

## Repenting Hyperopia: Emotional Antecedents and Behavioral Consequences of Self-Control Regrets

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## Abstract

This article proposes that supposedly farsighted (“hyperopic”) acts of resisting temptation and choosing virtue over vice evoke increasing regret over time. We show that greater temporal separation between a choice and its assessment enhances the regret (or anticipated regret) of virtuous decisions (e.g., choosing work over pleasure). We explain this finding based on the notion that a broader perspective on life allows consumers to escape the influence of “indulgence guilt” and recognize their tendency to miss out on hedonic experiences. Accordingly, it is shown that the intensifying regret about hyperopia is mediated by the decay of guilt and the persistence and often accumulation of feelings of missing out. We also demonstrate that reversals in self-control regrets affect immediate, real choices. Whereas thinking about short-term regret motivates consumers to choose virtue, thinking about long-term regret impels them to select indulgence. This effect is demonstrated when consumers judge the regrets of others, anticipate their own future regret about a real impending choice, or consider their regret about a (supposedly) unrelated, past decision. We discuss the theoretical implications of the findings for self-control and other perspective-dependent literatures and rule out alternative explanations.

“The trouble with resisting temptation is it may never come your way again.”

*Korman's Law*

“There is not any memory with less satisfaction than the memory of some temptation we resisted.”

*James Branch Cabell*

Our religions, mythologies, and fables admonish us to overcome temptation, exercise self-discipline, and heed the future (see Adam and Eve, Odysseus, and the Ant and the Grasshopper). Consumer advocates and researchers, too, offer helpful strategies for increasing willpower and avoiding indulgence (e.g., Hoch and Loewenstein 1991; Mukhopadhyay and Johar 2004; Wertenbroch 1998). The seemingly universal espousal of prudence and farsightedness as noble goals is reflected in the vast literature on self-control. This stream of research is premised on the notion that people are short-sighted (myopic) and easily tempted by hedonic “sins,” such as overbuying (oniomania), splurging on tasty but unhealthy food, and indulging in luxuries (e.g., Baumeister 2002; Loewenstein 1996; Mischel 1974; O’Guinn and Faber 1989; Prelec and Herrnstein 1992a; Thaler 1980). Critically, this literature suggests that people not only yield to temptation they had originally planned to resist, but also subsequently reverse their preference and regret their myopic behavior (Elster 1979; Schelling 1992; Strotz 1955). Such regret is assumed to motivate the use of pre-commitments, which constrain future choices and align them with longer-term and more virtuous goals (e.g. Ainslie 1975; Thaler and Shefrin 1981).

While yielding to temptation can certainly be harmful and regrettable, this article argues that overcontrol and excessive farsightedness (“hyperopia”) can also have negative long-term consequences for consumers. In particular, we propose that with the passage of time, supposedly righteous acts of resisting temptation and choosing virtue over vice evoke increasing regret.

Building on research on self-control and mental accounting (Kivetz and Simonson 2002; Prelec and Loewenstein 1998; Thaler 1985), we argue that this finding is part of a broader

phenomenon, whereby a more global perspective on life allows consumers to escape the influence of “indulgence guilt” and recognize their tendency to miss out on pleasurable consumption and leisure activities. Accordingly, we demonstrate that --- in both retrospective and prospective evaluations of past and current decisions (respectively) --- consumers are more likely to regret (or anticipate regretting) righteous choices (e.g., of work over pleasure) the greater the temporal separation between the actual choice and its assessment. We show that the intensifying regret about past hyperopia is mediated by the decay of indulgence guilt and the persistence and often accumulation of feelings of missing out due to abstinence.

The temporal reversal of self-control regrets (regretting myopia in the short-run vs. hyperopia in the long-run) is shown to influence immediate preferences. Whereas thinking about short-term regrets motivates consumers to work, consume necessities, and choose virtuous options, thinking about long-term regrets impels consumers to select leisure, luxury, and indulgence. This effect occurs whether consumers judge the regrets of others or anticipate their own future regret about a real impending choice. The behavioral consequences of self-control regrets are also observed for real choices that are (seemingly) unrelated to the past decision being regretted.

The emotional antecedents and behavioral consequences of self-control regrets were explored in a series of studies, involving both real and hypothetical choices and regrets, with participants that represented a wide range of demographic characteristics including age and income (e.g., students and alumni; airport and train travelers; park visitors). These studies also examined the mediating role of feelings of guilt and missing out and the different consumer mindsets evoked by changes in temporal perspective. The theoretical implications for the literatures on self-control and other perspective-dependent theories are discussed. We also show that the results cannot be explained on the basis of action versus inaction regrets, level of construal, or mortality salience.

## SELF-CONTROL DILEMMAS AND REGRET: CONCEPTUAL FRAMEWORK

There is growing interest in consumer research in the topic of self-control (e.g., Hoch and Loewenstein 1991; Kivetz and Simonson 2002a; Prelec and Herrnstein 1992a; Mukhopadhyay and Johar 2004; Shiv and Federikhin 1999; Wertenbroch 1998). Much of this research has been premised on the idea that consumers are myopic and need to employ various self-control strategies to align their behavior with their long-term interests. Thus, a central tenet of the self-control literature is that consumers who yield to temptations subsequently regret their myopia. According to this approach, consumers are typically better off in the long-run if they chose virtue over vice, work over leisure, utilitarian necessities over hedonic luxuries, and saving money over spending it (e.g., Baumeister 2002). In the present research, we challenge this approach and argue that -- when consumers consider their lives in perspective -- they are more likely to regret righteous decisions.

We begin, however, with a brief review of the classic self-control problem (i.e., myopia), followed by a survey of evidence suggesting that consumers also suffer from what could be considered an opposite form of self-control problem, the challenge that consumers face in deviating from “doing the right thing” and acting responsibly. We then proceed with an analysis of the emotional factors that underlie our proposition that changes in perspective can lead consumers to reverse their self-control regrets and preferences. Next, we test the hypothesis that consumers regret choices of indulgence in the short-run, but regret choices of virtue in the long-run. Further, we examine the notion that the effect of time perspective on self-control regret is mediated by the fading of indulgence guilt and the persistence and often accumulation of feelings of missing out. We also demonstrate that a similar mechanism operates in the case of anticipated regret. Finally, we investigate the consequences of self-control regrets, and show that a broader perspective leads consumers to choose more indulgence. Figure 1 presents an outline of our conceptual framework.

## The Myopia Self-Control Problem

A great deal of research as well as everyday observations suggest that consumers often act on impulse and make shortsighted choices that contradict their long-term goals (Mischel 1974, Loewenstein 1996; O'Guinn and Faber 1989; Prelec and Herrnstein 1992a). Accordingly, research extending over four decades in psychology and economics, and more recently in marketing, has examined people's use of self-control strategies to resist hedonic temptations (e.g., Ainslie 1975; Elster 1979; Hoch and Loewenstein 1991; Gollwitzer and Moskowitz 1996; Metcalfe and Mischel 1999; Prelec and Herrnstein 1992a; Schelling 1992; Trope and Fishbach 2000). Examples of such self-control techniques include pre-commitment, cognitive distraction, resolutions, and quantity rationing (Mischel, Cantor, and Feldman 1996; Mukhopadhyay and Johar 2004; Strotz 1955; Thaler and Shefrin 1981; Wertenbroch 1998).

The tendency to succumb to impulse, seek immediate pleasure, and avoid discomfort at the expense of long-term interests is often attributed to time-inconsistent preferences, whereby consumers overweigh the present relative to the future (e.g., Ainslie 1975; Strotz 1955). Such present-biased preferences are assumed to obstruct consumers' self-regulation, with significant detrimental consequences for both individuals and society (e.g., Baumeister, Heatherton, and Tice 1994). That is, a major premise underlying the myopia account of self-control is that indulging and yielding to short-term temptations will lead to regret, whereby, in retrospect, consumers wish they had behaved more responsibly. As Baumeister (2002, p. 675) states "for consumer behavior, self-control represents the capacity to resist temptation, especially those relevant to impulsive purchases and other expenditures that are *likely to be regretted later on*. ... In the long-run, such purchases may lead to higher profits for manufacturers and retailers, but *more unsatisfied and unhappy consumers*" (italics added).

There is no doubt that myopic self-control problems exist and can evoke remorse, especially when consumers yield to temptations with severe long-term consequences. For example, compulsive buyers and longtime smokers who develop extreme debt and catastrophic diseases are likely to regret indulging in such detrimental behaviors. Nevertheless, we propose that in many everyday self-control dilemmas, involving tradeoffs between pleasure and more virtuous options, minimizing long-term regret calls for choosing indulgence. That is, while yielding to temptation indeed generates regret in the short-run, over time, as consumers assume a broader perspective, righteous choices of virtues and necessities are more likely to be regretted. To understand the basis for this proposition, we next consider an alternative approach to the myopia framework.

#### The Hyperopia Self-Control Problem

In a recent article, Kivetz and Simonson (2002a) argued that consumers may suffer from an opposite form of self-control problems, involving farsightedness (hyperopia) and future-biased preferences. Such hyperopic consumers deprive themselves of indulgence and instead overly focus on acquiring and consuming utilitarian necessities, acting responsibly, and doing “the right thing.” Kivetz and Simonson showed that consumers who perceive themselves as suffering from hyperopia employ pre-commitments to indulgence. For example, consumers choose hedonic luxury rewards over cash of equal or greater value and explain such choices as intended to guarantee that the award is not spent on necessities. Consistent with the notion that hyperopic self-control problems involve time-inconsistent preferences, consumers pre-committed to indulgence when the consequences of their decisions were delayed but later reversed their decision when the consequences were imminent.

Hyperopia and the related need to pre-commit to indulgence arise due to the inherent disadvantage of luxuries and indulgences relative to necessities and other utilitarian options (e.g.,

Kivetz and Simonson 2002a; Prelec and Loewenstein 1998; Thaler 1985). Analyses of Western society, and in particular, of American culture reveal that necessity and virtue have precedence and higher status relative to luxury and indulgence (Berry 1994; Maslow 1970; Scitovsky 1992; Weber 1998). Further, due to both pragmatic and moral reasons, it is much easier to justify to the self and to others the choice of utilitarian necessities and virtue rather than of indulgence and vice. Thus, to the extent that choice is based on reasons (e.g., Shafir, Simonson, and Tversky 1993; Simonson and Nowlis 2000), local decisions are expected to lead to hyper-responsibility and under-indulgence.

Importantly, this analysis suggests that choosing indulgence over necessities is likely to evoke guilt (e.g., Prelec and Herrnstein 1991; Thaler 1980). That is, indulgence may be construed as wasteful, irresponsible, and even immoral and thus may be associated with feelings of guilt. Such guilt may drive consumers to under-consume precisely those products and experiences that they enjoy the most.

Kivetz and Simonson (2002b) provide evidence for the role of guilt in attenuating choices of indulgence. Based on the notion that investing high effort serves as a guilt-reducing justification for earning the right to indulge, they show that greater effort requirements (in reward programs) enhance the preference for luxury over necessity rewards. Further, the positive impact of effort on choices of hedonic luxuries is shown to be stronger for consumers who tend to suffer from indulgence guilt.

Building on these findings, we posit that when consumers face a dilemma between indulgence and virtue, they overemphasize the guilt associated with failing to pursue their long terms goals, and underweigh the feelings of missing out associated with depriving themselves of pleasure. Further, as we discuss next, temporal variations in the intensity of indulgence guilt and missing out can lead to reversals in self-control regrets.



## Self-Control Regrets

As reviewed earlier, the concept of regret is an important element of existing self-control theories. It is surprising, then, that there has been very little empirical research on regrets of self-control behavior. The few articles that have addressed the issue of self-control regret have focused on regrets of myopia and temptation, and demonstrated that anticipated regret leads people to behave more responsibly (Parker, Stradling, and Manstead 1996; Richard et al. 1998).

We propose that consumers can regret either myopia or hyperopia, depending on the temporal perspective of their post-decision evaluation. More specifically, we assume that particular resolutions of self-control conflicts give rise to different feelings downstream. In such self-control dilemmas, consumers have to choose between options with immediate benefits but delayed costs (leisure goods or relative vices) and options with immediate costs but delayed benefits (investment goods or relative virtues; see also Wertenbroch 1998). As discussed earlier, a myopic choice of indulgence (e.g., going to a party instead of working) can induce feelings of guilt. In contrast, a more farsighted, virtuous choice (e.g., working rather than partying) can bring about feelings of missing out. Critically, we propose that the intensity of such self-control emotions varies with consumers' (temporal) perspective and accordingly influences the type of regret experienced.

We predict that the guilt associated with sacrificing long-term interests in favor of indulgence and luxury will decay over time. Such indulgence guilt is likely to predominate in the context of the immediate self-control dilemma. That is, when making local choices, consumers are driven by decision rules and principles that prescribe virtue, thriftiness, and prudence; violating such principles can be construed as a "sin" and can evoke guilt (Kivetz and Simonson 2002a; Prelec and Herrnstein 1991). However, the passage of time creates a psychological distance from the decision, and such distance reduces the psychological cost or pain of indulgence. In other

words, when consumers evaluate their past choices from a broader (temporal) perspective, (local) decision rules become less salient and indulgence guilt diminishes.

In contrast, when consumers forfeit indulgences for the sake of virtues, the resulting feelings of missing out are predicted to persist, and even intensify, over time. More specifically, considered through the narrow perspective of a temporally proximal evaluation, a recent decision to resist temptation seems laudable and harmless. After all, viewed in isolation, any single (righteous) choice does not preclude future opportunities to indulge. For example, deciding to forgo a dream vacation this summer does not hinder the illusion of vacationing next year. However, the aggregation of many (local) decisions distributed over a period of time may lead to a sub-optimal pattern, in terms of the consumer's own (global) preferences (Kahneman and Lovallo 1993; Prelec and Herrnstein 1992b; Read, Loewenstein, and Rabin 1999). That is, over time, many consumers may recognize that the advantage of necessities and virtues in local decisions creates an imbalance in their lives whereby they do not have enough fun and do not spend enough time and money on pleasurable things that go beyond the indispensable minimum. Thus, a broader temporal perspective may help consumers recognize the accumulation of hyperopic choices and missed opportunities. Further, the passage of time highlights the fact that some opportunities to enjoy life and create special memories are unique. Thus, with time and a more global perspective, feelings of missing out are likely to persist and, in certain cases, even intensify.

The asymmetric effect of perspective on the intensity of indulgence guilt and missing out is expected to influence the type of regret evoked by different self-control behaviors. In particular, the notion that greater (temporal) perspective attenuates indulgence guilt but perpetuates or even accentuates feelings of missing out suggests that, while in the short-run hyperopia will appear normative, overtime it will generate increasing regret. Conversely, the proposed temporal pattern

of self-control emotions suggests that regrets of many indulgences will be short lived. In other words, consumers are predicted to reverse their self-control regrets, such that when evaluating near past decisions they would regret choices of indulgence rather than virtue, and when evaluating distant past decisions they would regret righteous decisions more than supposed myopic ones.

The discussion leads to the following hypotheses:

- H1:** Self-control regrets will reverse as a function of perspective: greater temporal separation between a decision and its subsequent evaluation will increase regrets of hyperopia and decrease regrets of indulgence.
- H2:** Temporal variation in the intensity of indulgence guilt relative to missing out will mediate the reversals in self-control regrets, with greater perspective eroding guilt but perpetuating and even augmenting feelings of missing out.

In a subsequent section, we examine the hypothesis that self-control regrets influence immediate choices, even when such choices are (supposedly) unrelated to the decision being regretted. Next, we report a series of studies that test hypotheses 1 and 2.

#### THE IMPACT OF PERSPECTIVE ON SELF-CONTROL EMOTIONS AND REGRETS

A series of three studies was conducted to test hypothesis 1 and 2. Study 1 examines consumers' judgments of regrets related to self-control dilemmas of others. Study 2 investigates consumers' (self) regrets regarding real past tradeoffs between work and pleasure. Study 3 explores the real regrets of college students regarding their behavior during a (recent vs. distant) past winter break; this study also contrasts the regrets of current students with those of alumni. Combined, these three studies test the hypotheses using diverse samples in a variety of self-control contexts and across different time frames. The studies also investigate the mediating role of feelings of indulgence guilt and missing out.

The studies examine self-control dilemmas between two alternative courses of action, one representing an indulgence or relative vice (e.g., eating a chocolate cake; partying) and the other representing a more hyperopic action or relative virtue (e.g., eating a fruit salad; working). The self-control dilemmas were selected based on a pilot study with 33 train travelers. Respondents were presented with a series of self-control dilemmas and were asked to indicate which alternative they think would be chosen by (a) a person who is most concerned about how s/he feels in the present (b) an impulsive person, who does not consider the negative consequences of actions in the long-run; (c) a person who considers long-term goals; and (d) a person who is most concerned about the future. In all cases, the alternatives designated as indulgence/vice or as farsighted/virtue were perceived as such by respondents. Specifically, a significant majority of respondents perceived relative vices as offering immediate benefits but negative long-term consequences, and relative virtues as offering long-term benefits.

#### Study 1: Judging Self-Control Regrets of Others (Hypotheses 1 and 2)

We investigate hypotheses 1 and 2 in three separate tests. In each test, respondents were presented with a self-control dilemma, in which two individuals were described as having to make a choice between an indulgence or relative vice and a more farsighted option or relative virtue (e.g., chocolate cake vs. fruit salad; see Shiv and Federikhin 1999). The scenario indicated that one individual eventually chose the vice whereas the other chose the virtue. Respondents' perspective was manipulated by varying (between-subjects) the timing of the described choices (distant vs. near past). The main dependent variable consisted of respondents' judgment of which individual feels greater regret about the past decision. Respondents were also asked to judge the extent to which the described individuals felt guilt and missing out.

*Method.* Hypotheses 1 and 2 were tested in three scenarios involving a chocolate cake

versus fruit salad dessert choice (124 university students), a cheap versus expensive cruise choice (48 train station travelers) and a work versus celebration choice (44 train station travelers). In the dessert choice scenario, respondents were randomly assigned to one of three temporal perspective conditions (i.e., choices were described as being made one day, one year, or five years ago). In the latter two scenarios, respondents were randomly assigned to either a near or distant past choice condition (i.e., choices were described as being made either yesterday or twenty years ago). Figure 2 presents the three scenarios, with the materials that differed across the conditions shown in square brackets. Respondents considered only one self-control dilemma.

As explained earlier, in each scenario, a self-control dilemma was presented with one of the described individuals choosing the righteous option (i.e., the fruit salad, the cheap cruise, or the work) and the second individual choosing the more pleasurable, indulgent option (i.e., the chocolate cake, the expensive cruise, or the celebration, respectively). Respondents were asked to rate which individual feels greater regret about the past decision. Ratings were made on a seven-point scale, with higher ratings representing greater regret for the individual who chose the righteous option (the scale endpoints were labeled such that “1” indicated that the individual who chose indulgence felt greater regret and “7” indicated that the individual who chose virtue felt greater regret). After respondents provided the regret judgments, they were asked to rate how much feelings of guilt they thought were experienced at the present by the individual who chose indulgence in the past. These guilt ratings were made on a seven-point scale ranging from “Not at all” (1) to “Very much” (7). Respondents were then asked to rate (using a similar seven-point scale) how much feelings of missing out they thought were experienced at the present by the individual who chose virtue in the past.

*Results.* The results of all three scenarios are depicted in figure 3 and support hypotheses 1

and 2. Specifically, in the dessert scenario, greater temporal perspective led to a significant increase ( $F(2, 121) = 6.3, p < .01$ ) in the judged regret of the individual who chose the virtuous fruit salad relative to the individual who chose the indulgent chocolate cake (4.0 vs. 4.6 vs. 5.3 in the “yesterday” vs. “last year” vs. “five years ago” conditions, respectively; all pairwise differences are significant at the .05 level). Further, ratings of current guilt about the past choice of the cake decreased significantly with greater temporal perspective ( $F(2, 121) = 15.3, p < .001$ ; 3.8 vs. 2.8 vs. 1.8, all pairwise differences significant at the .01 level), whereas ratings of feelings of missing out (associated with the past choice of the fruit salad) did not decrease ( $F(2, 121) = .2, p > .8$ ).

Similarly, in the cruise scenario, greater temporal perspective led to a significant increase in the judged regret of the individual who chose the cheaper cruise relative to the individual who chose the more expensive and luxurious cruise (4.0 vs. 5.1 in the “yesterday” vs. “20 years ago” condition, respectively;  $t = 2.3, p < .05$ ). Additionally, guilt about choosing the expensive cruise decreased with greater temporal perspective (2.9 vs. 2.3) and feelings of missing out associated with choosing the cheap cruise increased (2.6 vs. 3.0), although neither of these effects was statistically significant.

Finally, in the work versus celebrate scenario, greater perspective again led to a significant increase in the regret of choosing virtue over indulgence (3.3 vs. 5.1 in the “yesterday” vs. “20 years ago” condition, respectively;  $t = 3.3, p < .005$ ). In addition, the guilt associated with celebrating rather than working decreased significantly with greater perspective (4.4 vs. 1.7;  $t = 4.1, p < .001$ ), whereas the feeling of missing out associated with working rather than celebrating did not (3.5 vs. 3.1;  $t = .8, p > .1$ ).

To further investigate hypotheses 2, we conducted a mediation analysis (Baron and Kenny 1986) that tested whether self-control emotions mediated the effect of temporal

perspective on regret. We created a measure of self-control emotions by subtracting respondents' missing out rating from their guilt rating. The following three conditions for mediation were supported in each of the three scenarios: (1) the independent variable (i.e. temporal perspective) significantly affected the mediator (i.e., self-control emotions);<sup>1</sup> (2) the independent variable significantly affected the dependent variable (i.e. self-control regrets), per hypothesis 1; and (3) the mediator affected the dependent variable ( $p < .001$  in all three scenarios) when the independent variable was also included in the analysis, and thus, the effect of the independent variable on the dependent variable was attenuated ( $p > .1$  in all three scenarios). The mediating role of self-control emotions was also supported by the dramatic reductions in the mean squares associated with temporal perspective after controlling for the mediator (88%, 72%, and 85% reductions in MS in the dessert, cruise, and work versus celebrate scenarios, respectively).

In summary, the results indicate that greater temporal separation between a past choice and its subsequent evaluation increases the perceived regret of choosing virtue and necessity over indulgence and luxury. This reversal is mediated by the erosion of indulgence guilt relative to the persistence of feelings of missing out. Indeed, consistent with the proposed underlying mechanism, guilt was generally higher than missing out in the near past conditions and invariably lower in the distant past conditions (see figure 3).

#### Study 2: Real Regrets of Work versus Pleasure (Hypotheses 1 and 2)

Although study 1 provided support for hypotheses 1 and 2, it examined respondents' judgments of the regret of others rather than themselves, and therefore, it is not clear whether consumers would actually exhibit a similar pattern of regret related to the self. Thus, in the present study we test hypotheses 1 and 2 by examining consumers' real regrets of their actual

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<sup>1</sup> This effect was only marginally significant in the cruise scenario.

past choices, involving a self-control dilemma between work and pleasure.

*Method.* The participants in the study were 31 travelers, who were waiting for flights at domestic terminals in a major airport, and 32 park visitors in a major East Coast city. There were no noticeable differences in the responses of the two samples, and therefore, we report the results pooled across these two groups.

Participants were randomly assigned to one of four conditions in a 2 (temporal perspective: near vs. distant past) x 2 (self-control decision: work vs. pleasure) between-subjects design. In all conditions, participants were asked to think about a situation, which occurred either last week or at least five years ago (near vs. distant past, respectively), and in which they had to choose between work and pleasure. To manipulate participants' resolution of their past self-control dilemma, they were told to think about such a situation in which they eventually chose either the work or the pleasure (manipulated between-subjects). In all conditions, participants were asked to describe in writing both the work and the pleasure alternatives and their chosen course of action.

Participants were asked to rate the extent to which they currently regretted their past choice. Ratings were made on a seven-point scale ranging from "No regret at all" (1) to "A lot of regret" (7). Next, participants in the "decision to work" condition rated the extent to which thinking about their past choice evoked current feelings of missing out; these ratings were made on a seven-point scale ranging from "Not at all" (1) to "Very much" (7). Conversely, participants in the "decision to indulge" condition rated the extent to which thinking about their past choice evoked current feelings of guilt (using a similar seven point scale).

*Results.* Consistent with hypothesis 1, the results indicate that the interaction between temporal perspective and self-control decision in determining the level of regret was significant and in the predicted direction ( $F(1,59) = 7.1, p = .01$ ). As shown in figure 4 (upper panel), for



participants who chose work over pleasure, the experienced regret was greater for those who considered a distant rather than a near past self-control dilemma (3.4 vs. 2.0,  $t = 2.2$ ,  $p < .05$ ). Further, as expected, for participants who chose pleasure over work, the experienced regret was lower for those who considered a distant rather than a near past decision (1.4 vs. 2.2,  $t = 1.7$ ,  $p = .05$ ). Figure 4 (upper panel) also shows that, when near past decisions were evaluated, regrets about choosing indulgence were directionally higher than regrets about choosing work. In contrast, when distant past decisions were evaluated, regrets about choosing work were significantly stronger than regrets about choosing indulgence.

As shown in figure 4 (lower panel), the ratings of feelings of guilt and missing out supported hypothesis 2 and the mediating role of self-control emotions. As predicted, participants who chose pleasure over work experienced significantly less guilt when their indulgence occurred in the distant than near past (1.7 to 3.4,  $t = 2.6$ ,  $p < .01$ ). In contrast, participants who chose work over pleasure experienced significantly more feelings of missing out when their righteousness took place in the distant than near past (4.3 to 2.9,  $t = 2.0$ ,  $p < .05$ ). Further, a mediation analysis was conducted separately for each condition of self-control decision (i.e., work vs. pleasure). In the “decision to indulge” condition, the mediator (feelings of guilt) significantly affected ( $F(1, 26) = 6.6$ ,  $p < .05$ ) the dependent variable (regret) when the independent variable (temporal perspective) was also included in the analysis, and thus, the effect of the independent variable on the dependent variable was attenuated ( $F(1, 26) = .3$ ;  $p > .5$ ). Similarly, in “decision to work” condition, the mediator (feelings of missing out) significantly affected ( $F(1, 31) = 13.7$ ,  $p < .005$ ) the dependent variable when the independent variable was also included in the analysis, and thus, the effect of the independent variable on the dependent variable was attenuated ( $F(1, 31) = 1.4$ ,  $p > .1$ ). The mediating role of self-control emotions was also supported by the dramatic reductions in the mean

squares associated with temporal perspective after controlling for the mediator (92% and 78% reductions in MS in the “decision to indulge” and “decision to work” conditions, respectively).

In summary, the present study demonstrates that broader perspective increases consumers’ regret of righteous choices that they actually made in the past, whereas such perspective decreases regret of past hedonic choices. Consistent with the conceptual framework, this reversal in self-control regrets is driven by the lessening of guilt and the magnifying of feelings of missing out. Accordingly, compared to feelings of missing out, indulgence guilt was directionally stronger in proximal post-decision evaluations and significantly weaker in distal evaluations (see figure 4). Next, we report an additional study of real self-control regrets regarding actual past behaviors, using a different sample, methodology, and consumption context.

### Study 3: Real Winter Break Regrets (Hypotheses 1 and 2)

In the previous study, we manipulated both the timing of the past self-control dilemma and its resolution (choosing work vs. pleasure). In study 3, we vary only the timing of the past behavior and measure rather than manipulate its nature (myopic or hyperopic). More specifically, we examine the regrets experienced by university students about how they spent a relatively recent or distant-past winter break. In addition, we subsequently report the regrets of alumni reflecting on their winter breaks from forty years ago.

*Method.* Participants were 69 current students in a large East Coast university. Given the nature of the study, we sampled only students who lived in the USA for the majority of their lives and were at least in their second year of studies at the university. The students were recruited one week after winter break and were randomly assigned to one of two temporal perspective conditions: considering their winter break from either the previous week or the previous year. More specifically, participants were first instructed to take a few minutes to

carefully reflect on how they spent their winter break last week or last year (i.e., narrow vs. broad perspective, respectively; manipulated between-subjects).

Participants were then provided with a list of six regret statements about their behavior on winter break. Three of these statements suggested that the participant should have indulged more during winter break (“I should have enjoyed myself more,” “I should have traveled more,” and “I should have spent more money on things I enjoy”), whereas the other three statements suggested that the participant should have behaved more virtuously during winter break (“I should have studied more,” “I should have worked more,” and “I should have saved more money”).

Statements from both types were mixed together. Participants were asked to rate their agreement with each statement on a five-point scale ranging from “Strongly disagree” (1) to “Strongly agree” (5). Next, they were asked to rate what they regretted more when thinking about how they spent their winter break: “not having enough self-control” or “having too much self-control.”

The former was defined as “not exercising enough restraint over my own impulses, desires, or actions; indulging or pampering myself too much,” whereas the latter was defined as “exercising too much restraint over my own impulses, desires, or actions; not indulging or pampering myself enough.” Ratings were made on a seven-point scale, with higher [lower] ratings representing greater regret on having too much [not having enough] self-control during the winter break.

After participants indicated their regrets, they were asked to rate how much feelings of missing out they experienced at the present as they thought about the enjoyable things they could have done but did not do on the winter break. These missing out ratings were made on a seven-point scale ranging from “Not at all” (1) to “Very much” (7). Respondents were then asked to rate (using a similar seven-point scale) how much feelings of guilt they experienced at the present as they thought about the things they do not enjoy doing but should have done on the winter break.

Finally, before students were debriefed and thanked, they were probed for suspicion and asked to indicate what they thought was the purpose of the research. None suspected that the study was related to different temporal perspectives or articulated the hypotheses being tested.

*Results.* Factor analysis of the six regret statements yielded two distinct factors: a factor representing regrets about not behaving more virtuously during winter break, and a factor representing regrets about not indulging more during winter break. Participants agreed more with each of the three regret statements suggesting that they should have indulged more when they thought about the distant rather than the near past winter break (this effect was statistically significant for the “travel more” statement and marginally significant for the “spend more” statement). Correspondingly, participants agreed *less* with each of the three regret statements suggesting that they should have behaved more virtuously when they thought about the distant rather than the near past winter break (this effect was statistically significant for all three statements). In addition, for each participant, we created a combined measure of winter break regrets by subtracting the mean rating of the three “virtuous regrets” (e.g., “should have worked more”) from the mean rating of the three “hedonic regrets” (e.g., “should have enjoyed more”). Thus, more positive scores on this measure indicate greater overall regret about not indulging as opposed to not behaving virtuously, whereas more negative scores indicate the exact opposite. Consistent with the notion that regrets about being righteous are more likely for the distant past and regrets about indulging are more likely for the near past, the average score on this measure was significantly higher in the distant than near past winter break condition (0.7 vs. -0.5;  $t = 4.2$ ,  $p < .001$ ; see figure 5). Moreover, this score was significantly lower than zero ( $t = 2.7$ ,  $p < .01$ ) for winter break last week, indicating that in the near past participants regretted not behaving virtuously significantly more than not indulging. In contrast, this score was significantly higher

than zero ( $t = 3.2, p < .005$ ) for winter break from last year, indicating that in the distant past participants regretted not indulging significantly more than not behaving virtuously.

The results pertaining to the self-control regret scale provided additional support for hypothesis 1 (see figure 5). In particular, the mean rating on this scale was significantly higher for students who reflected on a distant rather than near past winter break (4.2 vs. 3.6,  $t = 2.0, p < .05$ ). That is, students regretted having “too much self-control” (compared to “not having enough self-control”) relatively more when they thought about their winter break from last year than last week.

Consistent with hypothesis 2, this perspective-induced reversal of self-control regrets was significantly mediated via the measure of self-control emotions (i.e., created by subtracting participants’ missing out rating from their guilt rating). When self-control emotions and time perspective were both included in the analysis, emotions had a statistically significant effect on self-control regret ( $F(1, 61) = 11.9, p < .005$ ), whereas perspective did not ( $F(1, 61) = 2.4, p > .1$ ; 50% reduction in MS). In addition, although self-control emotions did not significantly mediate the effect of perspective on the combined measure of winter break regrets (i.e., both the mediator and the independent variable had a significant effect), the reduction in the mean squares associated with temporal perspective after controlling for the mediator indicates that 46% of the effect of temporal perspective was mediated by self-control emotions.

*Regrets of Alumni.* We also asked 24 alumni (recruited at a reunion event), who graduated 40 years ago from the same university attended by the participants in the main study, to reflect on how they spent their college winter breaks. Except for the timing of the past winter break, the alumni questionnaire was identical in all aspects to the questionnaire used in the main study. As shown in Figure 5, the combined measure of winter break regrets indicated that the alumni (who reflected on their winter breaks from 40 years ago) felt greater overall regret about not indulging

as opposed to not behaving virtuously than did current students who reflected on their winter break from last year or last week (the latter difference was statistically significant at the .001 level). A similar result was obtained with respect to the self-control regret scale, which indicated that the alumni had more regrets about having “too much self-control” (compared to “not having enough self-control”) than did either of the current student groups (both differences were statistically significant at the .005 level). Finally, the alumni had stronger feelings of missing out and weaker feelings of indulgence guilt than either of the current student groups (all differences were statistically significant at the .05 level). These findings are consistent with hypothesis 1 and 2 and suggest that the effect of broader temporal perspective generalizes to situations in which it is not manipulated but rather measured using natural variation in time (i.e., aging).

#### Studies 1 – 3: Discussion

Using a variety of methodologies and consumption contexts, we demonstrated that regrets about prior resolutions of self-control dilemmas vary with perspective. As the temporal distance between the past decision and its current evaluation increases, consumers become more likely to regret choices of prudence and less likely to regret choices of indulgence. Such changes in perspective often lead to reversals in self-control regrets, whereby, in the short-run, vice is regretted more than virtue, but in the long-run virtue is regretted more.

Consistent with the conceptual framework, the results of studies 1 through 3 indicated that the shift in the dominant self-control emotion mediated the effect of perspective on regret. Broader perspective reduced feelings of indulgence guilt but sustained and even intensified feelings of missing out. Further, guilt was stronger than missing out when respondents reflected on the near past, whereas the opposite was true when they reflected on the distant past.

## ANTICIPATED SELF-CONTROL REGRETS

So far, all of the studies examined retrospective evaluations of prior self-control decisions. A question that naturally arises is whether a broader perspective has similar impact when consumers anticipate their future regret about a current, impending choice. Accordingly, in this study, we investigate prospective evaluations of self-control decisions. To allow for a comparison with retrospective, post-decision evaluations, we also examine regret about past resolutions of the same self-control dilemma using identical time intervals.

This study also allows us to explore consumers' default mindset when making a present choice. More specifically, we investigate the anticipated regret of a current decision when the timing of the subsequent evaluation is unspecified. Building on the notion that consumers are driven by guilt and justification concerns when making local choices (Kivetz and Simonson 2002a), we expect that such anticipated regrets will mirror short-term rather than long-term regrets.

### Study 4: The Impact of Past and Future Perspectives on Regret

*Method.* One hundred and nineteen respondents (train station travelers) were randomly assigned to one of five conditions. In all conditions, a self-control dilemma was described in which respondents had to choose between two desserts: a decadent, three-layer chocolate cake (i.e., a relative vice) and a low-calorie, healthy fruit salad (i.e., a relative virtue). In the two retrospective evaluation conditions, respondents were asked to imagine that they faced this dilemma in the past, either one day or five years ago (i.e., narrow vs. broad past perspective, respectively; manipulated between-subjects). They were asked to indicate which past choice would lead to greater regret when evaluated at the present. In the two prospective evaluation conditions, respondents were asked to imagine that they currently faced this dilemma. They were asked to anticipate which choice would lead to greater regret when evaluated either one day or

five years into the future (i.e., narrow vs. broad future perspective, respectively; manipulated between-subjects). A fifth condition was designed to explore the regrets that consumers anticipate by default. This condition was identical to the two prospective evaluation conditions described earlier, except that the timing of the future evaluation was unspecified.

*Results and Discussion.* Figure 6 depicts the percent of respondents in each condition who indicated that choosing the fruit salad would generate more regret than choosing the chocolate cake. The results in the two retrospective evaluation conditions supported hypothesis 1. In particular, respondents were significantly more likely to indicate that choosing the fruit salad would generate more regret (compared to choosing the cake) when the past choice occurred five years ago rather than yesterday (70% vs. 33%, respectively;  $t = 2.7$ ;  $p < .005$ ). Further, consistent with the prediction that greater temporal perspective will increase the prospective regret of choosing virtue over vice, respondents were significantly more likely to anticipate regretting choosing the fruit salad more when the future evaluation occurred five years rather than one day after the current choice (78% vs. 27%, respectively;  $t = 3.9$   $p < .001$ ). In addition, as shown in figure 6, respondents were least likely to anticipate that choosing the fruit salad would evoke greater regret (24%) when the prospective evaluation occurred at an unspecified future time. As expected, such anticipated regret was strikingly similar to the short-term (past and future) regrets obtained in the narrow perspective conditions.

In summary, the results demonstrate that the effects of perspective generalize to anticipated regret. Greater temporal separation between an impending decision and its prospective evaluation increases the anticipated regret of choosing virtue over vice. Thus, when evaluated from a narrow perspective, a decision to indulge appears more regrettable than a more virtuous choice; however, when evaluated from a wide perspective, the same decision appears less regrettable.



The findings also indicate that consumers do not spontaneously consider their long-term regret but rather naturally focus on more immediate considerations. The notion that consumers' default mindset mirrors closely the perspective induced by a narrow time frame suggests that merely asking consumers to anticipate their future regret will not increase the tendency to indulge. Rather, to promote hedonism, it seems that regret must be anticipated using a distant temporal perspective. Next, we investigate systematically the implications for consumer choice of perspective and self-control regret.

#### CONSEQUENCES OF SELF-CONTROL REGRETS FOR CONSUMER CHOICE

The results presented so far indicate that a broader temporal perspective magnifies the regret of choosing virtue and correspondingly reduces the regret of choosing indulgence. Consistent with the conceptual framework, the shift in the dominant self-control emotion (guilt vs. missing out) was shown to mediate the effects of perspective on regret. An intriguing question that has important implications for both consumers and marketers is whether reversals in self-control regrets can affect immediate preferences. In particular, would evaluating distant past decisions or anticipating distant future regret increase the tendency to indulge?

Prior research has demonstrated that consumers' choices can be systematically influenced by the anticipation of future regret (e.g., Greenleaf 2004; Simonson 1992; Zeelenberg 1999). In the context of self-control related behaviors, Richard et al. (1998) demonstrated that respondents who were asked to anticipate the regret associated with engaging in unsafe sex were subsequently more likely to use contraceptives. Indeed, despite the dearth of empirical research on self-control regrets, a basic assumption underlying extant theories in this field is that the regret of prior (or the anticipated regret of future) lapses of control motivates the use of various pre-commitment devices (Ainslie 1975; Schelling 1984).

Similar to the manner in which recalling or anticipating regrettable myopia drives attempts to correct or prevent such behavior, we propose that regret associated with overcontrol (hyperopia) will increase consumers' tendency to indulge. As we have shown earlier, selecting virtue over vice is more likely to evoke remorse when evaluated from a broader temporal perspective. Therefore, we expect that considering long-term (compared to short-term) regret will enhance the preference for indulgence and luxury. Further, consistent with the notion that consumers adopt a narrow perspective by default, we predict that long-term regrets will also increase choices of indulgence relative to situations in which consumers make choices without first considering self-control regret or when they anticipate regret at an unspecified future time.

**H3:** Considering the long-term regret of a self-control choice (in a retrospective or a prospective evaluation) will enhance the tendency to choose indulgence over virtue (compared to situations in which short-term regret is considered, regret at an unspecified future time is considered, or no regret is considered).

Next, we test hypothesis 3 using two methodologies. In study 5, we ask consumers to judge the regrets of others regarding a past decision and then make the same choice for themselves. In study 6, we examine the effect of asking participants to anticipate their own future regret about a real impending choice. In both studies, we vary the temporal separation between the (past or current) choice and its subsequent evaluation; we also include a no-regret, control condition. In addition, using a process measure, these studies also allow us to explore the different mindsets induced by narrow versus broad perspectives. Specifically, we proposed that a more global perspective enables consumers to recognize the accumulation of missed opportunities to enjoy life and create special memories (e.g., Elster and Loewenstein 1992). Accordingly, we expect respondents to explicitly refer to such considerations when asked to explain their long-term (but

not short-term) regrets. Finally, in a subsequent section, we examine the consequences of self-control regret for real choices that are (seemingly) unrelated to the past decision being regretted.

#### Study 5: The Effects of Judging Others' Regret on Personal Choice (Hypothesis 3)

*Method.* Ninety-one respondents (train station travelers) were randomly assigned to one of three conditions: (a) a near-past choice condition (i.e., two hypothetical individuals were described as making choices yesterday), (b) a distant-past choice condition (i.e., the same two individuals were described as making the identical choices twenty years ago), or (c) a control, no-regret condition (i.e., no individuals or past choices were described). In the first two (regret) conditions, a self-control dilemma was presented with one of the described individuals choosing the more pleasurable, indulgent option (i.e., going on vacation) and the second individual choosing the more righteous option (i.e., working and receiving a very high salary).

Respondents assigned to either of the first two (regret) conditions were asked to indicate which individual currently felt greater regret about the past decision. They were then asked to explain their regret judgment in writing. Finally, these respondents were asked to indicate what they would choose if they personally had to make the same choice (between vacationing and working) at the present. Respondents assigned to the control condition did not read about any individuals and were not asked to judge past regret. These respondents simply chose for themselves between vacationing and working (and receiving the very high salary) at the present.

*Results.* As predicted by hypothesis 1, greater temporal perspective led to a significant higher share of respondents who indicated that the individual who had chosen work would feel greater regret than the individual who had chosen vacation (72% vs. 43% in the distant vs. near past condition, respectively;  $t = 2.4$ ;  $p = .01$ ). More importantly, the results supported hypothesis 3 and indicated that considering long-term regret (rather than short-term or no regret) enhanced

the preference for indulgence. In particular, respondents who judged the regret of a distant rather than a near past decision were significantly more likely to select vacation over work when making a current choice for themselves (63% vs. 40%, respectively;  $t = 1.8$ ;  $p < .05$ ). Further, as predicted, respondents who judged the regret of a distant past decision were also significantly more likely to select vacation compared to control respondents who did not judge regret (63% vs. 38%, respectively;  $t = 2.0$ ;  $p < .05$ ).

To gain greater insights into the mindset underlying the observed reversal in self-control regrets, we contrasted respondents' explanations for their regret judgments between the two temporal perspective conditions. We sorted explanations according to whether they included the following terms: life, long-term, lifetime, (special) memory/ies, remember(ing), and memorable experience. When regrets about near past choices were explained, only 10% (3/30) of respondents' explanations included such terms, compared to 53% (17/32) when distant past choices were evaluated ( $t = 4.2$ ;  $p < .001$ ). To illustrate, the following explanations (obtained in the distant past condition) contained terms related to enjoying life and creating memories: "a vacation may be a memory for your entire life," "life is not all about making money," and "vacations are a special time and can never be recovered." This analysis supports the assertion that a broader temporal perspective can help consumers recognize the risk of chronically missing out on hedonic experiences and, more generally, can motivate consumers to consider "what life is all about."

However, in study 5 we tested hypothesis 3 using past decisions that respondents did not actually make and choices that were hypothetical. Although the findings were consistent with our analysis, it is not clear that regret would actually influence consumer preferences when the relevant choice is real. Thus, in studies 6 and 7 we investigate the impact of self-control regret on preference by using actual regrets and real choices.

### Study 6: The Effect of Anticipated Regret on Real Choices (Hypothesis 3)

In this study, we examine the effect of anticipating regret about an impending, real self-control dilemma on the way this dilemma is resolved. To test the hypothesis that a broader perspective enhances choices of indulgence, we ask participants to anticipate their regret in either the near or distant future. We also include two control conditions in which participants make real choices, either after they anticipate their regret at an unspecified future time, or without first anticipating their regret at all. Based on the results of study 4, we expect greater regret about choosing virtue over indulgence when the prospective evaluation is delayed (compared to when it is proximal or when its timing is unspecified). Accordingly, consistent with hypothesis 3, we predict that respondents who anticipate their distant future regret will select more indulgence compared to respondents who (1) anticipate their near future regret, (2) anticipate their regret at an unspecified future time, or (3) do not anticipate regret.

*Method.* Participants (122 students at a large East Coast university) were randomly assigned to one of four conditions: (a) a distant-future anticipated regret condition, (b) a near-future anticipated regret condition, (c) an unspecified-future anticipated regret condition (i.e., the timing of the prospective evaluation was not mentioned), or (d) a control, no-regret condition. Participants in all four conditions were informed that the research was about how people can make better choices. They were then offered a real choice between two lottery prizes and were told that the actual lottery drawing will take place on the evening of the same day. Participants were instructed to tear off the bottom half of the lottery form and to keep it as a receipt. This lottery receipt had a number on it and a Website address on which participants could subsequently check whether they had won.

The two prizes, representing a utilitarian necessity (i.e., a relative virtue) and an item of indulgence were, respectively, (a) “a \$30 voucher toward free purchases at [a local chain of] drug stores (valid until 2005)” and (b) “a one year subscription to [a popular weekly guide to local nightlife and entertainment].” The description of the utilitarian prize depicted the logo of the drug chain, whereas the description of the indulgence prize depicted two recent covers of the magazine and the statement “indulge in [local city] with this fun weekly guide to nightlife, entertainment, dining, and the hottest events in the city.”

Before selecting their prize, participants in the three anticipated-regret conditions were asked to predict which choice would cause them greater regret when evaluated in ten years (condition a), one day (condition b), or sometime (condition c) in the future. Participants rated their anticipated regret on a seven-point scale, with higher [lower] ratings representing greater anticipated regret for choosing the utilitarian [indulgence] prize. Then, after choosing the prize they wish to receive in case they win (and keeping the bottom half of the lottery form as their receipt), these participants were asked to explain their regret judgment in writing. Next, they were asked to imagine that they had just chosen the entertainment and nightlife magazine subscription and were asked to rate how much feelings of guilt they thought they would experience when they evaluate their decision ten years (condition a), one day (condition b), or sometime (condition c) into the future. These guilt ratings were made on a seven-point scale ranging from “No feelings of guilt at all” (1) to “Very strong feelings of guilt” (7). Participants were then asked to imagine that they had just chosen the drug store subscription and were asked to rate (using a similar seven-point scale) how much feelings of missing out they thought they would experience when they evaluate their decision at a future time (corresponding to the time frame of each condition).

Participants assigned to the control, no-regret condition (d) were not asked to anticipate their future regret. These participants were simply asked to make a choice for themselves between the drug store voucher and the entertainment and nightlife magazine. Finally, before participants in all four conditions were debriefed and thanked, they were probed for suspicion and asked to indicate what they thought was the purpose of the study. None suspected that the study was related to different temporal perspectives or articulated the hypotheses being tested.

*Results.* As shown in figure 7 (upper panel), greater temporal perspective led to a significant increase in the anticipated regret of choosing the drug store voucher relative to the anticipated regret of choosing the entertainment and nightlife magazine (4.7 vs. 3.2 in the distant- vs. near-future anticipated regret condition, respectively;  $t = 3.0, p < .005$ ). This result supports hypothesis 1. Further, as predicted, the (relative) anticipated regret of choosing the drug store voucher was weaker for participants who predicted their regret in an unspecified-future time than in the distant-future (3.3 vs. 4.7;  $t = 2.7, p < .005$ ). Similar to study 4, there was a notable equivalence in the anticipated regrets of participants in the near- and unspecified-future conditions.

The guilt and missing out ratings of participants in conditions (a) through (c) supported hypothesis 2 (see figure 7, upper panel). In particular, the anticipated guilt due to a current choice of the entertainment magazine was significantly lower in the distant-future condition than in either the near- or the unspecified-future condition (1.8 vs. 3.2 and 3.1, respectively;  $t = 3.4$  and  $2.7$ , both  $p$ 's  $< .01$ ). In contrast, the anticipated feelings of missing out due to a current choice of the drug store voucher was directionally higher in the distant-future condition than in either the near- or the unspecified-future condition (3.0 vs. 2.8 and 2.5, respectively). To test whether such emotions mediated the effect of perspective on regret, we created a measure of self-control emotions (by subtracting participants' missing out rating from their guilt rating). A mediation analysis revealed

that self-control emotions significantly affected ( $F(1, 82) = 23.8, p < .001$ ) the dependent variable (regret) when the independent variable (temporal perspective of anticipated regret) was also included in the analysis, and thus, the effect of the independent variable on the dependent variable was partially attenuated ( $F(2, 82) = 2.7, p = .07$ ). The reduction in the mean squares indicates that 56% of the effect of temporal perspective was mediated by self-control emotions.

More importantly, consistent with hypothesis 3, the timing of the prospective regret had a significant effect on participants' (real) lottery choices. As illustrated in figure 7 (lower panel), sixty eight percent (21/31) of participants who anticipated their regret in the distant-future chose the magazine over the drug store voucher, compared to only 34% (11/32) of participants who anticipated their regret in the near-future and 38% (11/29) of participants who anticipated their regret at an unspecified future time ( $t = 2.8$  and  $2.4$ , respectively; both  $p$ 's  $< .01$ ). Further, as predicted, the choices of (control) participants who did not predict future regret mirrored the choices of those who anticipated either near-future or unspecified-future regret. Specifically, only 40% (12/30) of control participants chose the magazine, a share that is significantly lower than that observed in the distant-future anticipated regret condition ( $t = 2.3, p = .01$ ). Thus, as predicted, anticipating longer-term regret enhanced the tendency to indulge compared to all other conditions.

An examination of participants' explanations of their anticipated regret revealed that explicit references to such considerations as enjoying life and creating special memories were significantly more prevalent under broader perspective (explanations were sorted according to the coding scheme used in study 5). When anticipating their distant-future regret, forty two percent (13/31) of the participants' explanations explicitly mentioned such considerations, compared to 0% (0/32) and 3% (1/29) when near-future and unspecified-future regrets were anticipated, respectively ( $t = 4.7$  and  $4.1$ , respectively; both  $p$ 's  $< .001$ ). Examples of such explanations



included “[the magazine] can lead to great experiences... it is memories of trips to great museums or great concerts that make life better,” and “... the idea of missing an event I might regret missing (if it were not for [the magazine]) 10 years from now helped me put practicality aside!... if I won and still missed out on some cool [magazine] advertised events (because I chose the coupon) I’d regret it.” The analysis of participants’ explanations supports the notion that a broader perspective highlights the importance of accumulating pleasurable experiences and memories over life.

Further, the finding that the explanations of participants in the unspecified-future condition were very similar to those of participants in the near-future condition suggests that consumers’ default perspective is rather narrow. Next, we investigate whether self-control regret can also influence (supposedly) unrelated real choices between virtue and indulgence.

#### Study 7: Consequences of Regretting Self-Control Decisions for Unrelated Choices (Hypothesis 4)

The previous two studies tested the impact of regret regarding self-control choices on how consumers make the very same choices. A question that naturally arises is whether self-control regrets can affect preference when the current choice is (seemingly) unrelated to the past decision being regretted. In addition to investigating this question, the present study seeks to generalize the earlier results by examining the effect of real (experienced) regret about actual past decisions. Studies 5 and 6, by contrast, explored the effects of judging the regret of others and anticipating the future regret of oneself, respectively.

Prior research suggests that regretting the past can indeed change present behavior and decisions. Lecci, Okun, and Karoly (1994) show that regret is an important part of people’s current goal system. They find that regrets represent a past desired goal state whose discrepancy with reality motivates change and corrective action. Indeed, considerable research has demonstrated that individuals regulate current goal functioning based on feedback from previous

performance (e.g., Carver and Scheier 1990). Similarly, focusing cognitive attention on a past, unattained goal has been found to facilitate responsiveness to future similar goals, thereby increasing the likelihood of subsequent goal attainment (Anderson 1983).

Building on these findings, we suggest that regretting past self-control decisions would motivate consumers to make corrective choices in the present, even when such choices are not directly related to the object of regret. That is, consumers are expected to counteract their perceived deficit or excess in past indulgence.

To test this prediction, we manipulate participants' regrets using the methodology employed in study 2. Participants are asked to think about a (near or distant) past self-control dilemma, in which they eventually chose either virtue or vice. Based on the earlier results, participants are expected to experience substantial regret when considering distant (but not near) past hyperopia (choices of virtue over vice). Accordingly, we expect that reflecting on distant past hyperopia will lead to a high share of choices of (unrelated) items of indulgence. Correspondingly, participants are expected to experience substantial regret when considering near (but not distant) past choices of vice, and therefore, we predict that reflecting on recent pleasure will lead to a depressed share of choices of indulgence. We also include a control condition, in which participants consider regrets unrelated to self-control. Such regrets are not expected to activate any self-control related goals, and therefore, should lead to an intermediate tendency to choose indulgence that mirrors the choices of participants in the low self-control regret conditions (i.e., near choices of virtue and distant choices of vice).

**H4:** Self-control regrets will affect the tendency to indulge even when the current choice is unrelated to the past decision being regretted.

*Method.* Participants were 103 students in a large East Coast university. To manipulate regrets of actual past self-control choices, participants were randomly assigned to one of four treatment conditions in a 2 (temporal perspective: near vs. distant past) x 2 (self-control decision: work/study vs. pleasure) between-subjects design. As described subsequently, a fifth of the participants were assigned to a control group. In all treatment conditions, participants were asked to think about a situation, which occurred either last week or at least five years ago (near vs. distant past, respectively), and in which they had to choose between working or studying and doing something else they enjoyed more. To manipulate participants' resolutions of their past self-control dilemma, they were told to think about such a situation in which they eventually chose either the work/study or the pleasure (manipulated between subjects). In all treatment conditions, participants were asked to describe in writing both the work/study and the pleasure alternatives and their chosen course of action.

Participants assigned to the control group were given similar instructions, but instead of thinking about a work/study versus pleasure decision, they were asked to consider a situation in which they had to choose between using a disposable product and a non-disposable product (i.e., a decision unrelated to self-control and indulgence). Similar to the treatment conditions, participants in the control group were randomly assigned to one of four sub-conditions in a 2 (temporal perspective: near vs. distant past) x 2 (decision: disposable vs. non-disposable product) between-subjects design. These participants were asked to describe in writing both the disposable and the non-disposable product alternatives and their chosen course of action.

Participants in all conditions (treatment and control) were asked to describe in writing how they felt at the present when thinking about their past choice. Next, they were asked to rate

the extent to which they currently regretted their past choice. Ratings were made on a seven-point scale ranging from “No regret at all” (1) to “A lot of regret” (7).

After completing the questionnaire, participants in all conditions received a “thank you” form. The form indicated that, as a token of appreciation, participants could choose one of two rewards, which they would receive immediately. The two rewards were (a) five dollars in cash and (b) four Swiss chocolate truffles. The description of the vice reward included a color brochure of the chocolates and indicated that they were highly praised by gourmets. To verify that participants did not choose the chocolates as a gift for others, the description explicitly mentioned that a gift box was not available. After making their choice and receiving their reward, participants were probed for suspicion and asked to indicate what they thought was the purpose of the study. None suspected that the questionnaire was meant to influence their choice of reward or articulated the hypotheses being tested.

*Results.* Consistent with hypothesis 1, the results indicate that the interaction between temporal perspective and self-control decision in determining the level of regret was significant and in the predicted direction ( $F(1,76) = 6.0, p < .05$ ).<sup>2</sup> As shown in figure 8 (upper panel), for participants who chose work or study over pleasure, the regret experienced at the present was greater for those who considered a distant rather than a near past self-control dilemma (2.5 vs. 1.4,  $t = 2.6, p < .01$ ). Further, for participants who chose pleasure over work or study, regret was directionally higher for those who considered a near rather than a distant past decision (2.8 vs. 2.2,  $t = 1.1, p < .15$ ). Thus, the temporal perspective of the post-decision evaluation had a diametrically opposed effect on the regret of righteousness compared to that of indulgence. Whereas participants

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<sup>2</sup> As expected, there was no interaction between perspective and choice of disposable versus non-disposable product in determining the regret of control participants (or their described feelings). We therefore do not elaborate on the regret and feeling measures in the control group, and report the choice results pooled across the four control sub-conditions.

who chose to work (or study) felt greater regret when assuming a broader perspective, participants who chose to enjoy themselves felt greater regret when taking a narrower perspective.

Participants current feelings about their past self-control choice were consistent with their experienced regret and supported the notion that virtue would be evaluated more favorably under a narrower ex-post perspective, whereas indulgence would be evaluated more favorably under a broader perspective. Specifically, two independent judges, who were unaware of the hypotheses, rated participants' listed feelings according to their valence. Ratings were made on a five-point scale ranging from "Very negative feeling" (-2) to "Very positive feeling" (2). The inter-judge reliability was 85%, and disagreements were resolved by averaging the ratings of the two judges.

Participants' feelings revealed a significant interaction between temporal perspective and self-control choice ( $F(1,76) = 4.7, p < .05$ ). As shown in figure 8 (middle panel), participants who chose work (or study) felt significantly less positive about their decision when it took place in the distant rather than the near past (0.6 vs. 1.6,  $t = 2.5, p < .01$ ). In contrast, participants who chose pleasure felt directionally less positive when their decision occurred in the near rather than distant past (0.5 vs. 0.9,  $t = .8, p > .1$ ). Figure 8 (middle panel) also suggests that whereas participants evaluating distal decisions felt worse about choosing virtue, participants considering recent decisions felt worse about choosing vice.

Finally, consistent with hypothesis 4, self-control regrets had a significant impact on (supposedly) unrelated choices of indulgence. As shown in figure 8 (right panel), participants who considered their regret about a past decision to work (or study) were significantly more likely to choose the chocolate reward when the evaluated decision occurred five years rather than a week ago (67% vs. 38%,  $t = 1.8, p < .05$ ). In addition, as predicted, considering regret about a decision from last week to enjoy rather than to work led to a very low rate of choices of the chocolate

(10%), which was significantly lower than the corresponding rate (33%) when the decision to enjoy occurred five years ago ( $t = 1.8, p < .05$ ). With regards to the reward choices of control participants, these were quite similar to the choices of participants in the low self-control regret conditions (i.e., evaluating near decisions to work and distant decisions to enjoy), and thus lay between the choices observed in the high self-control regret conditions. In particular, 26% of control participants choose the chocolate reward, a share that is significantly lower than that of participants who made distant decisions to work ( $t = 2.8, p < .005$ ) and marginally significantly higher than that of participants who made near decisions to enjoy ( $t = 1.4, p < .1$ ).

In summary, the results of the present study replicated the earlier findings that greater perspective increases regret of hyperopia and decreases regret of indulgence. More importantly, the results support the notion that self-control regret can activate a “balancing” goal, whereby perceived deprivation or excess of indulgence motivates counteractive choices.

#### Consequences of Self-Control Regret for Consumer Choice (Studies 5 – 7): Discussion

Using different methodologies and self-control dilemmas we demonstrated that the reversal of self-control regrets can affect immediate preferences. Choices of indulgence increased when participants judged the long-term rather than short-term regrets of others (study 5), anticipated their own regret at the distant rather than near future (study 6), and reflected on their regret regarding an actual past decision that they made in the distant rather than recent past (study 7). The final study provided particularly strong support for the notion that long-term regret can increase indulgence, as participants were unaware that their choice (supposedly between two rewards for a study) was related to, or affected by, their regret.

The results were also consistent with the finding that the effect of perspective on regret is mediated by the decline in indulgence guilt and persistence and even accumulation in feelings of

missing out. Process measures provided additional evidence that such variations in self-control emotions underlie the impact of perspective on regret and choice. Participants' regret explanations revealed that broader perspective primed concerns of chronically missing out on the pleasures of life. Further, consistent with the dominance of feelings of missing out in broad evaluations and of guilt in narrow evaluations, participants felt worse about more distal choices to work rather than to indulge, but felt worse about more proximal choices to indulge. Thus, changes in perspective give rise not only to different self-control regrets, but also to different emotions, mindsets, and choices.

The findings also indicate that consumers do not spontaneously consider long-term regrets. Specifically, in all three studies, control-condition participants, who did not consider self-control regrets, made choices that were remarkably similar to those made by participants who considered short-term regrets. Likewise, when participants predicted their self-control regret at an unspecified future time (study 6), both their anticipated regrets and their subsequent choices paralleled those of participants who anticipated near-future regrets. The notion that consumers' default perspective is narrow, giving rise to local decision rules that emphasize prudence and necessity, may help explain the finding that many consumers suffer from insufficient indulgence and hyperopia (Kivetz and Simonson 2002a).

## GENERAL DISCUSSION

Despite the voluminous literature on problems of self-control and time-inconsistency, there is scant empirical research on the regret potentially associated with these phenomena. Nonetheless, the traditional view is premised on the notion that consumers regret their past myopia and indulgence (cf. Shiv and Federikhin 1999). In the present research, we questioned the universality of this assumption, and proposed that in the long-run consumers often regret

hyperopia, that is, choices of virtue over vice. We tested this proposition using alternative methods and process measures, and examined the underlying mechanisms and the consequences of reversals in self-control regret.

#### Perspective Shifts in Self-Control Emotions, Regrets, and Choices

In a series of studies, involving both real and hypothetical choices and regrets, we showed that greater temporal separation between decisions and their (retrospective or prospective) evaluations enhances regret of righteousness and decreases regret of indulgence. This pattern was observed using different methodologies and time frames, and a variety of consumption contexts and self-control dilemmas. These results are consistent with the findings of another (unpublished) study, in which we asked respondents to reflect on their experiences from either last week or four years ago (manipulated between-subjects) and indicate whether they generally regretted “not having enough self-control” or “having too much self-control” (using the definitions mentioned in study 3; respondents were also given the option of indicating that they had no regrets). The results of this study indicated that, while respondents regretted not having enough self-control in the recent past, they regretted having too much self-control in the distant past. Thus, the effect of perspective on self-control regret seems quite general, extending to multiple consumption contexts and possibly global assessments of life.

Relatedly, while we mainly focused on manipulations of temporal perspective (i.e., varying the timing of choices and their retrospective or prospective evaluations), future research can explore whether the effect generalizes to situations in which temporal perspective is measured using natural variations in time. It would be particularly interesting to contrast the self-control emotions, regrets, and choices of individuals from different age groups (e.g., emeritus vs. junior professors). We took a first step in this direction in study 3 by comparing the regrets and



emotions of alumni reflecting on a college winter break from 40 years ago with those of current students reflecting on a winter break from either last year or last week. The results suggest that aging may afford a broader perspective on life, which in turn alleviates indulgence guilt, aggravates feelings of missing out, and consequently engenders regrets of hyperopia.

We showed that the effect of broader perspective on self-control regret is mediated by the decay of guilt relative to the persistence and often intensification of feelings of missing out. Apparently, perspective immunizes consumers against indulgence guilt and enables them to recognize the importance of hedonic experiences that enrich and enhance the quality of life. Without such perspective (e.g., in the short-run), choosing indulgence evokes (and is expected by consumers to evoke) considerable regret.

Finally, we demonstrated that reversals in self-control regrets significantly affect immediate, real choices. Specifically, although most consumers prefer virtue over vice after considering short-term regret, anticipating regret at an unspecified time, or not considering any regret at all, a majority chooses indulgence after considering long-term regret. The effect of regret on choice can be seen as another illustration of the construction of preferences (e.g., Bettman, Luce, and Payne 1998; Payne, Bettman, and Johnson 1992; see also Simonson 1992).

The findings of this research can be viewed in a wider context of situations where there is a tension between broad and narrow framing of decision problems. For example, Kahneman and Lovallo (1993) distinguish between an inside and outside perspective, whereby a given decision is viewed as unique under the former and as a case among a series of similar decisions under the latter (for related analyses see Benartzi and Thaler 1999; Prelec and Herrnstein 1992b). Read, Loewenstein, and Rabin (1999) integrate various findings related to narrow versus broad perspective taking (or “bracketing”) and argue that the latter generally leads to better choices that

“often involve putting up with small discomforts or annoyances in order to achieve long-term gain” (p. 191). To the extent that local choices outweigh hyperopic rules and lead to chronic underconsumption of indulgence (Kivetz and Simonson 2002a), our current findings indeed suggest that a broader perspective may improve decision-making in that it increases regret of hyperopia. Interestingly, however, we find that long-term regret promotes seeking of immediate pleasure, which may appear contradictory to the notion that broader perspective will lead to maximizing long-term benefits. Next, we reconcile these findings and, more generally, discuss the co-existence of myopic and hyperopic self-control problems.

#### Toward a Reconciliation of Myopic and Hyperopic Self-Control

The classic literature on self-control focuses on myopia and assumes that consumers regret yielding to hedonic temptations. An alternative approach suggests that consumers sometimes suffer from excessive farsightedness and future-biased preferences, consistently delaying pleasure and overweighing necessity and virtue in local decisions. Consistent with this approach, the findings of the present research indicate that consumers repent hyperopia in the long-run, when the effect of indulgence guilt is diminished and feelings of missing out on the pleasures of life are stronger.

How, then, can one reconcile the findings related to myopia and hyperopia? First, it is important to emphasize that these phenomena can co-exist, not only across individuals, but also within an individual. A person might have difficulty resisting sweets and cigarettes, yet also have a tendency to overwork and perpetually postpone vacations.

Second, we suggest that regret of myopia is more likely for *self-control lapses*: situations in which consumers clearly identify an optimal decision (i.e., choosing the farsighted option), but nevertheless transgress due to various factors that loom large in the here and now (e.g., visceral and affective influences; ego-depletion). During such self-control lapses, consumers are typically

aware of the sub-optimality of the (myopic) vice. Further, such vices are often “weak temptations,” that is, they are unattractive when evaluated outside of the immediate consumption context. For example, while a person may have difficulties waking in the morning or closing the television at night, forfeiting oversleeping or late TV viewing does not evoke feelings of missing out. The analysis of self-control lapses suggests that the guilt associated with such failures may persist and can explain why yielding to certain temptations evokes considerable regret in the long-run.

In contrast, the present research investigated what can be labeled as *self-control dilemmas*: situations in which the optimal choice is not transparent. The dilemma is due to the fact that the option representing indulgence is inherently valuable and is not dominated by the farsighted option. In such cases, an intra-personal tussle between desire and need emerges and is often resolved using local decision rules that overweigh necessity and virtue. However, when such indulgence is evaluated from a broader (temporal) perspective, its forfeiture evokes missing out whereas its selection leads to relatively lower guilt. Thus, choosing virtue over indulgence in self-control dilemmas generates increasing regret in the long-run. Future research could examine more closely the relationship between myopic and hyperopic self-control problems, investigate the factors that determine the susceptibility to each, and construct a unifying model that can account for any form of time-inconsistency (see Bénabou and Tirole 2004).

#### Relating Self-Control Regret to Perspective-Dependent Theories

Several prominent theories have emerged regarding the effects of perspective and time on mental representation, preference, and regret. The mechanisms identified by these theories might affect perspective changes in self-control regret through processes that are unrelated to indulgence guilt and missing out. In this section, we discuss the relationship of our conceptual framework to other perspective-dependent theories, and examine alternative explanations for the results.

*Action versus Inaction Regrets.* Gilovich and Medvec (1995) show that people's regrets follow a systematic time course: actions (errors of commission) evoke more regret in the short-term, but inactions (errors of omission) create more regret in the long-term. We went to great pains to ensure that the self-control regrets we studied did not confound actions and inactions. Specifically, with the exception of study 3, all of the investigated regrets related to alternative courses of action (e.g., partying vs. working, eating cake vs. fruit salad). In study 3, we focused on regrets of two opposing sets of inactions, involving either insufficient indulgence (e.g., not spending enough) or insufficient righteousness (e.g., not saving enough). Thus, the temporal pattern of regrets of action and inaction cannot explain the finding that greater temporal perspective enhances [decreases] the regret associated with choosing virtue [indulgence]. It can, however, contribute to such a phenomenon, particularly when consumers evaluate a past self-control dilemma framed as "to indulge or not to indulge?" In such cases, the righteous decision to refrain from indulging may be viewed as an error of omission, thereby generating increasing regret.

*Construal Level Theory.* According to construal level theory (hereafter CLT; Trope and Liberman 2003a), distant-future outcomes are represented in terms of a few abstract features that convey the perceived essence of the event (high-level construals), whereas near-future outcomes are represented in terms of concrete, incidental details (low-level construals). Based on CLT, Trope and Liberman (2003b, p. 269-270) suggest that "self-controlling... decisions would become more likely for more temporally removed situations" and "self-control failures (deciding to smoke a cigarette) are more likely in a close temporal perspective than long in advance." They explain these predictions based on the notion that "self-control failure stems from failing to attend to the high-level aspects of an immediate behavior." Thus, CLT predicts that myopia would be less prevalent in distant-future decisions and would be evaluated more negatively

under a broader temporal perspective (see also Trope and Liberman 2000). The theory, then, would not predict our findings that choosing short-term pleasure over a more prudent alternative evokes less regret (and consequently is more prevalent) when evaluated at a temporal distance. It is also important to note that, while CLT relies on a cognitive process, the present research demonstrates that emotional factors (i.e., feelings of guilt and missing out) mediate the temporal variation in self-control regrets.

It would be interesting to examine in future research whether other dimensions of perspective or psychological distance (Lewin 1951, Trope and Liberman 2003a) give rise to similar reversals in self-control regret. For example, when consumers are geographically distant from their everyday habitat, they are less likely to be preoccupied with daily distractions and may have the opportunity to consider their long-term regret and global goal of a more balanced and enjoyable life. Indeed, Landman (1993, p. 201) suggests that “the physical and psychological distance associated with leisure, travel, and vacation can serve to arouse regret, ... in part by confronting us with novel stimuli, perceptions, and experiences that break down our usual defenses while at the same time showing us what might have been... Travel is after all, notorious for its ability to give us ‘perspective.’”

*Mortality Salience.* Building on terror management theory, Ferraro, Shiv, and Bettman (2004) recently demonstrated that awareness of one’s mortality leads to more indulgent food choices. The present research shows that a similar effect can be obtained by prompting consumers to consider their long-term regrets. Future research could examine the relation between mortality salience and broader temporal perspective. For example, one way in which mortality salience might increase indulgence is by affording a greater perspective on life. Further, although mortality salience cannot explain the finding that even a short variation in temporal perspective (e.g., a year

vs. a week in study 3) enhances regret of hyperopia (among relatively young subjects), it may contribute to the effect when consumers are anticipating extremely long-term regret.

#### Implications for Marketers and Consumers of Indulgences and Luxury Goods

Marketers of luxury goods often try to appeal to consumers' need for creating pleasurable and memorable experiences (Schmitt 2003). The findings presented in this paper suggest that while consumers are not always aware of this need when making local decisions, they regret neglecting such aspects when considering their lives from a broader perspective. Thus, self-control regret and its impact on choice provide an opportunity for marketers, who, by asking consumers to consider their long term regrets, could encourage consumers to pamper themselves, and enhance the post-purchase satisfaction and repurchase likelihood of luxury goods.

The present research also has important implications for consumers. By assessing their regrets, choices, and lives from a broader perspective, individuals who chronically deprive themselves of pleasure and luxury may realize and remedy such a tendency. Thus, although ex-ante consumers perceive virtue as providing long-term benefits and indulgence as entailing delayed costs, myopia may be farsighted after all. In the long run, indulging can lead to less regret and more satisfaction.

## REFERENCES

- Ainslie, George (1975), "Specious Reward: A Behavioral Theory of Impulsiveness and Impulse Control," *Psychology Bulletin*, 82 (April), 463-496.
- Anderson, John R. (1983), *The Architecture of Cognition*, Cambridge, MA: Harvard.
- Baron, Reuben M. and David A. Kenny (1986), "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations," *Journal of Personality and Social Psychology*, 51 (6), 1173-1182.
- Baumeister, Roy F. (2002), "Yielding to Temptation: Self-Control Failure, Impulsive Purchasing, and Consumer Behavior," *Journal of Consumer Research*, 28 (March), 670-676.
- \_\_\_\_\_, Todd F. Heatherton, and Dianne M. Tice (1994), *Losing Control: How and Why People Fail at Self-Regulation*, San Diego, CA: Academic Press.
- Benabou, Ronald and Jean Tirole (2004), "Willpower and Personal Rules," forthcoming, *Journal of Political Economy*.
- Benartzi, Shlomo, and Richard Thaler (1999), "Risk Aversion or Myopia? Choices in Repeated Gambles and Retirement Investments," *Management Science*, 45 (3), 364-381.
- Berry, Christopher J. (1994), *The Idea of Luxury: A Conceptual and Historical Investigation*, New York, NY: Cambridge.
- Bettman, James R., Mary Frances Luce, and John W. Payne (1998), "Constructive Consumer Choice Processes," *Journal of Consumer Research*, 25 (3) (December), 187-217.
- Carver, Charles S. and Michael F. Scheier (1990), "Principles of Self-Regulation: Action and Emotion," in *Handbook of Motivation and Cognition: Foundations of Social Behavior*, ed. E. Tory Higgins and Richard M. Sorrentino, New York: Guilford.

- Elster, Jon (1979), *Ulysses and the Sirens: Studies in Rationality and Irrationality*, New York, NY: Cambridge.
- Elster, Jon and George Loewenstein (1992), "Utility From Memory and Anticipation," in *Choice Over Time*, ed. George Loewenstein and Jon Elster, New York, NY: Sage, 213-234.
- Ferraro, Rosellina, Baba Shiv, and James R. Bettman (2004), "Let Us Eat and Drink, For Tomorrow We Shall Die (Isaiah xxii.13): Mortality Salience and Indulgent Food Choices," working paper.
- Gilovich, Thomas and Victoria Husted Medvec (1995), "The Experience of Regret: What, When, and Why," *Psychological Review*, 102 (2), 379-395.
- Gollwitzer, Peter M. and Gordon B. Moskowitz (1996), "Goal effects on thought and behavior," in *Social Psychology: Handbook of Basic Principles*, ed. E. Tory Higgins and Arie W. Kruglansky, New York: Guilford.
- Greenleaf, Eric A. (2004), "Reserves, Regret and Rejoicing in Open English Auctions," forthcoming, *Journal of Consumer Research*, 31 (September).
- Hoch, Steve and George Loewenstein (1991), "Time-Inconsistent Preferences and Consumer Self-Control," *Journal of Consumer Research*, 17 (March), 492-507.
- Kahneman, Daniel and Dan Lovallo (1993), "Timid Choices and Bold Forecasts: A Cognitive Perspective on Risk Taking," *Management Science*, 39(1), 17-31.
- Kivetz, Ran and Itamar Simonson (2002a), "Self-Control for the Righteous: Toward a Theory of Precommitment to Indulge," *Journal of Consumer Research*, 29 (September), 199-217.
- \_\_\_\_\_ (2002b), "Earning the Right to Indulge: Effort as a Determinant of Customer Preferences Towards Frequency Program Rewards," *Journal of Marketing Research*, 38 (2), 155-170.
- Landman, Janet (1993), *Regret: The Persistence of the Possible*, NY: Oxford.

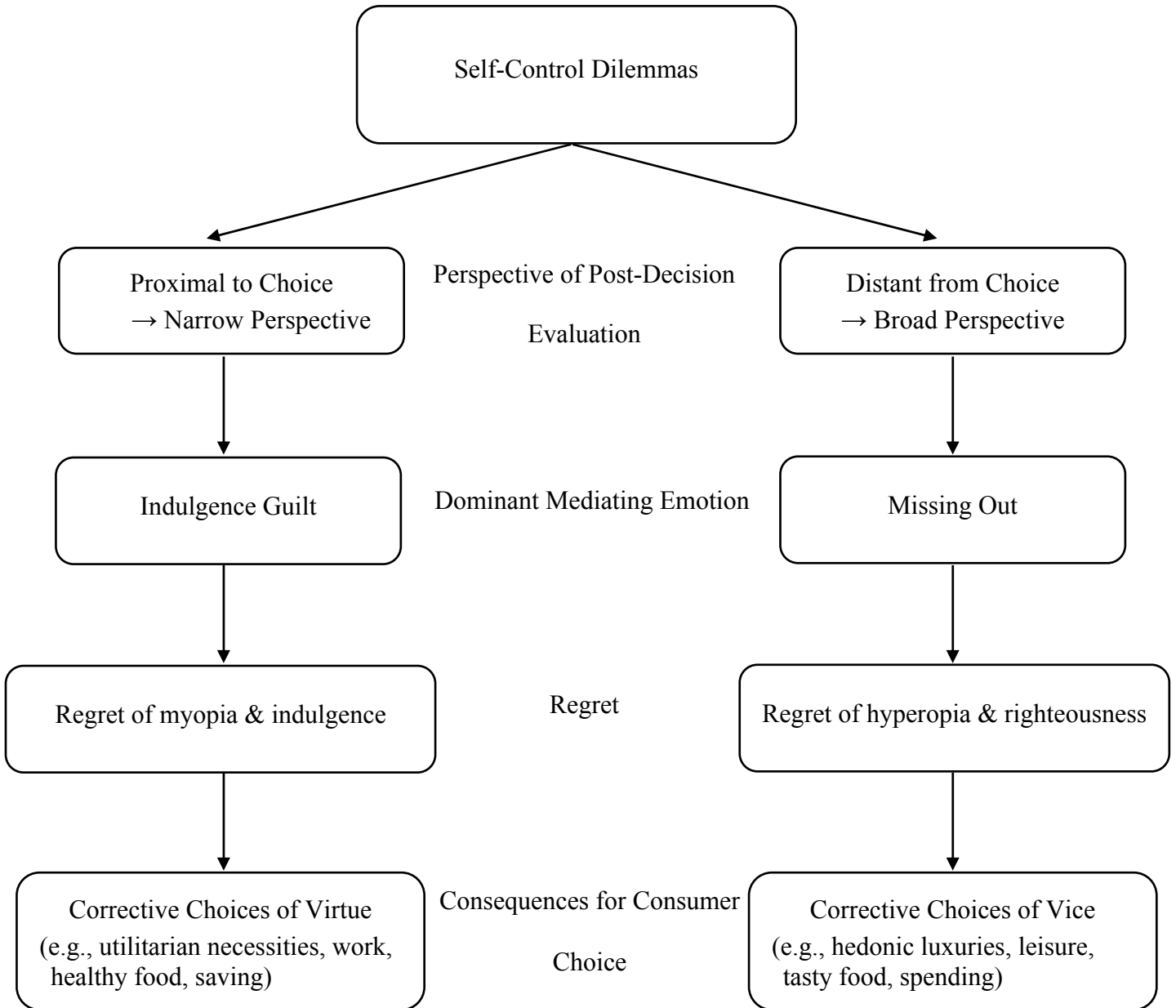


- Lecci, Len, Morris Okun and Paul Karoly (1994), "Life Regrets and Current Goals as Predictors of Psychological Adjustment," *Journal of Personality and Social Psychology*, 66(4), 731-741.
- Lewin, Kurt (1951), *Field Theory in Social Science*. New York: Harper.
- Loewenstein, George F. (1996), "Out of Control: Visceral Influences on Behavior," *Organizational Behavior & Human Decision Processes*, 65 (3), 272-292.
- Maslow, Abraham H. (1970), *Motivation and Personality*, New York: Harper.
- Metcalfe, Janet and Walter Mischel (1999), "A Hot/Cool-System Analysis of Delay of Gratification: Dynamics of Willpower," *Psychological Review*, 106 (1), 3-19.
- Mischel, Walter (1974), "Processes in Delay of Gratification," in *Advances in Experimental Social Psychology*, ed. Leonard Berkowitz, San Diego: Academic.
- Mischel, Walter Nancy Cantor, and Scott Feldman (1996), "Principles of Self-Regulation: The Nature of Willpower and Self-Control," in *Social Psychology: Handbook of Basic Principles*, ed. Edward T. Higgins and Arie Kruglanski, New York, NY: Guilford, 329-360.
- Mukhopadhyay, Anirban and Gita Venkataramani Johar, "Where there is a Will, is there a Way? Effects of Lay Theories of Self-Control on Setting and Keeping Resolutions," *Journal of Consumer Research*, (in press).
- O'Guinn, Thomas C. and Ronald J. Faber (1989), "Compulsive Buying: A Phenomenological Exploration," *Journal of Consumer Research*, 16 (2), 147-157.
- Parker, Dianne, Stephan G. Stradling and Antony S. R. Manstead (1996), "Modifying Beliefs and Attitudes to Exceeding the Speed Limit: An Intervention Study Based on the Theory of Planned Behavior," *Journal of Applied Social Psychology*, 26, 1-19.
- Payne, John W., James R. Bettman, and Eric J. Johnson (1992), "Behavioral Decision Research: A Constructive Processing Perspective," *Annual Review of Psychology*, 43, 87-131.

- Prelec, Drazen and Richard J. Herrnstein (1991), "Preferences or Principles: Alternative Guidelines for Choice," in *Strategy & Choice*, ed. R. J. Zeckenhauer, Cambridge, MA: 319-340.
- Prelec, Drazen and Richard J. Herrnstein (1992a), "A Theory of Addiction", in *Choice Over Time*, ed. George Loewenstein and Jon Elster, New York: Sage.
- \_\_\_\_\_ (1992b), "Melioration", in *Choice Over Time*, ed. G. Loewenstein and J. Elster, NY: Sage.
- Prelec, Drazen and George Loewenstein (1998), "The Red and the Black: Mental Accounting of Savings and Debt," *Marketing Science*, 17 (1), 4-28.
- Read, Daniel, George Loewenstein, and Matthew Rabin (1999), "Choice Bracketing," *Journal of Risk and Uncertainty*, 19, 171-179.
- Richard, Rene, Nane K. de Varies and Joop van der Pligt (1998). Anticipated Regret and Precautionary Sexual Behavior," *Journal of Applied Social Psychology*, 28, 1411-1428.
- Schelling, Thomas C. (1984), "Self-Command in Practice, in Policy, and in a Theory of Rational Choice," *American Economics Association Proceeds*, 74 (May), 1-11.
- \_\_\_\_\_ (1992), "Self-Command: A New Discipline," in *Choice Over Time*, ed. George Loewenstein and Jon Elster, New York, NY: Sage, 167-176.
- Scitovsky, Tibor (1992), *The Joyless Economy*, Revised edition, New York, NY: Oxford.
- Shafir, Eldar, Itamar Simonson, and Amos Tversky (1993), "Reason-Based Choice," *Cognition*, 49 (1-2), 11-36.
- Shiv, Baba and Alexander Federikhin (1999), "Heart and Mind in Conflict: The Interplay of Affect and Cognition in Consumer Decision Making," *Journal of Consumer Research*, 26 (December), 278-292.
- Simonson, Itamar (1992), "The Influence of Anticipating Regret and Responsibility on Purchase Decisions," *Journal of Consumer Research*, 19 (June), 105-117.

- Simonson, Itamar and Stephen M. Nowlis (2000), "The Role of Explanations and Need for Uniqueness in Consumer Decision Making: Unconventional Choices Based on Reasons," *Journal of Consumer Research*, 27 (June), 49-68.
- Strotz, Robert H. (1955), "Myopia and Inconsistency in Dynamic Utility Maximization," *Review of Economic Studies*, 23 (3), 165-180.
- Thaler, Richard H. (1980), "Toward a Positive Theory of Consumer Choice," *Journal of Economic Behavior and Organization*, 1, 39-60.
- \_\_\_\_\_ (1985), "Mental Accounting and Consumer Choice," *Marketing Science*, 4 (Summer), 199-214.
- Thaler, Richard H. and Hershey M. Shefrin (1981), "An Economic Theory of Self-Control," *Journal of Political Economy*, 89 (April), 392-410.
- Trope, Yaacov and Ayelet Fishbach (2000), "Counteractive Self-Control in Overcoming Temptation," *Journal of Personality and Social Psychology*, 79 (4), 493-506.
- Trope, Yaacov and Nira Liberman (2000), "Temporal Construal and Time-Dependent Changes in Preference," *Journal of Personality and Social Psychology*, 79 (6), 876-889.
- \_\_\_\_\_ (2003a), "Temporal Construal," *Psychological Review*, 110 (3) 403-421.
- \_\_\_\_\_ (2003b), "Construal Level Theory of Intertemporal Judgment and Decision," in *Time and Decision*, eds. George Loewenstein, Daniel Read, and Roy Baumeister, New York: Sage.
- Weber, Max (1998), *The Protestant Ethic and the Spirit of Capitalism*, Los Angeles, CA: Roxbury.
- Werthenbroch, Klaus (1998), "Consumption Self-Control by Rationing Purchase Quantities of Virtue and Vice," *Marketing Science*, 17 (4), 317-337.
- Zeelenberg, Marcel (1999), "Anticipated Regret, Expected Feedback and Behavioral Decision Making," *Journal of Behavioral Decision Making*, 12 (December), 93-106.

FIGURE 1: SELF-CONTROL REGRETS --- A CONCEPTUAL FRAMEWORK



## FIGURE 2: SELF-CONTROL DILEMMAS (STUDY 1)

### Test 1: Dessert Choice

Imagine that [yesterday] [last year] [five years ago] Natalie and Jennifer went to a fancy restaurant to celebrate their graduation with their friends. They had to choose between two desserts: the restaurant's famous and delicious chocolate cake and a low-calorie, healthy fruit salad. Natalie chose the delicious chocolate cake. Jennifer chose the low calorie salad. Now that Natalie and Jennifer look back at [yesterday's celebration] [last year's celebration] [the celebration five years ago] who feels greater regret?

### Test 2: Cruise Choice

Imagine that [yesterday] [20 years ago] two couples (the Smiths and the Jones) were planning to go on a romantic cruise to celebrate the 4<sup>th</sup> of July evening. They had to choose between two cruises, both of which had a deck for dancing, a restaurant, and a bar. However one cruise (the more expensive one) cost \$200 per person and offered an excellent live band, gourmet food, and high quality wine (all included). The other cruise (the cheaper one) only cost \$100 per person and offered DJ music, regular food, and beer (all included). The Smiths decided to go on the cheaper cruise. The Jones decided to go on the more expensive cruise. Now, [one day] [20 years] after [the] [that] 4<sup>th</sup> of July evening, as the Smiths and the Jones look back at the choice they made, who feels greater regret?

### Test 3: Work versus Celebrate Choice

Imagine that Dan and Ben [used to] work at the same company. [Yesterday] [Twenty years ago], both Dan and Ben had to choose between either celebrating the 4<sup>th</sup> of July with their family and friends, or working during the 4<sup>th</sup> of July and receiving extra pay (three times as much as their regular daily salary). Dan decided to work and not celebrate on the 4<sup>th</sup> of July; he [will get] [got] paid three times as much as his typical daily salary. Ben decided to celebrate and not work on the 4<sup>th</sup> of July; he [will] [did] not receive the extra pay. Now, [one day] [20 years] after [the] [that] 4<sup>th</sup> of July, as Dan and Ben both look back at the choice they made, who feels greater regret?

FIGURE 3: STUDY 1 RESULTS

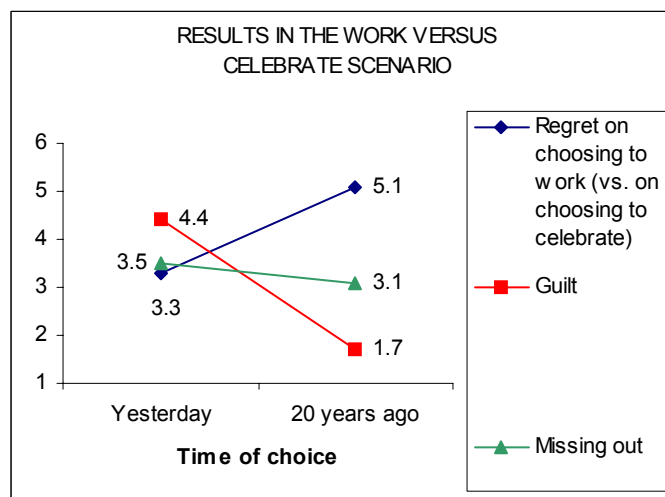
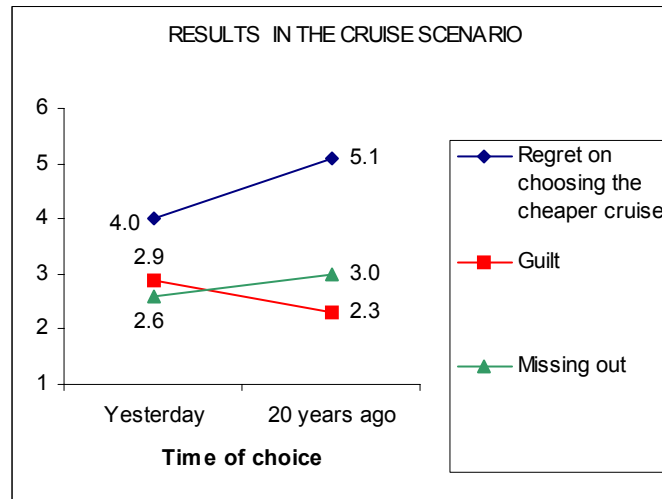
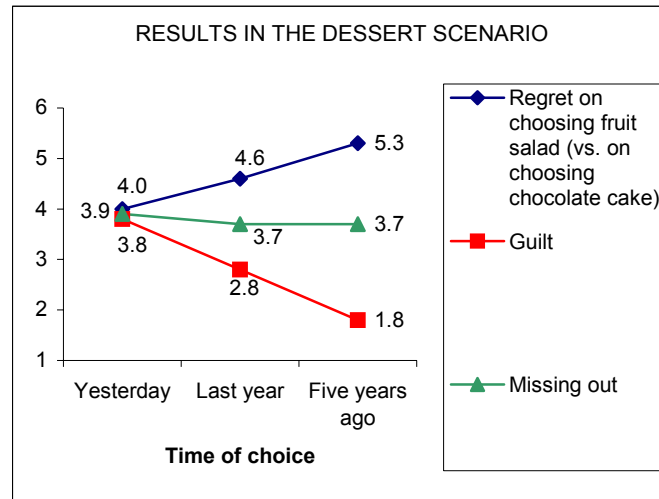


FIGURE 4: STUDY 2 RESULTS

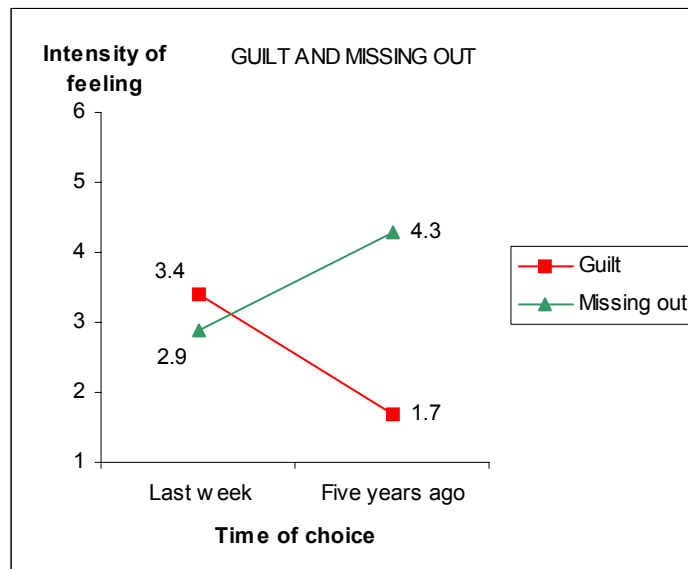
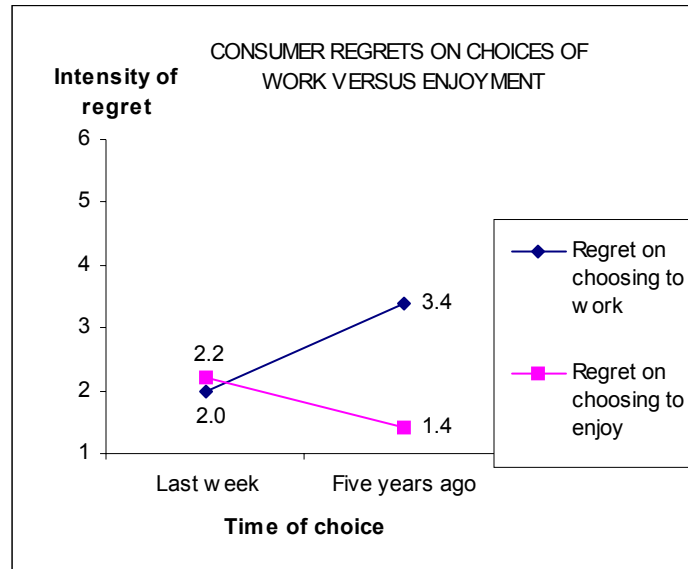
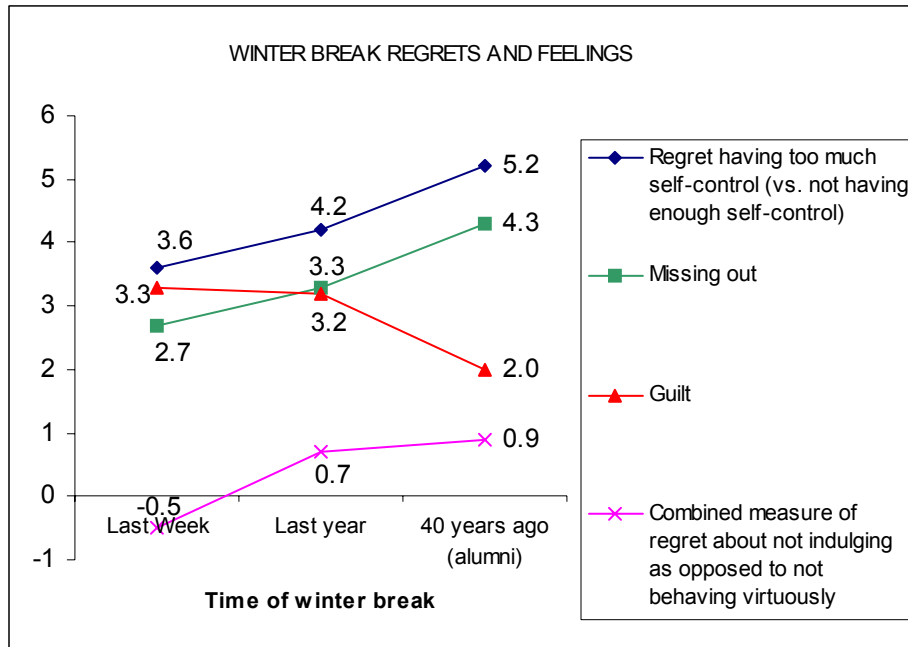


FIGURE 5: WINTER BREAK REGRETS (STUDY 3 RESULTS)



Note: The combined measure of winter break regrets was created by subtracting the mean rating of the three “virtuous regrets” (should have worked, studied, and saved more) from the mean rating of the three “hedonic regrets” (should have enjoyed, traveled, and spent more).

FIGURE 6: THE IMPACT OF PAST AND FUTURE PERSPECTIVES  
(STUDY 4 RESULTS)

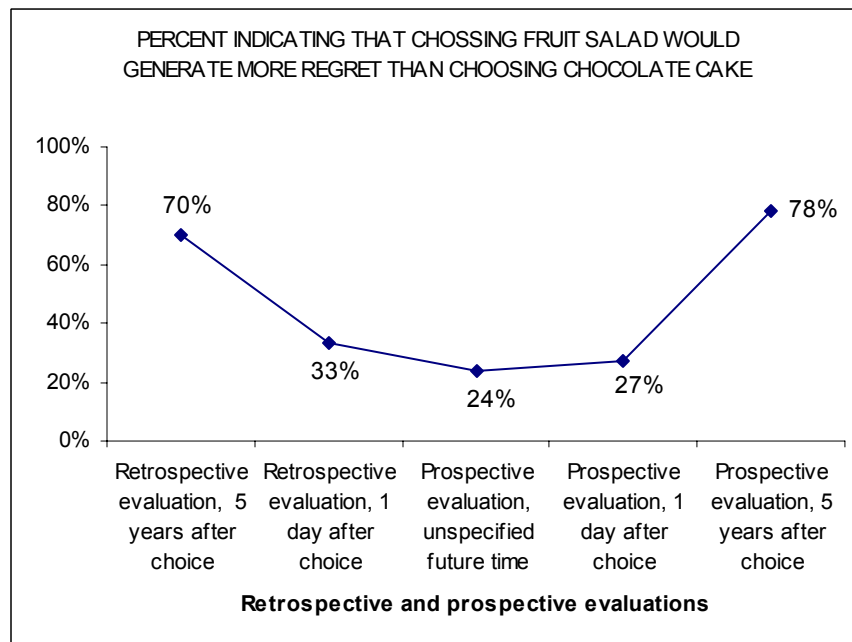




FIGURE 7: ANTICIPATED REGRETS AND THEIR IMPACT ON REAL CHOICES  
(STUDY 6 RESULTS)

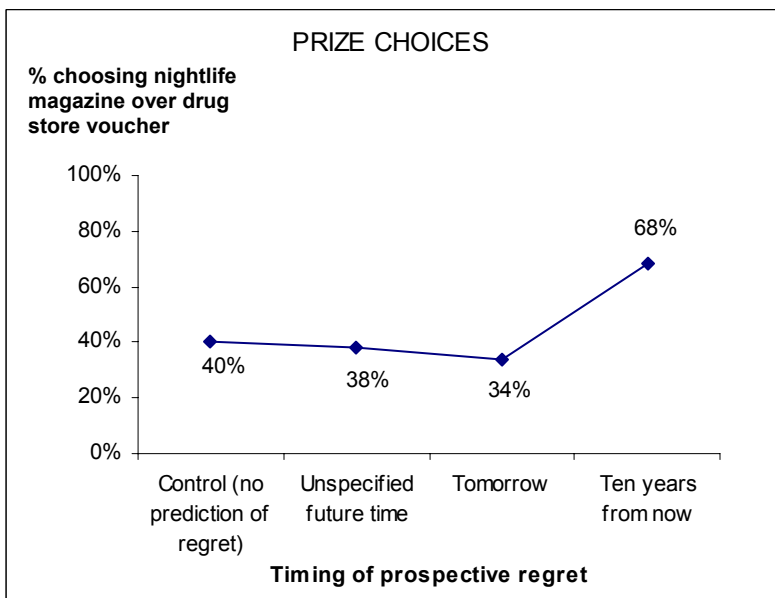
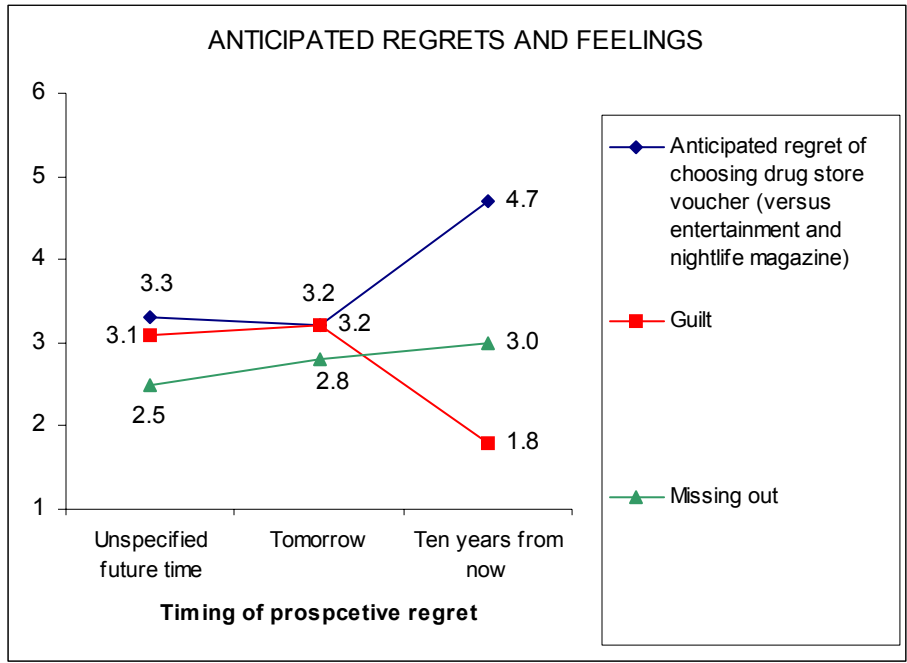


FIGURE 8: CONSEQUENCES OF REGRETTING SELF-CONTROL DECISIONS  
FOR UNRELATED CHOICES (STUDY 7 RESULTS)

