

Where There Is a Way, Is There a Will? The Effect of Future Choices on Self-Control

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Choices often involve self-control conflicts such that options that are immediately appealing are less desirable in the long run. In the current research, the authors examine how viewing such a choice as one of a series of similar future choices rather than as an isolated decision decreases the preference for items requiring self-control. The authors show that (a) in a choice between a vice and a virtue, the share choosing vice increases when the decision is presented as one of a series of similar future choices versus when the same choice is viewed in isolation, and (b) the overall share choosing a vice increases when decisions are seen in connection with similar future choices. The findings contrast with the general wisdom that broader choice frames lead to the exercise of greater self-control. The authors propose that the context of similar future choices allows people to optimistically believe that they will choose a virtue in the future choice and hence provides them with a guilt-reducing justification to not exercise self-control in the present.

Keywords: self-control, sequential choice, optimism, guilt, choice frames

When faced with choices where one option is immediately tempting and another option maximizes long-term preferences, people often experience self-control conflict (e.g., Ainslie, 1975; Wertenbroch, 1998). An extensive amount of research has examined how people deal with such self-control conflicts and has documented the strategies that people use to exercise self-control (Baumeister, Heatherton, & Tice, 1994; Hoch & Loewenstein, 1991; Rachlin, 2000). Although many choices in the real world are made as part of other related choices, most research has focused on the decision processes involved in choosing or resisting a tempting option in the context of a single choice. Relatively little is known about how a consideration of future choices might impact the degree of self-control exercised in an immediate decision. For example, imagine a business traveler who is choosing between two breakfast offerings: a very tasty but unhealthy breakfast (a relative vice) and a very healthy but less tasty plain fat-free yogurt (a relative virtue). Is this individual more or less likely to exercise self-control and choose the tasty, less healthy breakfast on the first day if he or she views this decision as one of a series of breakfast choices that will be made over the next few days?

In the current research, we explore how the preference between two alternatives (*a* and *b*) for the present time t_1 differs systematically when it is viewed as an isolated choice (e.g., as $[a\ b]_{t_1}$) than

when the same choice is viewed in a broader choice frame as one of a series of similar future choices (e.g., $[a\ b]_{t_1}, [a\ b]_{t_2}, \dots$). We propose that when a current choice is viewed in connection with a series of similar future choices, people exercise less self-control in making their current decision. As a result, in a choice conflict between an immediately tempting option and an option that maximizes long-term benefits, the relative share choosing the tempting item increases in the current choice when the decision is seen as one of a series of similar future choices than if the same choice is viewed in isolation. Specifically, we posit that the presence of similar future choices reduces the anticipated guilt associated with choosing the tempting option by allowing people to optimistically believe that they will choose the less tempting option in the future.

We further examine the processes underlying the predicted pattern of preferences and show that the results are driven by people's beliefs about their future choices. It is interesting that their actual future choices are not consistent with their predicted choices. In direct support of our theoretical account, the level of guilt anticipated in choosing a tempting item mediates the proposed effect of future choices on present preferences. The findings have important implications for the study of sequential choice, self-control, and behavior involving intertemporal considerations (e.g., procrastination). It is important to note that our findings contrast with the general wisdom that broader choice frames lead to the exercise of greater self-control or that fragmenting a stream of activity into isolated choices encourages impatient choice (Bénabou & Tirole, 2004; Loewenstein & Prelec, 1991; Read, Loewenstein, & Rabin, 1999).

The remainder of this article is organized as follows. A brief review of prior research leads to the prediction that people exercise less self-control when the current choice is seen in a broader choice frame with similar future choices as compared with when the same choice is seen in isolation. Next, in several experiments, we illustrate the main prediction in the context of vice–virtue

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choices and find the predicted pattern of an increased preference for a vice when future choices are considered. In later experiments, we test for competing accounts and find support for an explanation based on the role of optimistic beliefs about future choices in reducing the anticipated guilt in consuming a vice in the present. The data suggest that the effect cannot be explained by positive mood or a greater preference for variety (or balance) in repeated choices. We also generalize the findings to self-control dilemmas that do not require explicit comparisons among vices and virtues and further examine how a broader choice frame affects the choices of people with different self-control tendencies. Finally, we discuss directions for future research, as well as the theoretical and practical implications of the findings.

Theoretical Background

Many everyday choices involve self-control conflicts such that people have to choose between alternatives that are rewarding in the long run but are unappealing in the present (e.g., studying for exams) and those that provide immediate enjoyment but may have delayed costs (e.g., partying with friends). Past research has identified several domains where self-control conflicts may occur, such as choosing between what the heart desires versus what the mind suggests (Shiv & Fedorikhin, 1999), deciding between a luxury and a necessity (Kivetz & Simonson, 2002), and choosing between a vice and a virtue (Wertenbroch, 1998). A general consensus arising from this research is that immediately tempting outcomes may be perceived as a threat to one's long-term well-being and may therefore evoke feelings of guilt and regret (Baumeister, Stillwell, & Heatherton, 1995). To avoid the guilt anticipated in yielding to temptation, people exercise self-control. In other words, anticipated guilt helps people exert self-control and avoid choosing the tempting option and thereby secure their long-term interests.

Although self-control failures imply an underweighting of future consequences, relatively little attention has been given to how consideration of future choices influences the exercise of self-control in a present choice. Although choices are often made in connection with multiple related choices, such that an awareness of future choices can prompt consideration of factors that are not salient in isolated choices, most past research on self-control has focused on isolated decisions. A notion that the current choice can be influenced by considerations of future choices is consistent with recent research suggesting that a choice made in isolation often differs from one made in connection with other choices. Although this research has mainly focused on how current preferences might be affected by consumers' prior choices (e.g., Novemsky & Dhar, 2005), we suggest how future choices can impact people's immediate preferences. Specifically, we focus on how self-control exercised in a choice varies when this choice is viewed in isolation versus when it is viewed in a broader frame as one of a series of similar future choices. Although past research has not directly addressed this issue, we discuss three streams of work that suggest that choices made in isolation may be different from those where people are aware of similar future choices. These research streams show that viewing choices collectively can highlight additional considerations that are not salient when considering a choice in isolation.

Variety Seeking and Preference for Sequences

Past research shows that people seek greater variety when choosing multiple items simultaneously than when they choose a single item at a time (Simonson, 1990). For example, Read, Loewenstein, and Kalyanaraman (1999) found that when choosing one movie at a time, participants were more likely to pick a lowbrow movie. However, when choosing multiple movies to view later, participants picked a greater mix of highbrow (good for the long run) and lowbrow (immediately tempting) movies. In a similar vein, goal-theoretic research on consumer choice suggests that choices made in a series may result in considerations of balance among multiple conflicting goals (Dhar & Simonson, 1999).

A related area of research has focused on how people prefer to order their sequence of consumption experiences. This stream of work suggests that an awareness of future choices may encourage people to think in an integrative way about their preferences over all consumption episodes. For example, Loewenstein and Prelec (1993) showed that people generally schedule the less preferred option first and the most preferred option last. Like the preference for variety, a preference for improving sequences is a property that is not apparent when people choose in isolation. When people schedule experiences one at a time, they might choose to have the best experiences as soon as possible and delay the worst ones, thus ending up with a declining sequence. However, when they schedule several experiences at the same time, they might prefer to experience them in an improving order of utility.

In summary, past research suggests that unlike isolated choices, a broader choice frame where people view a current choice in connection with similar future choices might highlight considerations of variety seeking, balance, or improvement in the order of utility. However, no clear predictions arise from this research about how an awareness of these considerations influences self-control in current choices. For example, the research on variety seeking shows that people choose more variety when selecting multiple items simultaneously in comparison to when they choose an item for each immediate occasion. In contrast, our focus is on the initial choice, for which the variety-seeking explanation makes no predictions. That is, although the variety-seeking explanation suggests that participants would alternate between a vice and a virtue, it does not predict which option would be chosen first. Similarly, although it is possible that seeing a current choice in conjunction with similar future choices highlights a preference for an ascending order of utility, it does not predict the specific option likely to be selected when making an immediate decision when the options available are not easily ordered in terms of utility.

Adding-Up Effect

The self-control literature suggests that seeing a choice as part of a series of similar future choices could shift the present period preferences by emphasizing cumulative costs and benefits (Kirby & Guastello, 2001; Read, Loewenstein, & Rabin, 1999). That is, seemingly trivial costs of a single act viewed in isolation can look significant when several such acts are viewed cumulatively (*adding-up effects*). For example, if the choice to smoke is made one cigarette at a time, the expected pleasure from each cigarette can easily outweigh its health consequences, but if the costs of

smoking one pack a day for a year are combined, the health consequences of smoking might outweigh the pleasure derived from it.

This line of reasoning predicts that viewing a current choice in the context of similar future choices will increase the likelihood of exerting self-control in the immediate decision (Bénabou & Tirole, 2004; Loewenstein & Prelec, 1991). Note that although the adding-up effect predicts an increase in self-control when a current decision is viewed in conjunction with similar future choices, it assumes that people believe that their immediate choice is predictive of their future choices. Although in certain consumption situations, such as in addictive consumption or other habituated behavior, people may naturally see their current choices as predictive of future behavior, in other situations people may believe in their ability to choose different items on different occasions (e.g., they can have a low-fat dinner on one occasion and steak and fries on another occasion).

Optimism Bias in Beliefs About Future Preferences

In contrast to the adding-up effect, which requires a belief about consistency in present and future behavior, people often believe that they will behave differently in the future. Specifically, a large body of research suggests that people are often overly optimistic about their future behavior (e.g., Buehler, Griffin, & Ross, 1994; Taylor & Brown, 1988). Empirical evidence of such unrealistic optimism has been reported in a range of different domains, such as in people's estimates of task completion times (Buehler et al., 1994), realized future earnings (Barefield & Comiskey, 1975), charity donations (Epley & Dunning, 2000), and exam scores (Shepperd, Ouellette, & Fernandez, 1996). It follows from this research that often people optimistically believe that, unlike the present, in the future they will face less or no self-control conflict in doing what is right.

Building on an optimistic bias in the prediction of future choices, we posit that when the current choice is viewed as part of a series of similar future choices, people will exercise less self-control in the immediate decision. An important feature of choosing an immediately tempting option is that it often evokes feelings of guilt (Dahl, Honea, & Manchanda, 2003; Dhar & Wertenbroch, 2000), which can act as an inducement to make more self-controlled choices (Giner-Sorolla, 2001). We propose that a broad choice frame allows people to optimistically believe that they will choose an item requiring self-control in the future. Such optimistic beliefs about future choices reduce the guilt felt as a result of choosing the tempting option now, thereby decreasing the amount of self-control exercised in the immediate choice.

Context and Overview of Present Experiments

In the current article, we examine how considering similar future choices can influence current decisions in the context of choosing among relative vices (e.g., a tasty but unhealthy dessert) and relative virtues (e.g., a less tasty but healthy dessert), a choice that involves a self-control conflict. Generally, a vice is conceptualized as being motivated by short-term affective desires, whereas a virtue is seen as being more beneficial in the long term (Read, Loewenstein, & Kalyanaraman, 1999; Wertenbroch, 1998). Therefore, choosing a virtue over a vice requires the exertion of

self-control, as it entails overcoming immediate temptation. In the context of choosing between vices and virtues, we therefore predict that having similar future choices will increase the preference for a vice in the current choice by allowing people to optimistically believe that they will choose the virtuous option later.

The main proposition and the underlying process mechanism are tested in five experiments using real choices involving self-control conflict (see Figure 1). Experiment 1 shows that the relative preference for a vice over a virtue increases when this choice is viewed in a broader frame as being followed by a similar choice in the future. Experiment 2 shows that the predicted effect is not consistent with an account based on a metapreference for variety or balance in the broad choice frame. A separate experiment demonstrates that predictions of future choices of a virtue are optimistic in comparison to the actual future choices. Experiment 3 shows that anticipated guilt in choosing a vice mediates the process by which future choices increase the immediate preference for a vice. Also, this experiment rules out a possible alternative explanation based on potential mood differences in the two choice frames. Experiment 4 provides evidence that manipulating beliefs about the future choice influences the relative preference for a vice in the present. Finally, in Experiment 5, we generalize the findings beyond vice-virtue choices to the delay-of-gratification context and examine how a broader choice frame affects choices of people with different self-control tendencies.

Experiment 1: Does Awareness of Future Choices Affect Self-Control?

This experiment tested the proposed effect of future choices on self-control exercised in current decisions in a choice among movies. The operationalization was adapted from Read, Loewenstein, and Kalyanaraman (1999), who suggested that highbrow movies (e.g., *Schindler's List*) can be viewed as virtues relative to lowbrow movies (e.g., *Dumb & Dumber*), as they offer less immediate pleasure (or even some pain) but provide long-term ben-

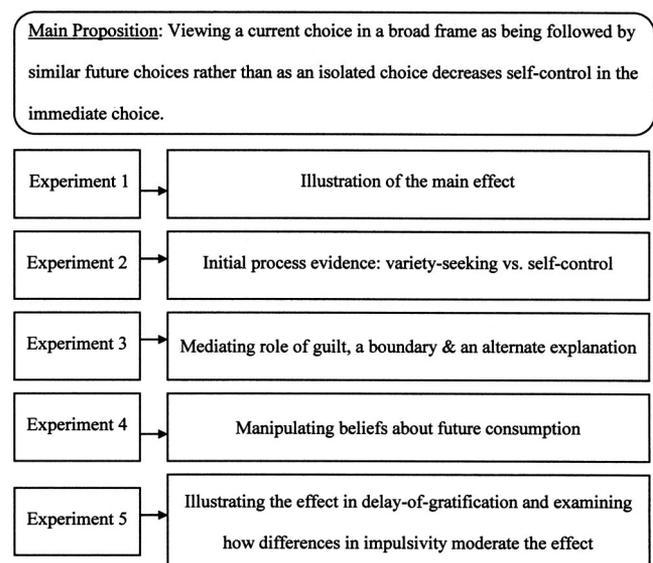


Figure 1. Road map.

efits in the form of educational or cultural enrichment, whereas lowbrow movies are fun but forgettable. On the basis of this framework, we hypothesized that in a choice between relative virtues (highbrow movies) and relative vices (lowbrow movies), people will be more likely to choose a relative vice when the decision is viewed as being followed by similar future choices (hereafter referred to as the *repeated-choice condition*) than when it is viewed in isolation (hereafter referred to as the *isolated-choice condition*).

Method

Participants. Eighty undergraduate students (38 women and 42 men) at a major East Coast university of the United States took part in the experiment to receive a free movie rental.

Pretests. The movies were selected on the basis of two pretests from the same population. In the first pretest, 15 participants rated several movies as highbrow or lowbrow on a 9-point scale (1 = *lowbrow* and 9 = *highbrow*). Following Read, Loewenstein, and Kalyanaraman (1999), highbrow movies were described as “movies that may have sub-titles, depressing plot or may offer less immediate pleasure but are educationally or culturally enriching,” whereas lowbrow movies were described as those that “generally provide little educational or cultural benefit but are good for entertainment and instant pleasure and relaxation.” On the basis of participants’ ratings, four highbrow and four lowbrow movies were selected for the main experiment (stimuli in Appendix A). In a second pretest, another group of 15 participants rated each selected movie as a relative vice or a relative virtue on a 9-point scale (1 = *more of a vice* and 9 = *more of a virtue*). A vice was defined as “something tempting that may have fewer long-term benefits. It is something that you want but at the same time feel more guilty choosing.” A relative virtue was defined as “Something that is not very tempting now but may be more beneficial in the long-run. It is something that you feel less guilty choosing.” Pretests confirmed that the highbrow movies were considered more virtuous ($M = 7.83$, $SD = 0.85$), whereas the lowbrow movies were considered more of a vice ($M = 2.06$, $SD = 0.66$). Ratings on the highbrow–lowbrow scale and the vice–virtue scale showed significant positive correlation ($r = .96$, $p < .01$).

Procedure. Participants in the main experiment were randomly assigned to either the isolated-choice or the repeated-choice condition. Participants in the repeated-choice condition were told that the survey would be conducted over 2 weeks and that they would receive a free movie rental each week for their participation in each survey. Participants in the isolated-choice condition were asked to complete a survey to receive a free movie rental. Thus the only difference in the two conditions was that the participants in the repeated-choice condition were made aware that they would have a second movie choice at a future time. After completing the unrelated survey, participants in both conditions chose a movie they wanted for the current weekend. After making their decisions, participants were asked to guess the purpose of the experiment. No one accurately guessed the hypothesis being tested. Subsequently, participants were debriefed that there would be no further choice. All participants were given a \$5 Blockbuster gift coupon and thanked for their time.

Results and Discussion

As predicted, more participants chose a vice (lowbrow movie) for the current weekend in the repeated-choice condition (80%) as compared with the isolated-choice condition (57.5%), $\chi^2(1, N = 80) = 4.71$, $p < .05$, $\phi = .24$. These results are consistent with our account that when a current choice is viewed in a broader frame along with similar future choices, it allows people to optimistically believe that they will choose an item requiring self-control in the future. The optimistic beliefs about future choices reduce the guilt in choosing the tempting option now, thereby decreasing the amount of self-control exercised in the immediate choice.

An alternative account for the choice results observed in Experiment 1 could be based on a preference for variety or balance in the repeated-choice condition (Dhar & Simonson, 1999; Simonson, 1990). As discussed earlier, although the variety-seeking explanation suggests that participants would like to consume a vice on one occasion and a virtue on the other, it makes no prediction about the order in which the vice and the virtue options will be chosen. However, if a preference for variety or balance is coupled with a desire for immediate gratification, one might predict the pattern of results obtained in Experiment 1. That is, having decided to consume a virtue and a vice, a person might choose a vice first because of its greater immediate appeal (Loewenstein, 1996; Wertenbroch, 1998). Although variety seeking plus immediate gratification and our account both suggest the same pattern of results obtained for the first choice, they generate different predictions about the selected option in the subsequent period.

If the pattern of results is due to a metapreference for variety or balance in choices, participants’ second-period choices should favor the alternative that was not chosen in the first period. Thus, given that the number of participants choosing a vice for immediate consumption was significantly higher in the repeated-choice condition, the number of participants choosing the vice as their second selection should be significantly lower. However, if people choose a vice because they exercise less self-control as a result of optimistic beliefs about future choices, then those in the repeated-choice condition will not differ in the amount of self-control applied in the next period. That is, the number of participants in the repeated-choice condition choosing a vice in the second period would not be significantly lower compared with the number of participants in the isolated-choice condition choosing a vice. Because the participants in the repeated-choice condition in Experiment 1 were not asked for their second choice, we cannot yet distinguish between the two accounts. In Experiment 2, we examined second-period choices to disentangle the accounts based on variety seeking and/or balancing versus self-control.

Experiment 2: Variety Seeking and/or Balancing Versus Self-Control

Method

Participants. Sixty female MBA students at a major South Asian university took part in the study. Participation was restricted to women because the test items were oriented toward women.

Pretest. The choice alternatives used in this experiment were highbrow versus lowbrow magazines. The magazines were selected on the basis of two pretests from the same subject popula-

tion. In the first pretest, 15 female participants rated a few magazines (that were indicated by another group of participants to be most frequently read) as highbrow or lowbrow on a 9-point scale (1 = *more lowbrow* and 9 = *more highbrow*). On the basis of this pretest, *The Economist* ($M = 8.40, SD = 0.83$) and *Fortune* ($M = 7.93, SD = 0.88$) were selected as highbrow magazines and *Xtra* ($M = 1.13, SD = 0.35$) and *Social Pages* ($M = 1.46, SD = 0.52$) were selected as lowbrow magazines. In the second pretest, 15 different female participants rated the selected magazines as a relative vice or a relative virtue on a 9-point scale (1 = *more of a vice* and 9 = *more of a virtue*). The definitions of a vice and a virtue were the same as in Experiment 1. According to this pretest, the highbrow magazines were rated as more virtuous ($M = 6.60, SD = 1.18$) than the lowbrow magazines ($M = 4.30, SD = 1.30$), $t(28) = 5.00, p < .01$, Cohen's $d = 1.88$. Ratings on the highbrow–lowbrow scale and the vice–virtue scale showed significant positive correlation ($r = .78, p < .01$).

Procedure. Participants were randomly assigned to the isolated- or the repeated-choice condition, which were similar to the conditions in Experiment 1. That is, whereas participants in the isolated-choice condition were unaware of any second choice, participants in the repeated-choice condition knew that they would have to make the same choice again the following week. After completing an unrelated survey, participants in both conditions chose a magazine for the current week. A week later, participants in both conditions were approached again and were given the same choice of magazines for completing Part II of the survey. Because these magazines are published weekly, there was no overlap between the first and the second week's issues. At the end of the study, participants were questioned about the real purpose of the study, but none correctly guessed the study's purpose. Finally, participants were debriefed and thanked for their time.

Results and Discussion

The main result of Experiment 1 was replicated. In the first choice, 83% of the participants chose a vice option (lowbrow magazine) in the repeated-choice condition in comparison to 53% of the participants in the isolated-choice condition, $\chi^2(1, N = 60) = 6.24, p = .01, \phi = .32$. Furthermore, the share of participants choosing the vice in the second choice was not significantly smaller in the repeated-choice condition (53%) than in the isolated-choice condition (40%), $\chi^2(1, N = 60) = 1.07, ns, \phi = .10$. This result shows that the increased preference for a vice in the first period cannot be explained by a metapreference for variety or balance, both of which imply that the choice of vice in one period would be offset by choosing a virtue in the next period.¹ Furthermore, as expected, the share of participants choosing a vice over the two periods was significantly greater in the repeated-choice condition (68%) as compared with the isolated-choice condition (47%), $\chi^2(1, N = 120) = 5.76, p < .05, \phi = .22$.

Our proposed theoretical account suggests that people exercise less self-control in the repeated-choice condition than in the isolated-choice condition because the consideration of future choices allows them to optimistically believe that they will choose the more virtuous option in the future. An experiment similar to Experiment 2 was conducted to directly test whether participants are overly optimistic about choosing a virtue in the future. Sixty-six female participants were randomly assigned to a prediction and

an actual-choice condition. All participants were told that they would be choosing a magazine once the current week and once the following week. In the prediction condition, before making the choice for the present occasion, participants were asked to predict the magazine that they would like to receive next week. They were told that their prediction would be anonymous and would not be binding but would allow the experimenter to estimate the total demand. After participants predicted the magazine they would prefer to receive the following week and indicated their preference for the current week, they were debriefed and dismissed. In the actual-choice condition, participants were not asked to predict their next week's choice at the time of the first choice but were again given a choice among the four magazines the following week.² If people are overly optimistic about choosing a virtue in the future, then the proportion of virtues should be higher in the prediction condition than in the actual-choice condition. Consistent with this prediction, 67% of the participants predicted that they would choose a virtue the following week but only 36% actually chose a virtuous option that week, $\chi^2(1, N = 66) = 6.10, p < .01, \phi = .30$.

The experiments so far have shown support for the proposition that the preference for an option requiring self-control decreases when this decision is seen as being followed by similar future choices. However, these experiments did not examine the mechanism underlying the proposed effect. As discussed earlier, choosing a vice (immediate pleasure) over a virtue (long-term gain) is often associated with guilt, which induces people to exercise self-control to align their immediate choice with their long-term preferences. Our account proposes that people exercise less self-control when making the current choice because the anticipated guilt in choosing a vice is reduced as a consequence of optimism about future choices in the repeated-choice context. On the basis of this framework, we predict that (a) participants will anticipate less guilt from choosing a vice for their immediate choice in the repeated-choice condition than in the isolated-choice condition and that (b) this anticipated guilt in choosing a vice in the current choice will mediate the effect of future choices on current preferences.

We further explore the degree to which our proposed process is domain specific. One possibility, similar in essence to the notion of self-affirmation (Steele, 1988), is that a future virtuous choice in any domain (e.g., a future charity donation) would lead to a similar effect on current choices in a completely different domain (e.g., choosing a highbrow movie over a lowbrow movie). However, unlike an effect that is generalizable across domains, we posit that future choices that are seen as related to the current choice are more likely to attenuate the anticipated guilt from consumption as

¹ The proportion of participants who switched between the vice and the virtue in the two periods was higher in the isolated-choice condition (67%) than in the repeated-choice condition (37%), $\chi^2(1, N = 60) = 5.40, p < .05, \phi = .30$. This pattern of individual participants' switching further suggests that the effect of future choices on immediate preferences cannot be explained by a metapreference for variety or balance.

² Participants in the actual-choice condition were not asked to predict their future choice at the time of the first choice to avoid potential confirming effects of prediction. For example, if participants are asked for predictions in the first period, in the second period, participants may want to appear consistent (to themselves or to the experimenter) and choose what they predicted in the first period.

compared with choices that are seen as unrelated. This intuition is similar to research findings in mental accounting, which suggests that the integration of a sequence of outcomes depends on whether these events are viewed by the individual as belonging to the same mental account or to different mental accounts (e.g., Kahneman & Tversky, 1984). When two events are assigned to the same mental account, they are likely to be integrated before evaluation, whereas if the two events are encoded in separate mental accounts, they are likely to be evaluated separately before being aggregated (Linville & Fischer, 1991). Given that choices from different domains might not be integrated, it is possible that a future choice from a different domain leaves people to view their current decision in isolation. Thus, a positive event (e.g., a good grade) is more effective in serving as a buffer to a negative event in the same domain (e.g., a bad grade) as compared with a negative event in another domain (e.g., a fight with the best friend).

In line with this research, we propose that although a consideration of similar future choices is likely to diminish the anticipated guilt in choosing a vice, future choices that are seen as unrelated (e.g., those that do not serve the same underlying goal) may not reduce the anticipated guilt in choosing a vice in the immediate decision. For example, whereas believing that one would consume a low-fat yogurt in the future can decrease the anticipated guilt in having a cookie now, thinking that one would watch a highbrow movie in the future may not impact the guilt from eating a high-fat cookie. Therefore, we predict that although a similar future choice will reduce the anticipated guilt in choosing a vice now and hence increase the share of people deciding on a vice for their current choice, a dissimilar (unrelated) future choice will not be as effective in reducing the guilt in choosing a vice now and will therefore not significantly increase the share of people choosing a vice over a virtue.

The purpose of the next experiment was threefold: First, it directly measured the anticipated guilt associated with choosing a vice in the repeated- and isolated-choice conditions. Second, it tested for the boundary condition for the main result and explored whether the effect of future choices is domain specific. We predict that the consideration of future choices that are in an unrelated domain would not reduce the anticipated guilt in choosing a vice now and will therefore not significantly increase the share of participants choosing a vice in the present choice. Third, the experiment allowed us to examine whether the results observed in the earlier experiments can be explained by potential differences in the mood of the participants in the repeated and isolated choices. For instance, it is possible that the knowledge of having additional choices in the future puts people in a better mood, which influences their immediate choice.

Experiment 3: Test of Process Mechanism, an Alternate Account, and a Boundary Condition

This experiment included a third condition in addition to the isolated- and repeated-choice conditions. In this condition, the future choice involved vice and virtue items that belonged to a domain different from that of the current choice. The main idea here is that although choices in both domains (e.g., snacks and movies) lead to optimistic beliefs about future choices, unrelated choices will not be as effective in reducing anticipated guilt and hence the self-control exercised in choosing for the present.

Method

Participants. Ninety female undergraduate students at a major East Coast university in the United States took part in the study to receive a free snack. Participation was limited to women to avoid any gender differences in the level of guilt associated with snacking.

Pretest. The snacks were selected on the basis of a pretest in which 20 female respondents rated several snacks as a relative vice or a relative virtue on a 9-point scale (1 = *more of a vice* and 9 = *more of a virtue*). A vice and a virtue were defined as they were in the previous experiments. On the basis of this pretest, a large Mrs. Field's cookie was identified as a relative vice ($M = 1.95$, $SD = 1.00$), whereas a plain fat-free yogurt was identified as a relative virtue ($M = 8.00$, $SD = 1.23$), $t(38) = 18$, $p < .01$, Cohen's $d = 5.5$.

Procedure. Participants in the main experiment were randomly assigned to three conditions. The first two conditions were similar to the isolated- and repeated-choice conditions described previously. Specifically, in the isolated-choice condition, participants chose between a plain fat-free yogurt and a large Mrs. Field's cookie without being told about any future choice. In the similar-repeated-choice condition, participants were made aware that they would have the same choice next week before they chose between the two snacks. The third condition was the same as the similar-repeated-choice condition except that these participants were told that the next period's choice was among highbrow and lowbrow movies (the list of videos was the same as that used in Experiment 1).

In all three conditions, before choosing a snack, participants responded to an unrelated survey, which included mood measures embedded within several unrelated questions. The questions assessing mood asked participants to state how they felt at the moment on a four-item, 7-point mood scale (Lee & Sternthal, 1999) that was anchored by sad–happy, bad mood–good mood, irritable–pleased, and depressed–cheerful (1 = *most negative* and 7 = *most positive*). After completing this questionnaire, participants further responded to questions from a three-item, 7-point guilt scale (Dahl et al., 2003) that were anchored by *no guilt–lot of guilt*, *no remorse–lot of remorse*, and *very bad–not at all bad* (1 = *most positive* and 7 = *most negative*). Specifically, participants indicated the degree of guilt they would feel if they chose the yogurt and the cookie, respectively. After completing the survey, participants chose a snack. At the end, participants were asked to indicate what they thought the purpose of the experiment was. None of the participants articulated the hypothesis being tested. Finally, all participants were debriefed.

Results and Discussion

First, the results replicated the main proposition. That is, the share of participants choosing a vice was significantly greater when participants expected to have the same choice next week (83.3%) as compared with when they viewed this decision in isolation (57.0%), $\chi^2(1, N = 60) = 5.08$, $p < .05$, $\phi = .29$. Furthermore, consistent with our prediction that a dissimilar future choice will not reduce the self-control exercised in the current choice as much as a similar future choice will, there was no significant increase in the share of participants choosing a vice in

the dissimilar-repeated-choice condition (63.0%), $\chi^2(1, N = 60) = 0.28, p = .6, \phi = .06$.

We proposed that an awareness of similar future choices reduced the amount of self-control people exercise in the current choice by reducing the anticipated guilt in choosing a vice. To test for this hypothesized role of guilt, we averaged the ratings on the three guilt items to form the guilt scale, which was highly reliable (Cronbach's $\alpha = .93$). The measures on the guilt scale show that participants anticipated greater guilt from choosing a vice in the isolated-choice condition ($M = 4.60, SD = 1.7$) than they did in the similar-repeated-choice condition ($M = 3.16, SD = 1.90$), $t(58) = 3.04, p < .01$, Cohen's $d = 0.8$. However, the anticipated guilt in choosing a vice reported in the dissimilar-repeated-choice condition ($M = 3.90, SD = 1.71$) was not significantly different from the anticipated guilt in the isolated-choice condition, $t(58) = 1.56, p = .12$, Cohen's $d = 0.4$.

Consistent with our proposed explanation, the data also fulfilled the criteria for a mediation model (Baron & Kenny, 1986): First, choice condition (repeated or isolated) had a significant effect on anticipated guilt in choosing a vice ($B_1 = 1.43, SD = 0.47, p < .01$).³ That is, participants anticipated less guilt in choosing a vice in the repeated-choice condition than in the isolated-choice condition. Second, there was a significant effect of choice condition on the choice of vice ($B_2 = 1.34, SD = 0.60, p < .05$). More participants chose a vice in the repeated-choice condition than in the isolated-choice condition. Also, anticipated guilt from choosing a vice significantly impacted the choice of vice ($B_3 = 1.17, SD = 0.30, p < .001$). Finally, when choice of vice was regressed on both choice condition and anticipated guilt in choosing a vice, the coefficient for choice condition was no longer significant ($B_2 = -0.67, SD = 0.78, p = .38$), whereas the coefficient for guilt was significant ($B_3 = -1.14, SD = 0.32, p < .001$). The results of the mediation test are consistent with our account that viewing a current choice in connection with similar future choices decreases the anticipated guilt in consuming a vice now by allowing people to optimistically believe that they will choose the virtuous option later.

We also examined whether the choice pattern could be explained by potential mood differences in the isolated- and repeated-choice conditions. The four mood ratings were averaged to form a highly reliable mood measure (Cronbach's $\alpha = .97$). The results show that an increased preference for a vice in the repeated-choice conditions cannot be due to differences in mood. Specifically, although there was no significant difference in mood in the isolated-choice ($M = 5.15, SD = 1.19$) and similar-repeated-choice conditions ($M = 5.45, SD = 1.09$), $t(58) = 1.01, p = .3$, Cohen's $d = 0.26$, participants in the dissimilar-repeated-choice condition reported significantly better mood ($M = 6.20, SD = 1.10$) than did the participants in the isolated-choice condition, $t(58) = 3.5, p < .01$, Cohen's $d = 0.9$. These results, together with the shares of the participants choosing the vice, show that the effect cannot be explained by difference in mood because (a) participants in the dissimilar-repeated-choice condition reported a more positive mood but were no more or less likely to choose a vice in the current period than were those in the isolated-choice condition and, (b) compared with the isolated-choice condition, participants in the repeated-similar-choice condition were more likely to choose a vice in the current period, although their mood

ratings did not differ significantly from those of the participants in the isolated-choice condition.

Experiment 3 makes the following contributions. It replicates the main proposition in a different choice domain and provides evidence for the proposed underlying role of anticipated guilt. The results are consistent with the idea that an optimistic belief about choosing a virtuous option later reduces the anticipated guilt in choosing a vice now by allowing people to believe that they will choose the virtuous option in the future. Furthermore, the experiment allows us to explore a boundary condition to show that future choices reduce the anticipated guilt in choosing a vice now when the future choice is from the same consumption domain but not when the future choice is from an unrelated domain. Finally, the experiment also rules out the possibility that the effect is due to differences in mood.

We propose that viewing a current choice as part of a series of similar future choices allows people to optimistically believe that they will choose the virtuous option later. These optimistic beliefs about future choices reduce the guilt in choosing a vice now and, in turn, diminish the self-control exercised when making the present choice. Hence, if beliefs about future choices are responsible for the proposed effect, then manipulating these beliefs directly should also influence the choice of a vice in the current period. That is, leading people to believe that they will be consuming a virtue later should increase the share of people choosing a vice in the current period. Conversely, if people believe that they will be consuming a vice in the future, that belief should eliminate the effect of future choices on a current preference for the vice. To test whether the future choices affect self-control exercised in the current choices through beliefs about future choices, in the next experiment we directly manipulated participants' beliefs by constraining the future outcome to only a vice (e.g., no optimism) or only a virtue (e.g., full optimism).

Experiment 4: Manipulating Beliefs About Future Choices

Method

Participants. One hundred sixty female undergraduate students at a major East Coast university of the United States were randomly assigned to four conditions. Participants in all conditions were offered a choice between a plain fat-free yogurt and a large Mrs. Field's cookie for completing an unrelated survey.

Procedure. The first two conditions were the same as the isolated-choice and the repeated-choice conditions in the earlier studies. That is, participants in the isolated-choice condition were given a one-shot choice between the two snacks, whereas participants in the repeated-choice condition were told that they would have the same choice again next week. In the two new conditions, participants were told specifically the snack they would receive next week for their participation. In the virtue-next condition, participants were informed that next week they would receive a plain fat-free yogurt for completing the survey. Similarly, in the vice-next condition, participants were told that they would receive a cookie next week. In all conditions, participants filled out an

³ The level of anticipated guilt in choosing a virtue was not significantly different in the isolated- ($M = 2.60, SD = 1.60$) and repeated-choice conditions ($M = 2.40, SD = 1.10$), $t(58) = 0.58, p = .57$.

unrelated questionnaire and selected a snack for the current period. Once participants chose the snack for the present week, they were asked to guess the purpose of the study and were debriefed that there would be no further choices. None of the participants suspected the real purpose of the experiment.

Results and Discussion

Consistent with the main proposition, only 47.5% chose a vice when they saw the current choice in isolation, but 70% chose a vice when they were told that they would have the same choice again next week, $\chi^2(1, N = 80) = 4.18, p < .05, \phi = .23$. We predicted that if beliefs about future choices underlie the increased preference for a vice, then the share of participants choosing the option requiring less self-control should increase even further in the virtue-next condition. Consistent with this, when the next period choice was constrained to be virtuous, the share of participants choosing the vice in the current period further increased to 90% from 70% in the repeated-choice condition, $\chi^2(1, N = 80) = 5.00, p < .05, \phi = .31$. However, if people believe that they will be consuming a vice in the future, it should eliminate the effect of future choices on a current preference for the vice. In support of this, when the second period choice was fixed as a vice, 42.5% chose a vice in the current choice, which is not significantly different from the share choosing a vice in the isolated-choice condition, $\chi^2(1, N = 80) = 0.20, p = .65, \phi = .05$.

These results provide additional evidence for the proposed mechanism that beliefs about future choices shift people's preferences away from options requiring self-control. Also, note that these results do not support an account based on metapreference for variety or balance (or by misprediction of variety seeking or balance) in repeated choices. For example, a variety-seeking or balancing account predicts an increase in the share of participants choosing a vice when the future choice is limited to a virtue and a decrease when the future choice is fixed as a vice. Our results are inconsistent with this symmetric pattern of preferences and show that although making the second choice a virtue significantly increased the current share of participants choosing a vice, making the second choice a vice did not significantly decrease the current share of participants choosing a vice.⁴

Although choices among vices and virtues are associated with self-control, conflict, and guilt, the notion of self-control has been implicated in a range of different domains. For example, one paradigm that has been extensively used to study self-control conflict is delay of gratification (e.g., Mischel, Shoda, & Rodriguez, 1989). The standard dilemma here is whether to choose a smaller immediate reward or a larger delayed reward. Choosing a larger reward requires exercising self-control to delay gratification, whereas choosing a smaller immediate reward implies impulsiveness and may be more guilt inducing, as it means forfeiting a larger reward. In this context, our core idea predicts that similar future choices will decrease the preference for a larger delayed reward, which requires exercising self-control.

Implicit in our account of the role of future choices is the notion that people can exercise self-control and that the degree to which it is exercised can vary across choice contexts. Although the choice frame impacts people's willingness to exercise self-control, past research has shown that people also vary in their chronic ability to exert self-control (e.g., Puri, 1996). We posit that our proposed

effect applies more to people with a high ability to exercise self-control than to those low in self-control. The idea is that individuals with a low ability to apply self-control will choose the tempting option regardless of whether a future choice is present. In contrast, although individuals with a high degree of self-control have the ability to resist temptation, the extent to which they exert self-control and resist temptation could depend on the situational context. Our framework posits that a broad choice frame, relative to a narrow choice frame, allows individuals with a high degree of self-control to exercise less self-control as optimism about exerting self-control in the future decreases the guilt in not exerting self-control in the present. Hence, they are more likely to choose an option requiring less self-control in the repeated-choice context when they can optimistically believe that they will exert greater self-control later, which reduces the anticipated guilt in not exercising self-control in the present choice. Thus, we predict that individuals with a high degree of self-control should be more likely to choose the smaller immediate reward in the presence of future choices. However, people with a low degree of self-control should be less sensitive to future choices and should be equally likely to choose the immediate reward in different choice frames. Accordingly, in the next experiment, we examined the effect of future choices on self-control in a different domain and the consequences of individual differences in self-control for our proposed effect.

Experiment 5: Effect of Future Choices on a Delay-of-Gratification Decision

Method

Participants. One hundred thirty-two MBA students (52 women and 80 men) at a South Asian university took part in the study for monetary compensation.

Procedure. In two choice conditions—isolated and repeated—participants were told that as compensation for completing a survey on students' habits and lifestyle, they could receive either 100 rupees (approximately \$5 in purchasing power) immediately after the survey or 175 rupees (approximately \$8.75 in purchasing power) 2 weeks after completing the survey. Participants in the repeated-choice conditions were further aware that they would be completing a similar survey after 1 month. They were informed that for each survey, they could choose to receive 100 rupees right after completing the survey or 175 rupees 2 weeks after completing the survey. The experiment was conducted in classroom settings with instructors' assistance. Participants were given a receipt if they chose the larger delayed compensation. All participants in the repeated-choice condition agreed to complete both surveys. The first page of the survey (see Appendix B) contained several unrelated filler items and a 12-item Consumer Impulsiveness Scale (CIS) developed by Puri (1996) to measure participants' chronic impulsivity. The second page had more unrelated questions that served as fillers. On completing the survey, participants decided

⁴ We also did not find evidence for the adding-up effect, which predicts an increase in self-control when a current decision is viewed in conjunction with similar future choices. An absence of an adding-up effect when the future consumption is fixed to a vice could be because the cumulative costs of two cookies may not seem significant to some people.

whether they wanted to receive 100 rupees immediately or 175 rupees after 2 weeks. Finally, participants were debriefed and compensated for their participation.

Results and Discussion

The main effect observed in previous experiments was replicated in the domain of delay of gratification. Only 37.1% of participants chose the smaller immediate reward when the current choice was presented in isolation, but 64.5% chose it when they were aware of having the same choice again next month, $\chi^2(1, N = 132) = 9.85, p < .01, \phi = .27$. The results are consistent with the notion that similar future choices decrease the amount of self-control exercised in the present choice through optimistic beliefs about greater self-control in the later choices. Our impulsiveness classification depended on ratings on two independent subscales in CIS. One of the subscales measures hedonic orientation and the other measures prudence, a more cognitive dimension. First, we reverse scored the prudence adjectives. Next, following Wertenbroch (1998), we added participants' scores on both subscales to form a highly reliable continuous scale of self-control (Cronbach's $\alpha = .95$) such that higher scores reflected greater self-control. Using a median split, we classified participants as being low or high in self-control. As predicted, those low in self-control did not show a significant difference in their propensity to choose the immediate reward in the isolated- (69.6%) and repeated-choice conditions (64.7%), $\chi^2(1, N = 40) = 0.11, p = .74, \phi = -.05$. However, those high in self-control were significantly more likely to choose the smaller immediate reward in the repeated-choice condition (64.4%) than in the isolated-choice condition (21.3%), $\chi^2(1, N = 92) = 17.54, p < .001, \phi = .43$.⁵ This is consistent with the prediction that whereas individuals low in self-control choose options that require less self-control in both choice frames, individuals high in self-control are more likely to choose options requiring less self-control in the repeated-choice context than in the isolated-choice context, as they can optimistically believe that they will exert greater self-control later, which reduces the anticipated guilt in not exercising self-control in the present choice.

General Discussion

Self-control conflicts are common in everyday life. In this article, we suggest how choice frames can influence the resolution of self-control conflicts. We propose that viewing a current choice involving self-control conflict in a broader frame with similar future choices decreases the exercise of self-control in the present period. The studies consistently demonstrate that the relative preference for vice items (requiring less self-control) increases over more virtuous items (requiring more self-control) in a repeated-choice context as compared with when the same choice is seen in isolation. For example, Experiments 1–3 showed that participants were more likely to choose a vice (e.g., a lowbrow movie or a large cookie) over a virtue (e.g., a highbrow movie or a plain fat-free yogurt) for immediate consumption when they were aware that they would have the same choice again next week in relation to the participants who were not made aware of the future choice.

The pattern of results observed in the current experiments cannot be explained in terms of the conventional understanding that broader frames lead to greater self-control by highlighting cumu-

lative costs of actions, which may seem trivial if several single acts are viewed in isolation. The results also do not follow from balancing or variety-seeking preferences, both of which predict switching between the two options but not systematically greater choice of vice over virtue in the first period. Nor can the current findings be easily understood in terms of value maximization and choice separability, which would suggest a pattern of choices similar to that seen in the isolated-choice condition. That is, people should always choose the option that gives them the highest utility regardless of whether the decision is made in isolation or as a repeated choice. Finally, the findings also show that the results are not due to mood differences in repeated- and isolated-choice conditions.

We posited that a broad choice frame allows people to choose a vice now by allowing them to optimistically believe that they will choose a virtuous option in the future. Support for such an optimism bias was reflected in participants' predictions of future choices, which were more virtuous than their actual choices (reported in Experiment 2). Our account proposed that the optimistic belief in one's ability to choose a virtuous option in the future reduces the anticipated guilt arising from not exercising self-control and choosing a vice in the present. In direct support for the guilt-reducing role of future choices, results show that anticipated guilt in choosing a vice mediates the effect of future choices on current preferences (Experiment 3). Further support for our theory comes from the finding that directly manipulating participants' beliefs about their future consumption influenced their choices in the current period (Experiment 4).

Our results also contribute support for a more general pattern on how self-control conflicts may be resolved in the presence of future choices. Support for this general pattern comes from the demonstration that the effect is not limited to vice–virtue choices but applies to self-control conflicts that do not require explicit comparisons between vices and virtues (Experiment 5). Furthermore, we examined the moderating effect of individual differences in self-control on the proposed effect and showed that low-self-control individuals choose the option that requires less self-control regardless of the choice frame, whereas individuals high in self-control ability are more likely to choose the option requiring less self-control when similar future choices are present as compared with when the current choice is viewed in isolation (Experiment 5). Finally, the findings support our proposed framework that a broad choice frame allows people to optimistically believe that they will choose an item requiring self-control in the future. The optimistic beliefs about future choices then reduce the guilt in choosing the tempting option now, thereby decreasing the amount of self-control exercised in the immediate choice.

Theoretical Contribution

Past research has revealed that self-control dilemmas evoke guilt and has identified guilt-reducing tactics that can justify self-

⁵ A regression analysis on the impulsivity scores shows that in the isolated-choice condition, impulsivity had a significant effect on choice ($B = -0.32, SD = 0.08, p < .001$). That is, low-self-control individuals were more likely to choose the immediate reward than were those high in self-control. However, in the repeated-choice condition, impulsivity did not systematically predict choice ($B = 0.02, SD = 0.09, p = .81$).

gratification and yielding to temptation (e.g., Kivetz & Zheng, 2006). For instance, Kivetz and Simonson (2002) showed that requirements of greater effort in frequency programs shifted people's preferences towards luxury as compared with utilitarian rewards. In a similar vein, Strahilevitz and Myers (1998) demonstrated that the purchase of frivolous luxuries can be increased by tying them to charity donations. Our research suggests that optimistic beliefs about the future choices can also serve as a guilt-reducing justification for not exercising self-control in the present. The process is different from past findings where earning a justification involved costs such as high effort, excellent performance, or charity donations. Unlike past research, we suggest that mere intentions about future choices can be sufficient to reduce the anticipated guilt in current consumption of vices without actually following through with the virtuous choice in the future.

We also contribute to existing research on self-control, which suggests that viewing choices collectively increases self-control as compared with viewing the same choices individually (Bénabou & Tirole, 2004; Kirby & Guastello, 2001). For example, according to Loewenstein and Prelec (1991), "Any operation, custom, or habit that causes the stream of purposeful activity to fragment into a series of isolated choices . . . encourages impatient choice" (p. 351). An implicit assumption in this research is that current choices are seen by an individual to be predictive of future behavior. Contrary to this notion, our theory is based on the idea that people are often overly optimistic about their future behavior (Taylor & Brown, 1988). Building on such optimism about the future, our work shows that participants exercise more self-control in isolated choices as compared with when these choices are seen in broad frames together with similar future choices. Hence optimistic beliefs about the future play a crucial role in our framework and drive an important distinction between the current findings and previous research, which was based on the assumption that current actions are indicative of future behavior. A further test of the idea that optimistic beliefs about future choices drive the wedge between past research and our findings comes from a separate experiment where we directly manipulated the magnitude of the optimistic bias by using a procedure described by Kirby and Guastello (2001). Participants in this experiment chose between a yogurt and a cookie in three conditions. The isolated-choice and repeated-choice conditions were the same as in the studies reported earlier in this article. The third condition, the repeated-choice-with-link condition, was the same as the repeated-choice condition except that prior to the choice, participants were told that their current choice was the best indicator of how they would choose next week. Specifically, they were told that if they chose a cookie (or yogurt) today they would be likely to choose a cookie (or yogurt) next week, because each time they would be offered this choice they would be in the same situation. Kirby and Guastello (2001) used such choice linking to manipulate optimism about future behavior. The idea here is that if people are led to believe that their future choices are likely to be the same as their current choices, then their optimistic belief in exerting self-control later and its effect on their current preferences can be dampened. The results corroborated this reasoning. Significantly more participants (90%) chose a vice in the repeated-choice condition compared with participant choices in the isolated-choice condition (46.6%), $\chi^2(1, N = 60) = 13.00, p < .001, \phi = .47$. However, suggesting a link between current and future choices significantly reduced the

share of participants choosing the vice in the immediate period from 90% to 53%, $\chi^2(1, N = 60) = 10.00, p < .01, \phi = -.41$.

The present research also adds to the emerging literature on sequential choices, which shows that choices made in isolation differ from those made in connection with other decisions. For example, speaking to the interconnected nature of consumer choice, Khan and Dhar (2006) showed that preferences among alternatives might be affected systematically by consumers' prior choices (also see Novemsky & Dhar, 2005). We add to this stream of work by showing how preferences among alternatives can be affected by not prior but future choices.

Directions for Future Research

In the present research, we examined the effect of future choices on the exercise of self-control in the context of vice–virtue choices and delay of gratification. The proposed framework can be readily extended to other decisions and choices that might require exercising self-control and evoke guilt (e.g., choosing more expensive items, excessive spending, and immoral but tempting decisions). For instance, viewing a decision, such as how honest to be on one's tax returns in the context of future tax filings, may lead to less moral behavior in the present decision (e.g., seeking aggressive deductions in this year's tax returns). This suggests that optimistic predictions can affect a range of decisions when future behaviors are made salient.

Optimism about future choices may not always decrease the self-control exercised in immediate decisions. We showed that future choices did not impact the current preferences when the choices were not from the same domain. We proposed that choices from the same domain may be more effective than choices from unrelated domains in reducing the guilt by allowing individuals to believe that they can compensate for choosing a vice now by exercising greater self-control later. Although this provides initial evidence that the effect of optimistic beliefs on self-control may not be generalizable across domains, further research is needed to examine how domain specificity affects the proposed effect. For example, it is possible that choices from different domains are not integrated and hence a future choice from a different domain makes people view their current choice in isolation. Another possibility is that guilt is domain sensitive and positive events in one domain do not make up for negative events in other domains even if they are integrated. Further research is needed to discern between these accounts.

Future researchers can also investigate additional conditions where future choices may not diminish the guilt from choosing an immediately tempting item. One such situation may arise when an optimistic view of future behavior redefines the meaning of the first act. For example, thinking about fidelity in the future towards one's partner may not reduce the guilt from and the likelihood of infidelity in the present. In this case, rather than reducing the guilt from the current action, future virtuous behavior may highlight hypocrisy and a need for consistency in the present.

Another interesting extension would be to explore when choices may be spontaneously seen as connected or disconnected. For example, snacks and movies that may not be seen as belonging to the same domain could be framed as being connected by superimposing a context. For example, telling people that movies and snacks are two decisions they will make as part of a weekend

activity may connect the two choices and hence the proposed effect would apply. A fruitful extension would thus be to look at the interplay of goals with choices. For example, it is likely that when people consider their choices in terms of an underlying goal (e.g., leading a healthy life), they would spontaneously see different choices (e.g., eating and physical activities) as being connected. It is therefore possible that people who choose with goals in mind may be more likely to make impulsive choices (e.g., having an unhealthy lunch) by optimistically predicting that they would make goal-consistent choices later (e.g., go for a hike).

An important related question is when do people connect their current choice with future choices and when do they not make this connection? For example, while deciding whether to attend a party or to prepare for an exam, people are often aware of another upcoming party next week. Similarly, while deciding what to have for lunch, people are aware of having to make the same decision later at dinner. It would therefore be interesting to investigate the conditions under which the current decision is grouped with future choices. For example, a person may think of the future breakfast choices when he or she is on a 3-day trip but not in everyday life, where he or she might focus more on the attributes of the available alternatives.

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(Appendix follows)

Appendix A

Movies Used in Experiment 1

Highbrow Movies

Winged Migration (2002) Documentary

Directors: Jacques Cluzaud and Michel Debats
Documentary on the migratory patterns of birds, shot over the course of three years on all seven continents.

Raise the Red Lantern (1991) Drama/Subtitled

Director: Yimou Zhang
 Starring: Li Gong, Jingwu Ma, and C. Cao
China, 1920. One master, four wives. After her father's death, 19-year-old Songlian is forced to marry Chen Zuoqian.

4 Little Girls (1997) True Story/Documentary

Director: Spike Lee
Birmingham, 1963. An explosion rocked a community and awakened a sleeping nation. A documentary of the racial terrorist bombing of an African American church during the Civil Rights Movement.

Schindler's List (1993) Drama/War

Director: Steven Spielberg
 Starring: Liam Neeson and Ben Kingsley
Oskar Schindler uses Jews to start a factory in Poland during the war. He sees the horrors endured by Jews and starts to save them.

Lowbrow Movies

I Love Trouble (1994) Action/Comedy/Romance

Director: Charles Shyer
 Starring: Julia Roberts and Nick Nolte
Romance was never more dangerous! Peter and Sabrina are competing Chicago newspaper reporters who join forces to unravel the mystery behind a train derailment.

Presumed Innocent (1990) Crime/Thriller/Suspense

Director: Alan Pakula
 Starring: Harrison Ford
After he becomes the prime suspect for his girlfriend's murder, Rusty Sabich goes on a search to find the real killer and finds out he/she may be closer to him than he thinks.

Bruce Almighty (2003) Comedy

Director: Tom Shadyac
 Starring: Jim Carrey and Jennifer Aniston
A guy who complains about God too often is given almighty powers to teach him how difficult it is to run the world.

Ocean's Eleven (2003) Action/Thriller

Director: S. Soderberg
 Starring: Julia Roberts, George Clooney, and Brad Pitt
Ocean is paroled from prison and is about to rob a vault housing cash of 3 casinos in Las Vegas when he discovers that his ex-wife is the main squeeze of the casino's owner.

Note. Actual participants saw the highbrow and lowbrow movies in a random order. Also, for each movie, participants saw a movie poster alongside the description.

Appendix B

Impulsivity Scale

Item	Usually would describe me	Sometimes would describe me	Seldom would describe me
Enjoy art	1	2 3	4 5 6 7
Impulsive ^a	1	2 3	4 5 6 7
Funny	1	2 3	4 5 6 7
Careless ^a	1	2 3	4 5 6 7
Open-minded	1	2 3	4 5 6 7
Self-controlled ^a	1	2 3	4 5 6 7
Fun-loving	1	2 3	4 5 6 7
Extravagant ^a	1	2 3	4 5 6 7
Like variety	1	2 3	4 5 6 7
Farsighted ^a	1	2 3	4 5 6 7
Enjoy music	1	2 3	4 5 6 7
Responsible ^a	1	2 3	4 5 6 7
Independent	1	2 3	4 5 6 7
Restrained ^a	1	2 3	4 5 6 7
Easily tempted ^a	1	2 3	4 5 6 7
Rational ^a	1	2 3	4 5 6 7
Traditional	1	2 3	4 5 6 7
Methodical ^a	1	2 3	4 5 6 7
Enjoy spending ^a	1	2 3	4 5 6 7
A planner ^a	1	2 3	4 5 6 7

Note. Prudence items included self-control, farsighted, responsible, restrained, rational, methodical, and a planner.

^a Item used in Puri's (1996) Consumer Impulsiveness Scale.

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