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The tendency to procrastinate applies not only to aversive tasks but also to positive experiences with immediate benefits. The authors propose that models of time discounting can explain this behavior, and they test these predictions with field data and experiments. A multicity study shows that people with unlimited time windows delay visiting desirable landmarks; however, procrastination is reduced when the window of opportunity is constrained. Similarly, people procrastinate in redeeming gift certificates and gift cards with long deadlines more than those with short deadlines, resulting in overall lower redemption rates. These results run counter to participants' predictions and typical models of impulsive behavior.

*Keywords:* procrastination, intertemporal discounting, consumer planning, hedonic consumption, behavioral economics

## Procrastination of Enjoyable Experiences

Procrastination, the tendency to postpone an action to a future date, is common behavior for many of the aversive tasks that people face daily. Often, people procrastinate doing tasks because immediate costs are high while benefits are temporally remote. For example, a student may procrastinate writing a paper because the immediate effort is substantial and the payoff (a good grade) is delayed. The types of tasks used in the procrastination literature are typically unpleasant tasks, such as writing assignments, studying, exercising, dieting, and saving for retirement. The majority of these tasks are usually high in immediate costs but low in immediate benefits, thus making them aversive in the short run. In this article, we propose that procrastination may also occur for enjoyable, positive utility tasks in which costs and benefits are experienced within close temporal proximity.

### THEORIES OF PROCRASTINATION

Akerlof (1991, p. 1) defines procrastination as the postponement of tasks "until tomorrow without foreseeing that

when tomorrow comes, the action will be delayed yet again." Procrastination occurs because present costs seem much higher than future costs, and even though the value of the future benefit remains unchanged, the net benefit for completing the task seems higher if it is postponed. The discounting of future costs inherent in traditional models of procrastination may be associated, at least in part, with the salience of other activities that need to be completed in the near future; by virtue of thinking about these proximal responsibilities but neglecting to think about future tasks, people believe that they will have more time available in the future than they actually do. Substantial research has connected the procrastination of aversive tasks with biased assessments of future availability, and work on planning fallacies and task intention strength shows that people consistently overestimate their ability to complete an aversive task within a specific time frame (Ajzen 1991; Buehler, Griffin, and Ross 1994; Griffin and Tversky 1992; Kahneman and Lovallo 1993). Prescriptive advice for overcoming repeated procrastination typically entails setting specific deadlines, or windows of opportunity, so that people must complete tasks promptly (Ariely and Wertenbroch 2002). Creating a limited time window increases the cost for not completing the activity in the near future, which offsets the temporal discounting that would otherwise occur.

The concept that future costs are more heavily discounted than benefits has received strong evidence in recent research in psychology and marketing (for a comprehensive review, see Soman et al. 2005). For example, work on rebate redemption, in which a cost of current effort is required to receive a benefit of future payment, shows that people discount future efforts more heavily than monetary rewards

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such that completing a rebate in the future is more attractive than completing it today (Soman 1998; Soman and Gourville 2005). This work is consistent with resource slack theory (Zauberman and Lynch 2005), which shows greater discounting of time investments relative to monetary outcomes. The difference in discounting is attributed to people's beliefs that they will have more free time (slack) in the future than they have in the present; overprediction of future slack is stronger for time than for money. Thus, future monetary benefits remain nearly as appealing as current benefits, while the cost associated with effort diminishes as temporal distance increases.

While Soman's (1998) illusion of delayed incentives and Zauberman and Lynch's (2005) resource slack theory focus on how discounting differences for time versus money affects actual behavior, other work on temporal distance has examined how perception of purely nonmonetary benefits and costs in the short or long run can affect predicted behavior. For example, temporal construal theory suggests that people tend to focus on desirability aspects of an activity in the long run but then switch to a focus on the feasibility aspects of the activity as it actually approaches (Trope and Liberman 2003). Taken together, these theories suggest that future benefits are overemphasized relative to future costs. Future costs (especially effort or time costs) are heavily discounted, while future benefits (especially nonmonetary benefits) retain close to their full value. Table 1 provides a summary of the main temporal discounting theories' findings relevant to procrastination.

#### AVERSIVE VERSUS ENJOYABLE EXPERIENCES

Although procrastination is typically found with tasks in which immediate costs are high but benefits are remote, and thus are aversive, we propose that myopic procrastination can also occur for enjoyable, positive utility activities in which costs and benefits are experienced with close temporal proximity. In both cases, the driving factor is the difference in perceived costs for temporally close versus temporally far outcomes. For example, consider the different activities of signing up for an employer's health care plan before the annual deadline (aversive) versus visiting a local museum before the end date of an exhibition (enjoyable). In both cases, the effort required to complete the activity appears small when it is far off, making it is easy for a person to imagine completing it sometime in the future. However, the same costs become more salient as the activity approaches in time, such that the overall net benefits appear

smaller than they did previously. As a result, the person procrastinates doing the activity until a future time when the costs again appear small. Only when faced with a strict deadline (e.g., the sign-up deadline or the end of the exhibition) does the person stop procrastinating. A comparison of completion times relative to a final deadline reveals that health plan sign-ups for a *Fortune* 400 company (data provided by Previtero 2008) and museum visits (data provided by Museum of Contemporary Art San Diego) have a similar pattern, with a large spike in completion in the days immediately before the deadline (see Figure 1).

Although procrastination behavior is often defined as a delay in completing a task until a deadline approaches, as in the health insurance and museum examples, procrastination is also observable through other behavioral measures. For example, failure to complete a task before the expiration of a deadline has also been attributed to procrastination, such as the failure to mail a package or complete a rebate form (Akerlof 1991; Soman 1998). Though not a perfect measure of procrastination, differences in completion rates for different groups can be used as a proxy for different levels of procrastination, with a higher failure to complete being representative of a higher level of procrastination. Limited windows are most effective at reducing this type of procrastination. For example, O'Donoghue and Rabin (1999b) suggest limited time windows as a prescription for procrastination in signing up for a savings plan, in which they operationalize procrastination behavior as the failure to complete the task. In this article, we measure procrastination of enjoyable experiences primarily through completion rates, with more heavily procrastinated activities resulting in less overall completion.

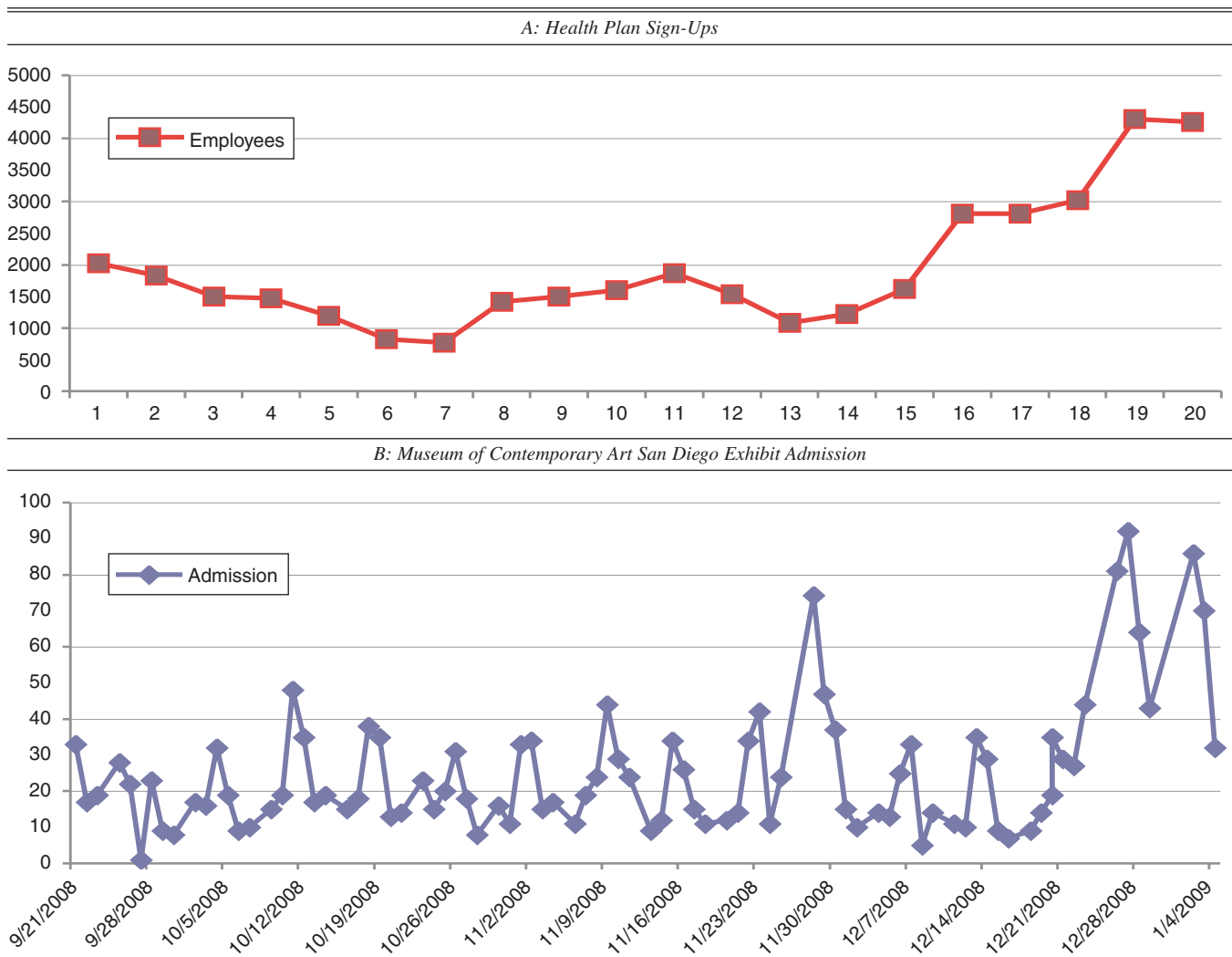
Procrastination occurs for both aversive and enjoyable activities because of people's higher discounting of time costs but lower discounting of benefits; activities with costs and benefits that occur with close temporal proximity will appear to have a larger net benefit when imagined being completed in the future than when completed today.<sup>1</sup> This differential discounting of costs and benefits can lead to the "Yes ... Damn!" effect that Zauberman and Lynch (2005) describe, in which a person agrees to complete a future

<sup>1</sup>The dominant costs in most of the activities we explore herein are costs of time and effort, and the dominant benefits are experiential rather than monetary. We use the generic terms "cost" and "benefit" to capture these particular costs and benefits along with any others that participants may experience.

Table 1  
COMPARISON OF TEMPORAL DISCOUNTING THEORIES

Theory	Predictions	Types of Costs and Benefits	Timing of Costs and Benefits
Illusion of delayed incentives (Soman 1998)	Future effort discounted heavily relative to present effort; future monetary benefits are discounted less	Cost of time (effort); monetary benefit	Costs are immediate; benefits are distant
Resource slack (Zauberman and Lynch 2005)	Future nonmonetary costs/benefits (time) are discounted more than monetary costs/benefits because of mispredictions of future time versus money slack	Costs are either money or time (minutes); benefits are savings of money or time	Trade-offs between immediate costs (or savings) and distant costs (or savings)
Temporal construal (Trope and Liberman 2003)	Focus on high-level attributes (desirability) in long run, but focus on low-level attributes (feasibility) in short run	Cost of time or money; experiential or monetary benefit	Low-level attributes (costs) are immediate; high-level attributes (benefits) are distant
Procrastination of enjoyable experiences	Future costs discounted heavily relative to present costs; future experiential benefits are not discounted	Cost of time (effort); experiential benefit	Costs and benefits are simultaneous (same period)

Figure 1  
 PROCRASTINATION BEHAVIOR FOR AVERSIVE AND ENJOYABLE TASKS



Notes: Figure 1, Panel A, shows a time line of task completion for employees completing their employer health plan sign-up during an annual open enrollment window. Figure 1, Panel B, shows a time line of adult museumgoers attending a limited engagement exhibition. In both cases, people show procrastination, as evidenced by the large spike in the days immediately before the deadline.

activity, either enjoyable or aversive, but then regrets it when the occasion actually arrives. What distinguishes our findings from procrastination of aversive tasks is the notion that most aversive tasks have a benefit that is temporally distant from the cost; with enjoyable activities, however, the costs and benefits occur in close temporal proximity. Building on prior procrastination and discounting research, we develop our first prediction:

H<sub>1</sub>: Procrastination, as measured by either postponement of or failure to complete an activity, occurs for enjoyable activities with temporally close costs and benefits.

Our second prediction suggests a prescriptive remedy for procrastination and is derived from theoretical and empirical research suggesting that performance and noncompletion rates can improve for procrastinated aversive tasks when people are given limited time windows for completion (Ariely and Wertenbroch 2002; O’Donoghue and Rabin 1999a, b):

H<sub>2</sub>: People’s tendency to procrastinate enjoyable activities is reduced when they are faced with a limited time window.

The last set of predictions focuses on the effect of increased relative costs and benefits on procrastination. The heavy discounting of future time costs relative to present time costs, coupled with the notion that benefits are not discounted as steeply, suggests that an increase in benefits will affect the level of procrastination differently than an increase in costs. Consider the effect of increasing the benefit of an activity while keeping cost constant. The activity becomes more appealing, and average completion rates are likely to increase. However, the difference in procrastination for a short time window versus a long time window will also change. Because time costs are heavily discounted, the difference in perceived costs is magnified in the presence of higher benefits in long time frames relative to short ones. In essence, the “Yes ... Damn!” effect is exacerbated for the long time frame, with an enthusiastic “Yes” followed by an

unexpected “Damn” (Zauberman and Lynch 2005). Consequently, we expect that the difference in procrastination levels between short and long time frames will be increased when relative benefits increase.

H<sub>3a</sub>: An increase in future benefits (relative to costs) for an enjoyable activity increases the difference in procrastination levels for short versus long time windows.

In contrast, when the cost of an activity is increased but the benefit is unchanged, we predict that the effects on procrastination will be less extreme. In this situation, we expect overall completion rates to be reduced because the experience is now less appealing. However, unlike the increased benefit situation, differences in procrastination levels for short versus long time frames will not change significantly. Because of heavy discounting of future time costs, an increase in costs has little effect on current behavior, and there should be a minimal effect on the difference in procrastination for the different time frames.

H<sub>3b</sub>: An increase in future costs (relative to benefits) for an enjoyable activity does not significantly affect the difference in procrastination levels for short versus long time windows.

To summarize, in H<sub>3a</sub> and H<sub>3b</sub>, we focus on evaluating the difference in procrastination levels for short versus long time frames when costs or benefits increase relative to a baseline level. When procrastination is measured as failure to complete, this suggests that the difference in long versus short time frame completion rates (i.e., the effect size) will be larger for activities with increased benefits than for those with increased costs. Note that we do not predict an interaction of increased costs and increased benefits; if both factors are increased simultaneously, the overall ratio between costs and benefits would be largely unchanged and consequently have little or no effect on level of procrastination. We test the role of limited time windows, the salience of immediate versus future costs, and the effects of increased costs and benefits for procrastination of enjoyable activities in a series of five experiments run in the field and in the lab.

#### EXPERIMENT 1: A FIELD SURVEY

Experiment 1 tests whether natural limited and unlimited time windows have the predicted effect on consumer behavior—more explicitly, whether people facing unlimited time windows are more likely to procrastinate engaging in positive experiences. Similar to the procrastination of aversive tasks, we expect that the procrastination of enjoyable activities will be reduced when people face stricter windows of opportunity. To test this, we take advantage of a natural setting in which people face limited or unlimited windows for completing an enjoyable activity: a visit to a highly rated landmark (e.g., monuments, museums) in a large international city. We regard residents as having an unlimited window of opportunity in their home city and tourists, who are in a city for a well-defined period, as having a limited window. Comparing the behavior people with limited or unlimited windows enables us to test whether people are actively procrastinating engaging in these enjoyable visits.

#### Method

We distributed surveys in public areas in three major cities (London, Chicago, and Dallas) to 199 passing pedes-

trians who were either visitors or permanent residents. The survey asked participants how much time they had been in each of seven international cities (if ever) and which major local landmarks they had visited in each city. For each city, we compiled the list of landmarks using each city’s formal Web site recommendations for the most popular and recommended sites (a complete list of cities and the landmarks in each city appears in the Appendix). We further asked residents of a city how many of their visits to the local landmarks were done alone or with other local residents, with out-of-town guests, or with both. The rationale for this question was to determine whether some of the residents’ visits to local landmarks took place as a result of an externally imposed shorter time frame, such as a visit of a friend from out of town, which acts as a limited time window similar to that which tourists experience.

#### Results and Discussion

*Overall results.* Although we administered surveys in London, Chicago, and Dallas, respondents were not required to be residents of those cities. Therefore, for each surveyed city, we classified survey respondents as either residents of or visitors to that particular city. In addition, we report respondents who lived more than one year in one of the other six cities in the survey as residents of those cities. Of 99 Chicago respondents, 44 reported being residents of Chicago; of 70 London respondents, 36 reported being residents of London; and of 30 Dallas respondents, 29 reported being residents of Dallas. Of the total reported residents, we dropped 11 from further analysis because they had lived in that city for fewer than three months. Respondents answered questions about multiple cities, yielding 434 visitor observations in which a respondent reported spending time (anywhere from a few hours to several months) in one of the seven different cities on the survey. The median respondent visited three of the seven cities included in the survey.

Examining the results for residents, we find a slight linear increase in the number of landmarks visited for the first two years of residency but a relatively flat line after that. More specifically, residents who lived in their respective city for less than one year visited an average of 3 landmarks in their home city; this increases to an average of 4.5 landmarks after one year, 5 after two years, and 4.8 after three or more years. Even residents of twenty or more years report having visited an average of only 5 landmarks in their home city. Notably, 60% of residents’ visits to landmarks occurred in the presence of out-of-town guests, suggesting that it was the temporary demands of a visitor that encouraged them to visit the landmark in question.

Examining the results for visitors, we find that the average visit to one of the seven cities in the survey is sixteen days long. Not surprisingly, visitors who have one day or less to see the city report seeing an average of only 1.4 landmarks during their visit. The results for longer visits increase steadily: 1.7 landmarks for two- or three-day visits, 3.8 for four to seven days, 4.4 for two weeks, and 5.5 for three weeks. Contrasting these numbers with those observed for residents, we find that the average two-week visitor has seen significantly more than the average resident who has lived in a city for up to one year (4.4 versus 3.1;  $t(59) = 3.3$ ,  $p < .001$ ), and the average three-week visitor has seen mar-

ginally more than an average resident who has lived in that city for three or more years (5.5 versus 4.7;  $t(21) = 1.4, p = .09$ ). Notably, the number of sights seen begins to taper off for visits of four weeks or longer, averaging 4.3 landmarks per visit, which results in an inverted U-shaped pattern of the data. This pattern suggests that visitors who stay for one or more months in a city appear to behave like residents (see Figure 2).

*Alternative explanations.* As an alternative explanation for the results, some of the resident participants might simply not enjoy visiting landmarks, thus biasing the results downward for that group. To rule this possibility out, we ran an additional analysis of the data, controlling for respondents who do not travel and/or do not visit landmarks in the cities to which they travel. We dropped from the data set any respondent who had not visited at least one other city in the survey and/or had visited 1 (or fewer) landmark in all other cities to which they had been. This left us with 134 respondents, all of whom visited multiple landmarks in at least two cities in the survey. The results for residents in this subgroup are nearly identical to those of the full data set; residents visited an average of 3 landmarks in their home city if they had been there less than one year; this increased to 4 landmarks after one year, 5 after two years, and 5.3 after three or more years. Again, 62% of residents' visits to landmarks were made with out-of-town guests. The results for visitors of this data subset are also similar to those we observed with the entire set of respondents: Visitors who stay in a city for one day or less see an average of 1.6 landmarks during their visit; the results for longer visits increase to 3.1 landmarks for two- or three-day visits, 3.8 for four to seven days, 4.4 for two weeks, and 5.3 for three weeks. Thus, even when people who appear to avoid tourist landmarks are removed from the sample, the pattern we observe is persistent: Visitors with limited time windows see more than residents who apparently enjoy visiting landmarks in cities other than their own.

Further analysis of the data at the per-city and per-person levels yields additional insights into the behavior of the

respondents in our survey. At the city level, the data set provides enough information to directly compare Chicago residents ( $n = 44$ ) with Chicago visitors ( $n = 52$ ) and London residents ( $n = 36$ ) with London visitors ( $n = 62$ ). For both cities, the pattern we observed for the full data set is maintained, with two- and three-week visitors seeing as many or more landmarks as the one-year residents. For example, Chicago two-week visitors saw more than Chicago one-year residents (4.3 versus 3.8,  $p = .08$ ), and London two-week visitors saw more than London one-year residents (5 versus 3.1,  $p = .001$ ). We can also examine the results per respondent to determine how short-term visits differ from residency; we find that of the 36 London residents, 61% visited more landmarks in other cities than they had at home. We obtained similar results for the other two cities: Of the 44 Chicago residents, 57% visited more landmarks in other cities, and of the 29 Dallas residents, 55% visited more landmarks elsewhere (see Figure 3).

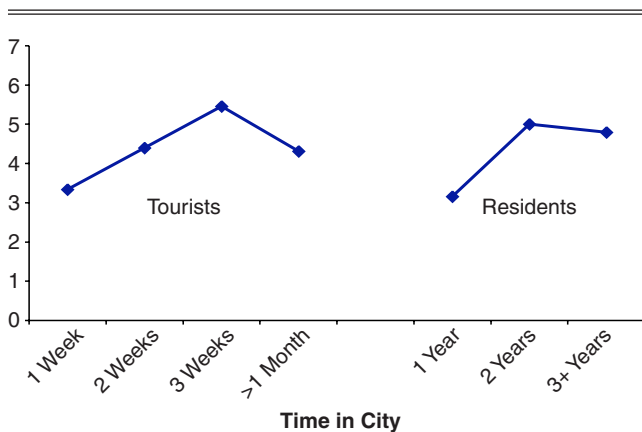
A case could be made that residents are less likely to visit local landmarks because they obtain less enjoyment from it than tourists do and, thus, their overall utility for this activity is lower. We address this concern in Experiment 2 by running a follow-up survey with former residents of one of the cities in the field survey. We chose former residents for two reasons. First, we expected that during the time they were residents of the city, they would display procrastinating behavior similar to the residents in the previous survey. Second, we predicted that the process of preparing to move away from a city would operate as a limited time window, resulting in behavior during the last few months of residency similar to that of the tourists.

EXPERIMENT 2: SURVEY OF FORMER RESIDENTS

Method

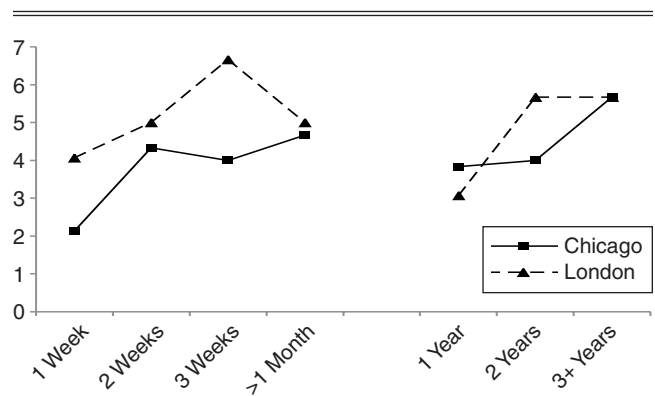
We contacted people who had lived in Chicago while completing undergraduate or graduate school but had since moved away and asked them to voluntarily complete an online survey regarding their visits to landmarks in the city. We used the same set of seven landmarks as in Experiment 1. For each landmark, we asked respondents when they visited the landmark relative to their move date. We also asked

Figure 2  
NUMBER OF LANDMARKS VISITED BY TOURISTS AND RESIDENTS



Notes: This figure shows the number of landmarks visited by tourists and residents of seven international cities plotted against the amount of time respondents spent in each city. The results are between-subjects.

Figure 3  
PER-CITY ANALYSIS OF VISITOR AND RESIDENT VISITS



Notes: This figure shows a comparison of the number of landmarks tourists and residents of Chicago (solid lines) and tourists and residents of London (dashed lines) visited. The results are between-subjects.

them to complete a set of survey questions about the landmark they had most recently visited. This enabled us to assess both their enjoyment of the visit and their reasons for visiting it at that specific point in time. Finally, we asked a subset of respondents to indicate which landmarks they had visited in other major cities (taken from the lists used in Experiment 1) during the time they lived in Chicago to test whether any observed procrastination toward Chicago landmarks carried over to their behavior as visitors in other cities; this constituted a within-subject effect, which would rule out procrastination and suggest an alternative explanation, such as a lack of preference for landmark visits.

### Results and Discussion

**Overall results.** A total of 51 people responded to our request and completed the survey. The average length of time spent living in Chicago was three years, with a minimum of one year and a maximum of six years. The average number of landmark visits per person was 4.3 landmarks, similar to the short-term residents in Experiment 1. Of the 219 separate landmark visits that respondents reported, 104 happened more than a year before moving, another 28 happened more than six months before moving, and the remaining 87 (40%) happened in the final six months. Of these visits, 39 (18%) happened in the final two weeks before moving (presumably while these people were in the midst of packing and preparing to move). Comparison of these visit time frames with the projected distribution if residents uniformly spread visits over the time spent living in the city shows that the actual visits are significantly clustered toward the end of their residency ( $\chi^2(6) = 42.0, p < .001$ ).

**Alternative explanations.** As in Experiment 1, the concern exists that the former residents in our survey simply do not enjoy visiting landmarks at all, in any city. To check for this, a subset of 36 respondents also answered questions about their visits to landmarks in other major cities to determine whether they exhibit a lack of enthusiasm for visiting landmarks in cities other than Chicago. All but 1 of the 36 respondents had visited at least one of the six major cities in the survey; the average respondent visited three other cities and had seen 3.7 landmarks per city. As a more direct comparison of behavior within the relevant time frame, we restricted our analysis only to trips made while the respondent was a resident of Chicago. In total, 25 respondents visited one of the six cities while residing in Chicago; these “active travelers” visited an average of 3.4 other cities and had seen an average of 4.5 landmarks per city. In Chicago, they visited an average of 4.68 landmarks, slightly more than the full survey population, but 45% of those visits happened within the final six months of residency, consistent with the behavior of the full group. Within the active traveler group, 64% visited more landmarks in a single city outside Chicago than in their home city. Consistent with Experiment 1, a comparison of Chicago visits made during all but the last six months of residency with other city visits finds more visits to landmarks in cities other than the respondents’ own (2.56 versus 4.5; paired  $t(24) = 4.15, p < .001$ ), suggesting that the procrastination effect for residents versus visitors occurs even at the individual level (see Figure 4).

To further test whether procrastination in visiting local landmarks is due to a lack of enjoyment for such visits, we

asked respondents to report how much they enjoyed visiting the landmark and whether it was worth the effort. On a seven-point scale, respondents agreed with the statement “I enjoyed my visit to this landmark” ( $M = 6.02, SD = 1.07$ ) and disagreed with the statement “Visiting this landmark was not worth the effort” ( $M = 1.62, SD = 1.09$ ). Thus, a delay in visiting landmarks until the time immediately before moving appears to be driven by reasons other than a lack of positive utility from the experience. Instead, and in line with the previous survey results, resident respondents appear to procrastinate visiting landmarks and make up for it by visiting these sites in the final weeks of residency, when their limited time window is most salient.

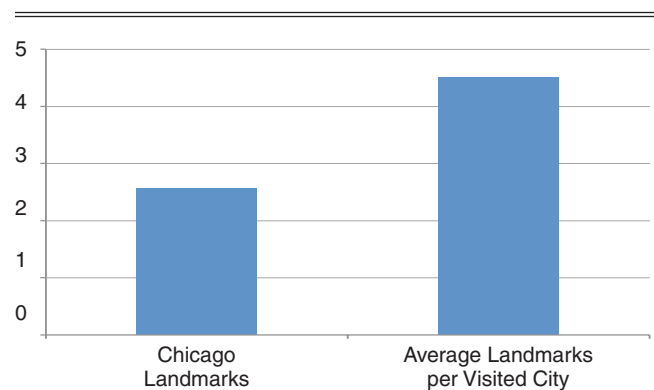
Consistent with  $H_1$  and  $H_2$ , Experiments 1 and 2 show that residents are less likely to visit landmarks in their home city than tourists, who have more limited time frames. Additional surveys of former residents confirm that residents enjoyed visiting these landmarks and that they had visited landmarks in other cities during the same time frame, ruling out a utility-based explanation. Although the behavior of residents, tourists, and former residents in the field is consistent with procrastination of enjoyable experiences, it provides minimal insight into the reasoning underlying this behavior. Building on resource slack theory, which suggests that people consistently overestimate their future time resources (Zauberman and Lynch 2005), we propose that the tendency to procrastinate positive experiences is due to people’s biased estimation of future time availability. The following three experiments test whether biased estimations of future time availability drive procrastination of enjoyable activities (Experiments 3 and 4) and how manipulations of costs and benefits affect the procrastination behavior relative to our predictions (Experiment 5).

### EXPERIMENT 3: FUTURE TIME AVAILABILITY FOR SPA CERTIFICATES

#### Method

We recruited respondents near their workplaces and asked them to complete a questionnaire on consumption planning; we provided no compensation for participation.

Figure 4  
WITHIN-SUBJECT ANALYSIS OF VISITS IN CHICAGO VERSUS OTHER CITIES



Notes: This figure shows the comparison of number of landmarks visited in Chicago and in other major cities while participants were living in Chicago; comparison is within-subject.

Respondents ( $n = 85$ ) were middle-class working adults, ranging in age from 26 to 60 years. We asked participants to imagine that they held a gift certificate for a day spa massage that would need to be used before expiration within a one-week time frame. In one version of the survey, the one-week time frame was set in the near future (within the next week):

Imagine that we were to give you, right now, a gift certificate good for a relaxing 45-minute massage at a local day spa. However, the certificate will expire one week from today.

In the second version of the survey, the week was set in the distant future (a month from now):

Imagine that we gave you a gift certificate good for a relaxing 45-minute massage at a local day spa, which you put away and forgot about. Now imagine it's a day exactly one month from today, and you've just discovered that you still have the certificate. Looking at the certificate, you realize that it expires one week from the day you found it.

In both conditions, participants provided an estimate of how likely they were to use the certificate in the week before it expired, how busy they expected to be in that time frame, and how much they would be willing to pay to extend the expiration date on the certificate. Although both groups had only one week to use the certificate, we predicted that those thinking of the current week would expect to be busier and less able to use it than those considering a future week. More specifically, if temporal distance has an effect on usage predictions, respondents considering use one month from now should have higher estimates of both their free time (i.e., resource slack) and their likelihood to use the certificate in the week before it expires than respondents in the "next-week" condition. Respondents in the one-month condition should also offer less money to extend the life of the certificate because of their higher expectations for use.

### Results and Discussion

Consistent with expectations, respondents in the near-future condition reported a lower likelihood of use than those considering use in a month ( $M_{wk} = 5.5$  versus  $M_{mo} = 7.1$ ;  $t(80) = 2.5$ ,  $p = .007$ ). In addition to predicting lower use, respondents considering use within the next week expected to be more busy than those considering a week in the distant future ( $M_{wk} = 5.4$  versus  $M_{mo} = 3.9$ ;  $t(80) = 2.3$ ,  $p = .01$ ). Respondents in the near-future condition also had a higher willingness to pay to extend the expiration date by an additional two weeks ( $M_{wk} = \$8.43$  versus  $M_{mo} = \$5.14$ ;  $t(69) = 1.9$ ,  $p = .03$ ).

These results support our prediction that differences in predicted future time availability make the distant future appear more appropriate for completing an enjoyable task than today. As documented in resource slack theory research (Zauberman and Lynch 2005), people greatly discount future time investments but continue to perceive future benefits as being as appealing as immediate benefits. This way of thinking is myopic because of participants' lack of realization that they will likely be as busy next month as they are now and the task will need to be postponed again. This myopia underlies a notable contradiction between the

results of Experiments 1 and 3; in Experiment 1, residents with longer time windows were less likely to complete the enjoyable task than those with short time windows. At the same time, participants in Experiment 3 who considered using a certificate within a longer window predicted that they would be more likely to complete the task than those with a short window. We explore this contradiction between actual and predicted procrastination and its relationship to perceived time availability in Experiment 4.

### EXPERIMENT 4: FRENCH CAFÉ GIFT CERTIFICATES

Experiment 4 integrates the previous experiments by using a field experiment to test the apparent contradiction between the actual behaviors we documented in Experiment 1 and the predicted behavior in Experiment 3. In this experiment, we provided participants with gift certificates to a high-quality local French pastry shop. We manipulated the gift certificates to have either a short expiration date (three weeks) or a longer expiration date (two months). Similar to the previous studies, we predict that recipients of certificates with longer expiration dates will procrastinate using the certificate and have a lower redemption rate than those with shorter expiration dates. In addition, we test the role of biased time availability predictions by comparing actual redemption rates with redemption rates predicted by a separate control group; we then conduct a follow-up survey that asks participants why they did or did not redeem their certificates to better understand their behavior.

### Method

As a first step, we measured predicted redemption rates for the gift certificates using a control group of 80 undergraduate students who were similar in composition to the participants in the main part of the experiment. Participants in this prediction group evaluated copies of the gift certificates and completed a survey about their attitudes toward the certificate and their predictions for whether they would be able to use it before it expired.

For the primary part of the experiment, we distributed gift certificates to a separate population of 64 undergraduate students at a large western university. We divided the gift certificates into two conditions that differed in the amount of time before the gift certificate expired; recipients had either three weeks or two months to use the gift certificate. The certificates were good for a slice of cake and a beverage at a high-quality local French pastry café; the certificates were worth approximately \$6 each. We tracked redemption rates for all certificates. After all certificates expired, we contacted the recipients and asked them to complete a follow-up survey about their experience. A total of 33 participants completed the follow-up survey.

### Results and Discussion

*Prediction results.* As we expected, there was a significant effect of temporal distance on predictions of usage for the gift certificate among participants in the prediction group. Participants who evaluated certificates with longer two-month expiration dates ( $n = 38$ ) had stronger positive feelings toward the café (5.84 versus 5.29;  $t(78) = 1.8$ ,  $p = .04$ ), believed that they would be more likely to use it before it expired (5.47 versus 4.5;  $t(75) = 2.4$ ,  $p = .009$ ), reported that it would not be difficult to use the certificate given how

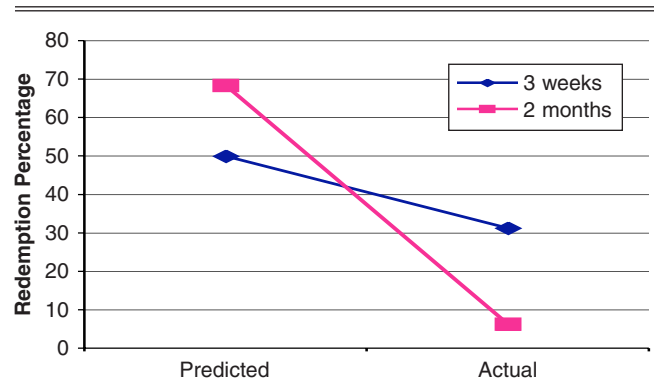
busy they expected to be (4.58 versus 3.67;  $t(78) = 2.3, p = .01$ ), and had an overall higher predicted probability of use (68% versus 50%;  $t(75) = 3.3, p < .001$ ) than participants who evaluated certificates with shorter three-week expirations ( $n = 42$ ). This is consistent with the results of Experiment 3 and serves as a baseline for evaluating actual behavior.

**Behavioral results.** Comparing these baseline numbers from the prediction group with the behavior of participants who actually received the certificates, as predicted and contrary to the expectations of participants in the prediction group, we find that recipients of certificates with longer expiration dates were less likely to redeem their certificates than those with shorter expiration dates. Of the 32 respondents who received a three-week certificate, 10 redeemed it (31%), compared with only 2 of 32 respondents (6%) who received a two-month certificate (Figure 5). A chi-square test indicates that this difference in usage is significant ( $\chi^2(1) = 6.6, p = .01$ ).

**Follow-up survey.** To ensure that the observed behavior was a result of procrastination and not some other factor, we sent participants a follow-up survey asking their reasons for using or not using the certificates. Of the 64 original participants, 33 responded to this survey. We asked those who redeemed the certificate if they enjoyed the experience, along with additional questions designed to measure the extent to which they may have procrastinated (e.g., "I tried using it as soon as possible," "It was hard to find time to use it," "I almost ran out of time to use it"). We asked participants who did not redeem the certificate to indicate how much they regretted not doing so, along with additional questions about their reasons for not using it. Participants assessed all measures on a seven-point scale. Those who used the certificates reported enjoying the experience ( $M = 5.5, SD = 1.51$ ), while those who did not redeem them reported regret for not doing so ( $M = 4.05, SD = 1.63$ ). Among those who did not use the certificates, the strongest agreement was with the statements "I was too busy and ran out of time" and "I kept thinking I could do it later" ( $M_{\text{too busy}} = 5.76, SD_{\text{too busy}} = 1.26; M_{\text{do it later}} = 5.0, SD_{\text{do it later}} = 1.64$ ), but there was low agreement with statements regarding forgetting, requiring too much effort, and disliking pastries ( $M_{\text{collapsed}} = 2.89, SD_{\text{collapsed}} = 2.02$ ). Thus, respondents in both groups appeared to procrastinate using the coupons because of their expectation of being able to do so later, but the group with the more constrained time window appeared to be most able to overcome that procrastination and actually complete the task. Together, the results of Experiments 3 and 4 offer evidence that though people given a longer time frame are more positive about and expect to be more likely to complete an enjoyable task, they are actually less likely to do so.

Although Experiment 4 successfully demonstrates that consumers faced with a real consumption choice are more likely to procrastinate with a longer time frame than with a shorter one, we still do not understand the roles of the relative size of costs and benefits on people's tendency to procrastinate. In addition to manipulating expiration dates, the final experiment manipulates the relative levels of costs and benefits and investigates how framing the gift card as hedonic (movie ticket) or utilitarian (cash value) influences behavior. Specifically, we are interested in observing how changes in costs and benefits affect the size of the procrasti-

Figure 5  
PREDICTED VERSUS ACTUAL REDEMPTION OF PASTRY GIFT CERTIFICATES



Notes: This figure shows the percentage of participants who either predict redemption or actually redeem pastry gift certificates from Experiment 4. Gift certificates had expiration dates of either three weeks or two months.

nation effect captured in Experiment 4, as measured by the difference in completion rates for short versus long time frames. In doing so, we expect to provide a more thorough test of  $H_{3a}$  and  $H_{3b}$ , which we derived from current theories of intertemporal behavior.

#### EXPERIMENT 5: A TRIP TO THE MOVIES

##### Method

We provided undergraduate students at a western university with gift cards that entitled them to free admission to the movies. We approached people sitting alone on campus and told them that we were running a promotion with AMC theaters. We did not provide details of the promotion until they agreed to participate in the study. After participants received the gift card, we asked them to provide e-mail addresses and telephone numbers for a follow-up survey.

As with Experiment 4, there were two expiration time windows: Recipients needed to use the coupon either within two weeks (short time frame) or within six weeks (long time frame). In addition, we manipulated costs and benefits relative to a baseline level, thus creating three sets of conditions. To manipulate relative benefit ( $H_{3a}$ ), we increased the size of the benefit from one free movie ticket per gift card (low benefit) to two movie tickets per gift card (high benefit). We manipulated relative cost ( $H_{3b}$ ) by distance to the theater. The low-cost gift card was for a movie theater approximately 10 minutes walking distance from campus, and the high-cost gift card was for a movie theater 20 minutes driving from campus. We created a final set of conditions by changing the framing of the benefit from experiential terms (seeing a movie) to financial terms (dollar value of a movie ticket). Specifically, the card read either "can be exchanged for a single movie ticket" or "\$10 toward the purchase of a single movie ticket." Each gift card further specified its expiration date, that the card could only be used at the box office at the specified theater, that it was nontransferable, and that it must be used in a single visit.

Thus, we had four separate pairs of conditions: a low-cost/low-benefit pair (which serves as a baseline), a low-cost/high-benefit pair (increased relative benefit), a high-cost/



low-benefit pair (increased relative cost), and a low-cost/low-benefit pair for which the benefit was reframed into financial terms (reframed benefit). Furthermore, each pair included a short versus long time frame manipulation. This design enables us to compare the difference in completion rates (redemption) for short versus long time frame between the baseline pair and the manipulated cost or benefit pairs.

To ensure that participants interpreted the costs and benefits consistent with our expectations, we ran a separate pretest on a similar population of 25 undergraduate students. Participants rated the attractiveness of each cost and benefit on a scale ranging from -4 (“extremely unattractive”) to +4 (“extremely attractive”). Indeed, participants perceived the farther movie theater as less attractive than the closer movie theater (-1.36 versus 1;  $t(24) = 4.26, p < .001$ ), and they perceived a gift card for two tickets as more attractive than a gift card for one ticket (4.64 versus 3.24;  $t(24) = 4.35, p < .001$ ).

The movie theaters provided us with actual redemption data. Finally, after the expiration dates passed, we contacted participants for a follow-up survey to gain additional insights into the factors that influenced their behavior and the extent to which they were happy with their decision to use or not use the gift card. We surveyed participants who did not reply to the e-mail by telephone.

*Results and Discussion*

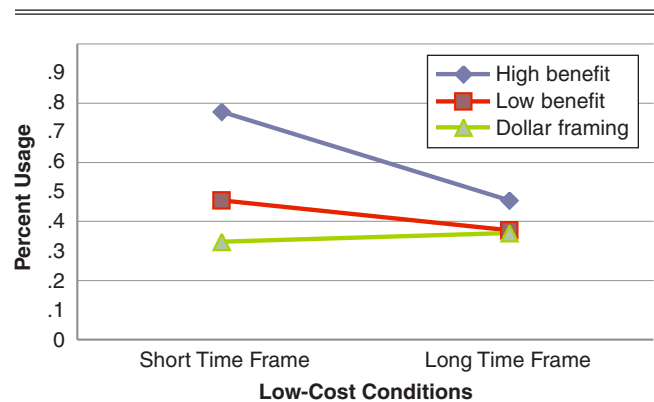
**Overall results.** We present participants’ redemption rates per condition in Table 2. We predicted that participants would display more procrastination (i.e., the difference in usage between the short time frame and the long time frame conditions would be larger) when relative benefits increase but would show little difference in procrastination when relative costs increase. This difference in response to increased benefits versus costs is due to lower discounting of the benefit (the movie) and higher discounting of the cost (the effort to visit the theater). For the conditions in which the benefit is framed in dollar terms rather than as an experience, we expected that the amount of procrastination would either remain unchanged or decrease because some research suggests that experiential outcomes (a high-level construal) are less discounted with temporal distance (Trope and Liberman 2003).

Consistent with  $H_2$  and with the findings of Experiment 4, we find lower redemption rates among participants with longer expiration dates, suggesting that participants procrastinated using their gift cards. Combining all conditions, 59 of the 120 (49%) participants in the short time frame group used their cards before expiration, compared with only 42 of the 120 (35%) participants in the long time frame group ( $\chi^2(1) = 4.94, p = .03$ ). Levels of procrastination within each

pair of conditions also tend to follow this pattern. For the base condition of the nearby theater (lower cost) and a single movie admission (lower benefit), 14 of 30 (47%) used the short time frame card compared with 11 of 30 (37%) for the long time frame card ( $\chi^2(1) = .62, p = .43$ ). For the distant movie theater (higher relative cost), 12 of 30 (40%) used the short time frame card compared with 6 of 30 (20%) for the long time frame card ( $\chi^2(1) = 2.86, p = .09$ ). When we kept cost constant (at the baseline level) but increased relative benefit by providing a double movie admission, both overall usage and the amount of procrastination increased: 23 of the 30 (77%) participants in this condition used the short time frame card compared with 14 of 30 (47%) for the long time frame card ( $\chi^2(1) = 5.71, p = .02$ ). Putting the usage data from all conditions into a single regression with separate indicators for increased relative benefit and increased relative cost reveals a negative main effect of longer time frame ( $z = -2.28, p = .02$ ), a positive main effect of higher benefit level ( $z = 2.20, p = .03$ ) but a nonsignificant effect of higher cost level ( $z = -1.34, p = .18$ ), and no effect of benefit framing ( $z = -.76, p = .45$ ).

**Increased benefit.**  $H_{3a}$  predicts that increasing future benefits relative to future costs will increase the difference in procrastination levels for an enjoyable activity as measured through a larger effect size for long versus short time frame behavior. We ran logistic regressions to test the differences in levels of usage between long and short time frames for each pair of conditions, and then we tested whether the size of the effect is different by comparing coefficients from these models. The results of the regression for the pair of conditions with higher relative benefits (Figure 6) show a significant effect of time frame ( $z = -2.34, p = .02$ ), while the results for the pair of low-benefit conditions are directionally consistent but not significant ( $z = -.78, p = .43$ ). More important for our hypothesis, a comparison of the coefficients from the two regressions indicates that the size of the effect is marginally larger for the increased relative benefit conditions than for the base benefit conditions

Figure 6  
REDEMPTION OF MOVIE GIFT CARDS WITH VARYING BENEFITS



Notes: This figure shows the percentage of participants who actually redeem movie gift cards from Experiment 5. Gift cards had expiration dates of either two weeks or six weeks and varied in benefit level (single movie admission or double movie admission) or benefit framing (experiential or financial). All conditions had the same cost level.

Table 2

REDEMPTION (PERCENTAGE) OF MOVIE GIFT CARDS PER CONDITION PAIR

	Baseline	Increased Benefit	Money Frame Benefit	Increased Cost
Short time frame	47%	77%	33%	40%
Long time frame	37%	47%	37%	20%

( $-1.32$  versus  $-.41$ ;  $\chi^2(1) = 2.60, p = .10$ ). This supports  $H_{3a}$  that a relative increase in future benefits leads to a larger effect of procrastination.

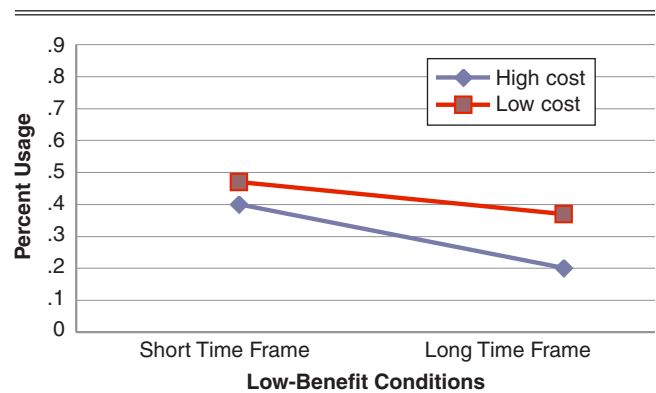
**Increased cost.**  $H_{3b}$  predicts that because future costs are heavily discounted, a relative increase in the future cost associated with the enjoyable activity has little or no effect on the difference in procrastination levels. Figure 7 graphs the usage levels for the conditions with fixed benefits but different levels of cost. A logistic regression shows that time frame is marginally significant for the pair of increased cost conditions, consistent with the results reported previously ( $z = -1.66, p = .09$ ). A comparison of the size of the coefficients for the two regressions indicates that the size of the effect is similar across the two pairs of conditions ( $-.41$  versus  $-.98$ ;  $\chi^2(1) = .94, p = .33$ ). Thus,  $H_{3b}$  is also supported; because of the heavy discounting of future costs, a relative increase in future costs does not significantly increase the procrastination effect exhibited by participants.

**Effect of benefit framing.** We did not have an explicit hypothesis for how the framing of the benefit would affect procrastination, though we expected that the experiential framing would show less discounting (and, thus, more procrastination) than the money framing based on construal levels (Trope and Liberman 2003). The data show that when the benefit is framed as a dollar value ("card worth \$10"), levels of usage for the short time frame (10 of 30) and long time frame (11 of 30) are not statistically different, suggesting little effect of procrastination. A regression reveals a nonsignificant effect of time frame ( $z = .27, p = .79$ ), and a comparison of the time frame coefficient with the baseline conditions shows no significant difference ( $-.41$  versus  $.15$ ;  $\chi^2(1) = 1.06, p = .30$ ).

**Follow-up survey.** As with Experiment 4, we ran a follow-up survey with the participants, using the same set of questions. Of the 240 original participants, 175 responded to this survey. Those who used the certificates reported enjoying the experience ( $M = 6.6, SD = .74$ ), while those who did not redeem them reported regret for not doing so ( $M = 4.28, SD = 1.78$ ). Among those who did not use the certificates, the strongest agreement was with the statements "I was too busy and ran out of time" and "I kept thinking I could do it later" ( $M_{\text{too busy}} = 5.92, SD_{\text{too busy}} = 1.51$ ;  $M_{\text{do it later}} = 4.62, SD_{\text{do it later}} = 1.9$ ), but there was low agreement with statements regarding forgetting and requiring too much effort ( $M_{\text{collapsed}} = 2.98, SD_{\text{collapsed}} = 1.89$ ). In addition, a comparison of respondents who used the gift card with those who did not use it does not yield any significant difference in their (dis)liking of movies ( $1.63$  versus  $1.69$ ;  $t(173) = .39$ , not significant). Thus, as with Experiment 4, respondents with both long and short time frames appear to procrastinate because of a belief that they can do it later, consistent with an underprediction of future slack.

The documented behavior of the participants in Experiments 4 and 5 provides evidence of consumers' tendency to procrastinate doing enjoyable experiences to the extent that the activity is never completed. People with both long and short time frames tend to procrastinate because of a miscalculation of future resource slack; only people with a shorter time frame appear to be able to overcome this procrastination and actually complete the experience. In our study, this procrastination effect became larger when future relative benefits for the activity increased, but it remained unchanged

Figure 7  
REDEMPTION OF MOVIE GIFT CARDS WITH VARYING COSTS



Notes: This figure shows the percentage of participants who actually redeem movie gift cards from Experiment 5. Gift cards had expiration dates of either two weeks or six weeks and varied in cost level (proximal or distant theater). All conditions had the same benefit level (single movie admission).

when future relative costs increased. In other words, when given longer windows for completion, people's tendency to fail to follow through on their usage intentions is magnified by increasing benefits but is not significantly affected by increasing costs. Although the tendency for procrastination to increase when benefits increase has been proposed in theoretical models of procrastination for aversive tasks (O'Donoghue and Rabin 199b), we are unaware of existing empirical evidence documenting this effect. The question arises whether this effect also holds for procrastination of other tasks; for example, do students procrastinate more for large assignments (term papers) than for small ones? The lack of calibration between predicted and actual behavior is also evident in our findings; participants evaluating longer time frame coupons tended to predict a higher likelihood of completion than those evaluating short time frame ones, but actual behavior showed the reverse effect. Recent research (Alexander, Lynch, and Wang 2008) has indicated that consumers may fail to follow through on predicted behavior when there is a large discrepancy in mental representations for the desirability of the action (the benefits) versus the feasibility of completing it (the costs). Such work is consistent with both our general findings and the specific finding that completion decreases as benefits increase, suggesting that studies of choice over time can benefit from measuring both prospective decisions and actual follow-through.

#### GENERAL DISCUSSION

The results we present here suggest that people's tendency to delay tasks is not limited to aversive activities but also applies to activities with immediate positive benefits. We propose that this procrastination occurs because people predict that they will have more time to engage in enjoyable activities in the future without realizing the future will be equally busy. The resultant repeated deferral lowers overall utility by causing people to miss out on what would otherwise be a positive experience. This behavior provides a noteworthy and insightful counterexample to the literature on impulsiveness and immediate gratification, in which people are unwilling to accept any delay for positive experi-

ences (Ainslie 1975; Loewenstein and Elster 1992; Mischel, Shoda, and Rodriguez 1989). Such myopic behavior, also called “present bias,” tends to occur most often for experiences with immediate positive benefits but no immediate costs. In contrast, we tested this behavior using experiences in which benefits and costs are experienced within close temporal proximity. Other examples of delayed behavior for positive experiences have been explored in research on reverse time inconsistency (Loewenstein 1987), hyperopia (Kivetz and Keinan 2006), and future bias (Shu 2008); however, it is important to note that these other contributions have relied on utility differences or mispredicted regret rather than on the misprediction of future time availability (resource slack), as we demonstrate here. Understanding both procrastination and delayed behavior for enjoyable activities provides us with a better understanding of the boundaries of self-control and time inconsistency.

By better understanding procrastination of positive experiences, we may also be able to offer prescriptive advice to both consumers and marketers. For example, our data show that the existence of limited time windows reduces procrastination. People who face an immediate deadline—whether it is to complete an enjoyable visit to a museum or to use a gift certificate for an enjoyable activity—are more likely to complete the task. This implies that consumers may be better off giving themselves short deadlines to complete such tasks. For example, people can raise their overall utility by actively declaring a “tourist week” in their own hometowns, a mind-set that encourages them to see local landmarks within a well-defined time frame. Consumers who receive gift certificates or coupons that they would enjoy using should give themselves a specific, immediate deadline to complete the activity. By enforcing strict deadlines, consumers may be able to actively find ways to harness such opportunities before they disappear.

This research also suggests that companies need to think carefully about using time limits with promotional offers. Similar to consumers, some companies believe that providing consumers with more time to respond to a promotional offer will result in higher redemption rates. In our studies, participants expressed greater satisfaction when they saw an offer with a longer date (Experiments 3 and 4); unfortunately, they were less likely to respond to the offer, leading ultimately to regret. This trade-off between stated satisfaction and actual use poses a dilemma for companies that want to encourage redemption. Consequently, companies may want to find other ways to encourage immediate use without restricting expiration dates, such as offering rewards or bonuses for being an early redeemer. Reminders shortly before expiration may also help increase usage. High redemption rates will be most likely when consumers have a sense of urgency; for example, Disney has implemented a successful campaign for increasing visits to its theme parks by offering reduced fees on birthdays, the ultimate one-day limited window. Other marketers of positive experiences, such as ice-cream parlors and bowling alleys, would do well to follow Disney’s example. As with the French pastry shops and movie theaters in our experiments, companies are likely to benefit from giving consumers shorter windows within which to enjoy their services.

In some cases, however, companies may not be interested in high redemption rates. A report by TowerGroup estimated

the value of unused gift cards in the United States at \$8 billion for 2006. In its fiscal 2006 annual report, Best Buy revealed a \$43 million gain from gift cards that were unlikely to be used. Currently, public policy efforts are underway to extend expiration dates on gift cards (e.g., *ConsumerReports* 2007); these efforts have been driven by consumers’ claims that they did not redeem gift cards because they expired before they had a chance to use them. Ironically, such efforts to extend expiration dates may be good for the company in terms of higher satisfaction with the cards and lower redemption rates but may ultimately leave the procrastinating consumers with even more unused offers still sitting in their wallets. Such advice is also consistent with Lynch and Zauberman’s (2006) claims that long time frame rebates are actually more deceptive to consumers than short time frame ones because of the low risk of redemption due to procrastination. Our research suggests that shorter expiration dates, rather than longer ones, are more successful at encouraging people to indulge and enjoy the positive experiences they otherwise might neglect to appreciate.

#### APPENDIX: CITIES AND LANDMARKS USED IN FIELD SURVEY

##### Chicago

- The Field Museum of Natural History, Sears (Willis) Tower, Lincoln Park Zoo, Millennium Park, an architectural river boat tour, Art Institute of Chicago, Shedd Aquarium

##### New York City

- Empire State Building, Statue of Liberty, Rockefeller Center, United Nations, Times Square, Broadway shows, Metropolitan Museum of Art

##### Dallas

- Forth Worth Stockyards National Historic District, Dallas Museum of Art, Dallas World Aquarium, Frontiers of Flight Museum, Nasher Sculpture Center, Sixth Floor Museum at Dealey Plaza, Dallas Arboretum

##### San Francisco

- Fisherman’s Wharf, Presidio, Golden Gate Bridge, Alcatraz Island, Cable Car (trolley) Ride, Muir Woods (redwood forest), Exploratorium

##### Los Angeles

- La Brea Tar Pits, Rodeo Drive, Universal Studios, Getty Museum, Ripley’s Believe It or Not, Griffith Observatory, Hollywood Walk of Fame

##### Paris

- Eiffel Tower, Louvre Museum, Notre Dame, Arc de Triomphe, Bateaux Mouches (river boat tour), Museum d’Orsay, Sacre-Coeur de Montmartre

##### London

- Tower of London/Crown Jewels, Madame Tussauds Wax Museum, Big Ben, Kensington Palace, London Eye observation wheel, Windsor Castle, Tower Bridge

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