2.

3.2. Measures

3.2.1. Ego-depletion

In order to check whether the manipulation of ego-depletion induced by the two types of e-hunting task succeed, we referred to two items on a 7-point scale anchored by "not at all (1) — a great deal (7)". The items include "I think it is difficult to solve this task," "I felt very tired after doing this problem-solving task".

3.2.2. Goal Conflict

We used three items to check the manipulation of goal conflict anchored by "not at all (1) — a great deal (7)". The items include "I think there is a conflict between going to enjoy beer and fried chicken and attaining my long-term fitness goal," "Going to enjoy beer and fried chicken will impede me to pursue my long-term fitness goal," "Going to enjoy beer and fried chicken is against my long-term fitness goal" (Slocum et al., 2002).

3.2.3. Hedonic Temptation Choice Task

We used one item to check whether after the e-hunting task participants are more likely to yield to momentary temptation. The item is "Will you go out to enjoy beer and fried chicken with your friend", which is anchored by "Yes (1) — No (2)".

4. Experiment 2

In experiment 2, the participants were divided into two conditions: self-referencing and neutral condition.

4.1. Method and Procedure

Experiment 2 comprised of two parts: an ego-depletion task and a long-term goal reversion task. In the ego-depletion task, the participants in both group 1 and group 2 completed the difficult e-hunting task in order to manipulate initial efforts at self-control.

In the long-term goal reversion task, we informed the participants in group 1 and group 2 to imagine they were watching TV at home because there are three hours to the time of appointment. To manipulate self-referencing, participants in the self-referencing condition of group 1 were asked to read a printed advertisement of fitness center which presented a picture of attractive and sexy models. The advertisement in the self-referencing condition presented the message in second-person wording (Meyers-Levy & Peracchio, 1996), which should encourage the participants to engage in self-referencing (e.g., "Your dream is to own S-line body shape," "You will be more confident if you own S-line body shape," and etc.). And then the participants were informed to write down their thoughts about the relatedness of the model to the self. Finally, we measured the extent to which the participants self-referenced the model. However, participants in the neutral condition of group 2, were told to read a printed ad of smart phone which is not related to consumers' activated long-term fitness goal, and similarly, they were informed to write down their thoughts about the advertised smart phone.

After manipulating self-reference, we asked the participants of each group to complete a survey to measure goal conflict,

which is similar to that of experiment 1. After finishing this section of questions, participants were told to describe their thoughts about the temptations presented in the questionnaire and complete the survey to measure counteractive construal. Subsequently, all of participants of each group were presented with the final choice-task to measure long-term goal reversion. Finally, some demographic information was presented in the final section of the survey.

4.2. Measures

4.2.1. Self-Referencing

We referred to five items to measure the extent to which participants self-referenced the model we used as a stimulus by using a 7-point scale anchored by strongly disagree (1) – strongly agree (7), derived from previous study (Krishnamurthy, Sujan, 1999). The items include "I can easily picture my ideal body shape looking at the model," "I can easily form similarity judgments between my ideal body shape and the model," "The model seems to be written for my ideal body shape," "The model makes me think about my ideal body shape," "The model seems to be related to me personally."

4.2.2. Counteractive Construal

We referred to five items to measure the extent to which participants engage in counteractive construal by using a 7-point scale anchored by strongly disagree (1) – strongly agree (7). The items include "I think beer contains so many calories," "I think beer is not a good choice for dieters," "I think fried chicken contains so many calories," "I think fried chicken is so greasy," "I think fried chicken is not a good choice for dieters" (Zhang et al., 2010).

4.2.3. Goal Reversion Choice Task

We used one item to check whether after engaging self-referencing and counteractive construal participants tend to revert to their focal goal. The item is "Which kind of food will you enjoy with your friend tonight", which is anchored by "Beer and fried chicken (1) — Vegetable salad (2)".

5. Data Analysis and Results

5.1. Overview of Each Choice Task in Three Groups

The results of the first choice task showed that, in group 1, 27 of 50 (54%) participants selected the utilitarian option (vegetable salad) as their meal in the long-term goal-priming task, 30 participants (60%) selected the utilitarian option in group 2, and in group 3, 28 of 50 participants (56%) selected the vegetable salad in the long-term goal-priming task (see <Table 1>). In the current research, we choose the participants who selected the vegetable salad in the long-term goal-priming task as the target sample because only those participants were successfully primed by the long-term fitness goal; hence the effective sample size is 85.

As shown in <Table 1>, the ratios of choosing beer and fried chicken in both group 1 (85.2%)and group 2 (80%) are higher than in group 3 (35.7%). And in group 1 the ratio of choosing salad in long-term goal reversion task (43.5%) is higher than those in either group 2 (8.3%) or group 3 (30%).

5.2. Results of Experiment 1

5.2.1. Participants

<Table 1>Results of Each Choice Task in Three Groups

Groups	Stage 1 — Long-term Goal-Priming task (choosing salad)	Stage 2 — Ego-depletion Task (choosing beer and fried chicken)	Stage 3— Goal Reversion Task (choosing salad)
1 (ego-depletion – self-referencing)	27 (54%)	23 (85.2%)	10 (43.5%)
2 (ego-depletion – neutral)	30 (60%)	24 (80%)	2 (8.3%)
3 (no ego-depletion – neutral)	28 (56%)	10 (35.7%)	3 (30%)
total	85/150	57/85	15/57

As the <Table 1> showed, in experiment 1, there are 30 participants in group 2 (ego-depletion, neutral) and there are 28 participants in group 3 (no ego-depletion, neutral). The purpose of experiment 1 is to explore whether people under the ego-depletion state, compared to those under no ego-depletion state, tend to be more vulnerable to the temporary temptations.

5.2.2. Manipulation Check

As expected, the e-hunting task was rated more difficult by those participants in the ego-depletion condition than those in the no ego-depletion condition ($F(1, 58) = 29.117$, $p < 0.001$; $M_{ego} = 4.6667$, $SD = 1.64701$ vs. $M_{no\ ego} = 2.4286$, $SD = 1.50132$). Moreover, participants in both ego-depletion and no ego-depletion condition were informed to rate their level of tiredness at the beginning of the experiment (the first tiredness rating) and at the end of the experiment (the second tiredness rating). For each participant, we subtract the second tiredness rating from the first tiredness rating, producing a tiredness index. The analysis results showed that participants in the ego-depletion condition became more tired after completing the e-hunting task than those in the no ego-depletion condition, ($F(1, 58) = 30.488$, $p < 0.001$; $M_{ego} = 1.2667$, $SD = 2.42022$ vs. $M_{no\ ego} = -2.0000$, $SD = 2.05480$). The changes in level of tiredness suggest that participants in the ego-depletion condition indeed used

more regulatory resources than those in the no ego-depletion condition.

5.2.3. Hypothesis Testing

Firstly, one-way ANOVA was conducted to test whether both participants in the ego-depletion and no ego-depletion condition experienced a goal conflict. The analysis results showed that there was no main effect of go conflict($F(1, 58) = 1.230$, $p > 0.05$), that is, participants in the ego-depletion condition experienced same extent of goal conflict as those in the no ego-depletion condition.

Secondly, to test H1, we ran a logistic regression analysis with the two conditions (ego-depletion and no ego-depletion) as the independent variables and the choice of immediate hedonic temptation (e.g., beer and fried chicken) as the dependent variable. The dependent variable was a 0-1 dummy variable, where 1 denoted choice of the hedonic temptation. The independent variable was a 0-1 dummy variable, where 1 denoted ego-depletion condition. In line with our predictions, the results showed that the selection of hedonic options was higher in the ego-depletion condition (80%) than in the no ego-depletion condition (35.7%). Moreover, the resource-depleted participants felt more tempted than non-depleted participants ($\beta = 1.974$, Wals = 10.709, $p < 0.05$). Therefore, H1 was supported.

5.3. Results of Experiment 2

5.3.1. Participants

In experiment 2, only those ego-depleted participants that were successfully tempted by the immediate temptation were selected as the target sample. As the <Table 1> showed, there are 23 and 24 participants who were successfully tempted by the immediate temptation in group 1 (ego-depletion, self-referencing) and group 2 (ego-depletion, neutral), respectively. In experiment 2, we aim to explore the effects of self-referencing and counteractive construal on long-term goal reversion.

5.3.2. Manipulation Check

Before testing the hypotheses, we summed and averaged the five items ($\alpha = 0.845$) used to check self-referencing manipulation. The mean value ($M_{self\text{-}referencing}$) of the self-referencing condition was 5.2435, which suggests self-referencing behavior was confirmed. Hence participants in the self-referencing condition could be successfully considered as the consumers who engaged in self-referencing.

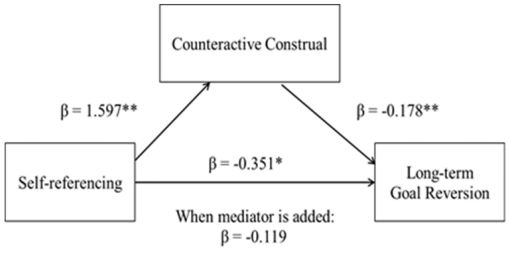
In addition, we checked the manipulations of goal conflict and counteractive construal. First, we summed and averaged the three items ($\alpha = 0.914$) used to measure goal conflict. And we conducted one-way ANOVA to test whether there was a difference of goal conflict between participants in the self-reference condition and those in the neutral condition. The analysis results showed that there was a main effect of goal conflict ($F(1, 47) = 10.601$, $p < 0.005$), such that participants in the self-reference condition experienced more goal conflict than those in the neutral condition ($M_{self\text{-}reference} = 5.9275$, SD = 1.08226 vs. $M_{neutral} = 4.8083$, SD = 1.26282).

Second, we summed and averaged the five items ($\alpha = 0.925$) used to measure counteractive construal. The analysis results of an additional one-way ANOVA showed that participants in the self-reference condition were more likely to engage in counteractive construal than those in the neutral condition ($F(1, 47) = 33.852$, $p < 0.001$; $M_{s\text{-}c} = 5.8783$, SD = 0.92390 vs. $M_{n\text{-}c} = 4.2812$, SD = 0.95642).

5.3.3. Hypothesis Testing

To test H2, we ran a logistic regression analysis with the two conditions (self-referencing and neutral) as the independent variables and the choice of utilitarian option (e.g., vegetable salad) as the dependent variable. The dependent variable was a 0-1 dummy variable, where 0 denoted choice of long-term goal reversion (e.g., salad).The independent variable was a 0-1 dummy variable, where 1 denoted self-referencing condition. In line with our predictions, the analysis results showed that the selection of utilitarian option was higher in the self-referencing condition (43.5%) than in the neutral condition (8.3%), and self-referencing had a positive impact on long-term goal reversion among the depleted consumers ($\beta = -2.136$, Wals = 6.313, $p < 0.05$), thus H2 was supported.

In order to test H3, a series of regression analysis were conducted to examine the role of counteractive construal as a potential mediator of the self-referencing effect. The results indicated that (a) self-referencing led to greater counteractive construal ($\beta = 1.597$, $t(47) = 5.818$, $p < 0.001$); (b) counteractive construal predicted long-term goal reversion ($\beta = -0.178$, $t(47) = -3.837$, $p < 0.001$); (c) self-referencing had a direct effect on long-term goal reversion ($\beta = -0.351$, $t(47) = -2.953$, $p < 0.01$); however, (d) when long-term goal reversion was regressed on both self-referencing and counteractive construal, the effect of self-referencing on long-term goal reversion became non-significant ($\beta = -0.119$, $t(47) = -0.791$, $p > 0.05$), whereas the effect of counteractive construal on long-term goal reversion remained significant ($\beta = -0.146$, $t(47) = -2.368$, $p < 0.05$). A Sobel (1982) test confirmed the reduction of self-referencing effect was significant ($z = -3.22$, $p < 0.05$), providing evidence that the effect of self-referencing on long-term goal reversion was mediated by counteractive construal. Therefore, H3 was supported.



* = p < 0.01; ** = p < 0.001

<Figure 1> The Mediating Role of Counteractive Construal

6. General Discussion and Conclusion

6.1. Summary and Implication

In this research, we found that when experiencing a goal conflict between maintaining a long-term goal and indulging an immediate temptation, consumers who depleted regulatory resource in an initial self-control task were more likely to be tempted than those who were not under ego-depletion state. And when the ego-depleted consumers experienced immediate temptations, self-referencing has a positive impact on long-term goal reversion. Moreover, we found support for the view that self-referencing increases counteractive construal, which, in turn, leads to long-term goal reversion. That is, counteractive construal plays a mediating role between self-referencing and long-term goal reversion.

Past research on goal reversion has verified how conflicting goals are managed during the predecisonal period and has shown the greater the goal conflict, the more likely goal reversion is to occur. However, our research contributes to the self-control and goal reversion literature by documenting that self-referencing and counteractive construal that function as a self-control mechanism can help ego-depleted consumers resolve the goal conflict and lead to the initially pursued focal goal reversion. In short, this current research sheds light on how to remediate self-control failure of depleted consumers. Examining this issue will provide researchers and marketers with rich insights into the effects of self-referencing on self-control exercise.

In addition, given that counteractive construal can trigger long-term goal reversion, consumers who had depleted a limited resource in an initial self-control task had better construe temptations as more damaging to the attainment of their long-term focal goal because such counteractive construals can help them resolve goal conflict and successfully revert to their initially pursued focal goal.

A practical contribution that derives from our research relates to the advertisement design of weight-losing products. This research suggests that weight-losing products should be advertised in the ad copy which presents the message in second-person wording, which encourages readers to experience and engage in self-referencing, because, in this research, we find that self-referencing can lead consumers under goal conflict to relate the ad to one's desired end state and then induces a better persistence in self-control. Furthermore, the results of this current research suggest that high-calorie food, such as ice-cream, should be advertised in the ad copy which focuses on hedonic benefits that products can provide and induces affective responses because of individuals' nature of pleasure-seeking.

6.2. Limitations and Direction for Future Research

Firstly, in the majority of prior research, the Intrinsic Motivation Inventory (Ryan,1982) was used to assess whether any effects found were a function of changes in intrinsic motivation for the e-hunting task used to measure ego-depletion. Therefore, in the future study, we should also assess the intrinsic motivation concerned with ego-depletion effects.

Secondly, Carlson et al. (2013) also find a delay can cause activation of the set-aside goal to increase during the set-aside period, and then leads to focal goal escalation. Therefore, in the future study, we should explore whether a delay can promote a kind of broad-minded and big-picture perspective which is associated with a good self-control and lead to the behaviors that are driven by consumers' focal goal, which may help uncover novel processes of our reported effects.

Thirdly, according to the self-construal theory, people view themselves differently based on the extent to which the self relates to social others. Typically, people's view can be categorized into independent self-view and interdependent self-view (Spassova, Lee, 2013). Within an individual, one self-view is often stronger and accessible than the other. Specifically, people who have a more accessible independent self-view place the most importance on self-reliance and autonomy; they are motivated to be unique, different, and separate from others. On the other hand, people who have a more salient interdependent self-view put more emphasis on relationship with others and interpersonal harmony; they consider the self as a part of a social group and are motivated to keep harmony with others of the social group. In the current research, we did not consider the roles of self-view on the dependent measure of self-control. We infer that participants with more salient interdependent self-view are more likely to fail in the self-control task because of the motives to keep interpersonal harmony, though they are under no ego-depletion state. Therefore, future studies should further explore the moderating roles of self-view.

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