ESSAYS ON MENTAL BUDGETING AND CONSUMER SPENDING BEHAVIOR

A Dissertation

by

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ABSTRACT

Budgeting allows consumers to create a plan on how to spend their money, and making a budget is often considered the first step to achieving financial wellness. Existing research on budgeting suggests that setting a budget in advance of a purchase occasion can help consumers control their spending and increase their savings. Is setting a budget in advance always effective? Does budgeting always encourage consumers to minimize spending? This dissertation expands the scope of the mental budgeting literature by identifying novel factors that impact the role of budgeting on consumer spending decisions. Essay 1 focuses on how the amount of temporal separation consumers experience between budget setting and actual purchase influences their spending decisions. Using a secondary dataset of real estate transactions, a field study, and lab experiments, this essay finds that budgeting too far in advance can lead consumers to become more likely to overspend relative to their budget. The effect is driven, at least in part, because consumers feel lower pain of payment associated with spending the budgeted money as more time passes. Essay 2 focuses on the divergent effects of budgeting on spending decisions when the budget is for a personal-purchase as compared to a gift-purchase. Using qualitative responses, lab experiments, and a field study, this essay finds evidence that consumers aim to spend below their budgets for personal-purchases, but aim to spend the entirety of their budgets for gift-purchases. It suggests that the effect holds because savings goals are less salient when making a gift-purchase than when making a personal-purchase. Together, the dissertation essays offer unique and practical insights into the topic of budgeting on consumers' spending decisions.

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Contributors

This work was supervised by a dissertation committee consisting of Professor Christina Kan, Haipeng (Allan) Chen, and Chiraag Mittal of the Department of Marketing, and Professor Brandon Schmeichel of the Department of Psychology. The data collection and analyses for Essay 1 were done by student under the supervision of Professor Christina Kan, and was published in April 2021. For Essay 2, Professor Evan Polman at the Department of Marketing at the University of Wisconsin-Madison, collected the field experiment data, and the data was analyzed by the student under the supervision of Professor Evan Polman and Professor Christina Kan. All other work conducted for the dissertation was completed by the student under the supervision of Professor Christina Kan.

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1. INTRODUCTION

Mental budgeting is defined as the process of categorizing expenses into "accounts" (Thaler 1985), and budgeting has been suggested as a helpful strategy to achieve financial wellness. Existing literature on mental budgeting also suggests that budgeting in advance of a purchase encourages consumers to control their consumption and prevent unplanned purchases (Krishnamurthy and Prokopec 2010; Stilley, Inman, and Wakefield 2010). Hence, budgeting typically serves as a self-control device to curb spending and to increase savings (Heath and Soll 1996; Soman and Cheema 2011). This dissertation includes two essays that explore the role of mental budgeting on consumers' spending decisions and the factors that impact the budgeting efficacy.

Essay 1 raises the question of whether setting a budget in advance is always effective, and examines the impact of the amount of temporal separation consumers experience in budgeting on their subsequent spending. As mental budgets are set in advance of purchase occasions, consumers typically experience some amount of temporal separation between budget setting and actual purchase. Essay 1 suggests that when the budget for a purchase is set far in advance, consumers are more willing to overspend their budgets. The effect emerges partly because consumers begin to adapt to their decision to spend the budgeted money. As this adaptation increases over time, the pain associated with the decision lessens, in turn increasing the likelihood to overspend when the actual purchase occurs. Essay 1 finds evidence for the effect using a secondary dataset of real estate purchases, a field study, and lab experiments, and contributes to the mental budgeting literature by identifying the role of temporal separation on budgeting efficacy.

Essay 2 questions whether setting a budget always encourages consumers to minimize spending, and examines the divergent perceptions consumers have toward mental budgets set for gift-purchases as compared to personal-purchases. Existing research on budgeting suggests that consumers willingly set budgets to manage and minimize their spending (Peetz and Buehler 2009). Essay 2 suggests that when budgets are set for gift-purchases, consumers have a tendency to prefer to maximize their spending within a given budget. The effect holds because the goal of saving money is less salient when making a gift-purchase than when making a personal-purchase. Essay 2 finds evidence for the effect using qualitative responses, lab experiments, and a field study. It contributes to the literature by drawing a novel connection between budgeting and gift-giving.

Together, this dissertation extends the existing literature on mental budgeting by examining the impact of a temporal factor (i.e., temporal separation) and a contextual factor (i.e., budgeting for gifts) related to budgeting on spending decisions. Each essay will discuss its own theoretical contribution, implications, as well as limitations and directions for future research in depth.

2. ESSAY 1: BUDGET DEPRECIATION: WHEN BUDGETING EARLY INCREASES SPENDING[*]

Abstract

While budgeting in advance is seen as a good practice to control spending, this research shows that budgeting too early for a specific purchase may increase spending. We argue that as the temporal separation between budget setting and actual purchase increases, consumers become more willing to overspend because of what we term "budget depreciation." Consumers adapt to the reference point set by the budget such that, over time, the budgeted level becomes the status-quo spending. Thus, as more time passes, pain-of-payment from the budgeted amount decreases, and the willingness-to-spend increases. Across a secondary dataset of real estate purchases, one field study, and three experiments, we find evidence that consumers who set a budget in the distant (versus near) past are more likely to overspend relative to their budget. The effect emerges for single purchase occasions rather than a category of purchases over multiple occasions. It emerges because of the hypothesized pain-of-payment process (e.g., effect is stronger among tightwads, who feel greater pain from spending; effect is mitigated under budget reassessment, which prevents pain adaptation). Our work contributes to the mental budgeting literature by invoking a role for temporal separation, and draws a novel connection to prior work on payment depreciation.

Keywords: mental budgets, budgeting, temporal separation, overspending, pain of payment

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2.1. Introduction

Budgeting is often considered a useful tool to control spending. Many financial counselling institutions and financial literacy programs suggest that the first step to financial wellness is to set up a budget (Nagle 2019). Banks and other personal finance platforms provide services for effective budgeting (e.g., Lockert 2019), and in response, the number of consumers adopting budgeting and financial planning apps has more than tripled in the last five years (EY Global Fintech Adoption Index 2019). When budgeting for a specific upcoming purchase (e.g., purchasing a house), consumers typically do so in advance, and one might assume that budgeting further in advance helps people reduce their spending. This research explores when and why budgeting early might have the opposite effect, and instead lead to higher spending.

We examine how the amount of temporal separation that occurs between the moment that a budget is set and the moment that a purchase is made affects consumer decisions regarding how much money to spend relative to that budget. Although competing predictions can be made, our results suggest that budgeting too early tends to increase consumers' spending relative to their budgets, and may result in overspending. We propose that this overspending behavior arises in part because consumers feel less pain when spending money for which they have budgeted in the distant past compared to money for which they have budgeted in the near past. Budgeting for a purchase involves deciding to spend money, and this decision to spend money on a purchase can produce a hedonic cost, or pain, for the consumer. As time passes after a decision has been made to spend money, consumers begin to adapt to that decision, and the pain associated with spending that money begins to dissipate. We refer to this process of adaptation as "budget depreciation." As a result of this process, those who budget for their purchases in the distant past may be more willing to overspend than those who budget for their purchases in the near past.

This research contributes to several streams of literature. Our findings add to the mental budgeting literature by identifying temporal separation as a factor that influences the success of budgeting in limiting spending behavior, and by elucidating the direction of the effect. Research on mental budgeting has explored factors that impact efficacy in budgeting, such as the malleability of mental accounts (Cheema and Soman 2008) and visual reminders of the budget goal (Soman and Cheema 2011). While a limited literature has begun to study the role of time in the budgeting context (e.g., Ülkümen, Thomas, and Morwitz 2008), the effect of temporal separation has not yet been explored. Prior research offers conflicting hypotheses on whether greater temporal separation will increase or decrease spending, yet no work has directly tested these predictions. We extend previous work in budgeting that examined possible pitfalls of budgeting (e.g., Cheema and Soman 2006; Kan, Fernbach, and Lynch 2018; Larson and Hamilton 2012) by showing how greater temporal separation in budgeting may backfire. In addition, prior studies in budgeting have primarily examined budgeting for categories of expenses that occur over a duration of time (e.g., dining expenses that occur over the next month; Ülkümen et al. 2008), but the current research focuses on budgeting for a single expense to occur at the end of a duration of time (e.g., a single dinner that occurs at the end of the next month). Further, much of the research on budgeting observes how consumers' budget adherence is affected by changes in budgeted spending (e.g., Peetz and Buehler 2009; Ülkümen et al. 2008), but we explore how budget adherence is affected by changes in actual spending.

Second, our research contributes to the literature on pain of payment. While prior research has shown that the pain associated with making a purchase can dissipate as time passes after the purchase point (Gourville and Soman 1998), we contribute the notion that the pain associated with an earmarked-but-still-upcoming purchase can also dissipate with time. This

adds to an emerging literature proposing that budgeting for purchases can evoke many of the same responses as actual purchases (Webb and Spiller 2014), implying that simply making the decision to spend can also evoke hedonic costs. We draw a novel connection to this prior work on payment depreciation, showing that a similar depreciation can occur with budgeting as well. In the next section, we review literature on budgeting in general, and then discuss the role of time in budgeting more specifically. We discuss how different lines of research can lead to competing predictions regarding the effect of temporal separation, before focusing on the pattern of effects that we empirically observe and a process that may underlie these effects.

2.2. Theoretical Background

Budgeting

Mental budgeting is the act of coding and categorizing resource inflows and outflows into "accounts" (Thaler 1985). Through this cognitive form of bookkeeping, consumers set different mental accounts, earmark accounts and funds for specific purposes and then track their expenses against their budgets (Heath and Soll 1996).

Funds can be earmarked for categories of multiple purchases (e.g., a $100 budget for dining expenses this week) or for single purchases (e.g., a $100 budget for a single dinner). Much of the prior research in budgeting focuses on budgeting for categories of spending, such as budgeting for weekly expenses (Peetz and Buehler 2009; Ülkümen et al. 2008), travel expenses (Fernbach, Kan, and Lynch 2015), or food and entertainment expenses (Cheema and Soman 2006). In this research, we focus on budgets set for single purchases, and in line with Larson and Hamilton (2012), we use the term budgeting to refer to earmarking money for these purchases.

Consumers often budget with the aim of controlling their spending and saving money. A significant body of literature has explored the factors that can impact whether budgets are effective at achieving this goal (see Zhang and Sussman 2018 for a review). Budgets are often more effective when they are not too malleable (Cheema and Soman 2006), but also when not too inflexible (Heath and Soll 1996). Sometimes budgets can help people save money (Soman and Cheema 2011) and prioritize their spending (Fernbach et al. 2015), and sometimes earmarking can be unhelpful (Larson and Hamilton 2012; Sussman and O'Brien 2016).

The role of time in budgeting has been explored in various contexts, including the effect of sequence and the effect of temporal frames. Sheehan and Van Ittersum (2018) find that the sequence of purchases during a grocery store trip differs for those who do versus do not budget for their grocery shopping. Carlson et al. (2015) show that when budget size changes in a descending (versus ascending) sequence, people tend to prefer less variety.

The effect of different temporal frames in budgeting, such as a weekly versus monthly budget, has also been explored. Longer time frames lead to higher and more accurate budget estimates (Ülkümen et al. 2008), and default units of time also lead to higher budget estimates (e.g., setting a weekly budget when one is accustomed to setting a monthly budget; Min and Ülkümen 2014). People underestimate their spending when budgeting for a general time frame, such as the next week, more than they do when budgeting for a specific event (Peetz and Buehler 2013). The temporal frame can also impact choices; bracketing one's budget more broadly increases willingness to spend (Read, Loewenstein, and Rabin 1999), and longer time windows for future consumption increase preference for vice products over virtuous products (Siddiqui, May, and Monga 2017).

Because mental budgets are set in advance of purchase occasions (Heath and Soll 1996), there is typically some amount of temporal separation between the moment that one sets a budget, and the moment that one makes a purchase. This temporal separation can vary greatly, such as when one budgets for a purchase occurring next week, next month, or even next year. However, the role of temporal separation in budgeting has yet to be explored.

The Effect of Temporal Separation on Budget Adherence

There are several possibilities for how the effect of temporal separation might impact downstream budget adherence. As a starting point, one might predict that budget adherence does not change as a function of temporal separation between setting a budget and making a purchase. However, extant research offers evidence suggesting otherwise. For example, prior research in budget estimation finds that consumers experience greater difficulty with forecasting expenses that occur over longer time frames (such as the next month) than shorter time frames (such as the next week; Ülkümen et al., 2008). As a consequence, consumers tend to give higher budget estimates when budgeting further in advance, suggesting that greater temporal separation might result in lower spending relative to their budget.

One important distinction to note is that Ülkümen et al. (2008) focus on budget setting for categories of expenses over a duration of time (e.g., all dining expenses that occur over the next week versus the next month), whereas the present research focuses on budget setting for a single expense that will take place at the end of the budget period (e.g., a single dining expense that will occur at the end of the next week versus the next month). When budgeting for dining expenses as a category over a duration of time, consumers need to estimate both how many dining occasions there will be and how much to spend at each occasion. Given that there are more dining

occasions over the next month than the next week, consumers experience greater difficulty in estimating a budget for the next month than the next week, and adjust their budget estimates upwards accordingly. When budgeting for a single dining occasion, however, consumers need only consider how much to spend for that single occasion, regardless of whether it occurs next week or next month. This suggests that the difficulty of budget estimation may be similar for single item budgets, irrespective of how far in advance it occurs. We explored this distinction in a pilot study (details of this study are in appendix A1). Half of the participants submitted budget estimates for dining expenses as a category, budgeting for multiple dining expenses that would occur during the next week or the next two months. The other half of the participants submitted budget estimates for a single dining expense that would occur at the end of the next week or the next two months. Afterwards, all participants rated how difficult it was to estimate the budget. Replicating Ülkümen et al. (2008), we observed that budgeting for multiple purchases over a longer duration of time is more difficult ($M_{\text{one-week}} = 3.27$, $M_{\text{two-months}} = 3.88$; $F(1,297) = 5.75$, $p = .017$, partial $\eta^2 = .019$), and elicits higher budget estimates on a time adjusted basis ($M_{\text{one-week}} =$ \$61.69, $M_{\text{two-months}} =$ \$217.17; $F(1,297) = 18.52$, $p < .001$, partial $\eta^2 = .059$), than budgeting for a shorter duration of time. However, budgeting for a single purchase to occur at the end of a longer time period is just as difficult ($M_{\text{one-week}} = 2.93$, $M_{\text{two-months}} = 2.89$; $F(1,297) = .03$, $p = .861$, partial $\eta^2 < .001$), and elicits similar budget estimates ($M_{\text{one-week}} =$ \$72.61, $M_{\text{two-months}} =$ \$118.82; $F(1,297) = 1.58$, $p = .210$, partial $\eta^2 = .005$), as budgeting for a single purchase to occur at the end of a shorter time period. This suggests that a unique pattern of spending may arise when budgeting in advance for a single item versus a category of items.

Another possible pattern of results, and the one that we observe empirically, is that greater temporal separation increases the likelihood for people to spend more relative to their

budget. This phenomenon is likely to be multiply determined, though the current research focuses primarily on pain of payment and budget depreciation, a process that we believe applies best to the current context. In the next section, we review literature on pain of payment and derive our hypotheses.

Pain of Payment

When consumers make purchases, they may experience a pain of payment, which can be defined as a "psychological burden of payment" (Prelec and Loewenstein 1998) or a "hedonic cost" (Gourville and Soman 1998). Increasing the pain of payment can reduce people's willingness to make a purchase, such as when they have fewer cognitively accessible resources (Morewedge, Holtzman, and Epley 2007), or when using a more painful form of payment (Prelec and Simester 2001; Soman 2001).

The amount of pain that people feel when thinking about a purchase can dissipate over time. Gourville and Soman (1998, page 163) suggest that when a consumer first makes a purchase, for $40 in this example, "she opens a mental account specific to this transaction and records into that account the full perceived value of the payment…However, as the temporal delay between the $40 payment and the pending consumption increases, this person adapts to the payment and gradually incorporates it into her status quo. As such, the potential hedonic impact of that payment decreases." This effect is termed "payment depreciation" and is found to have significant impact on sunk-cost effects; consumers are more likely to forgo the benefits associated with a purchase if the payment occurred further in the distant past.

Analogously, one may predict that consumers experience similar feelings of pain when setting a budget and making the *decision to spend money.* Prelec and Loewenstein (1998, pages

19-20) suggest that while mental budgets "have traditionally been interpreted as a self-control device…they may, however, also play the complementary role of facilitating mental prepayment." Consistent with this suggestion, Webb and Spiller (2014) find that simply earmarking money can lead to similar consequences as actually spending money, proposing that earmarking increases the feeling of financial constraint. The heightened perception of financial constraint can lead to the consideration of opportunity costs (Spiller 2011) and increased pain of paying (Pomerance, Reinholtz, and Shah 2018).

Connecting these lines of research, we propose that consumers may experience "budget depreciation" much in the same way that they experience "payment depreciation." That is, people can adapt over time to the hedonic impact associated with an upcoming payment, similar to how they can adapt over time to the pain of a payment that has already been made. After consumers set a budget for a specific purchase, the budgeted cost becomes a reference point. As time passes, they gradually incorporate that reference point into their status quo, and adapt to the idea of spending that amount of money. This reduces the pain associated with spending the budgeted amount of money. When the moment of purchase finally arrives, consumers experience less pain of payment and thus become more willing to overspend. More formally, we hypothesize:

H1: As the temporal separation between budget setting and actual purchase increases, people become more willing to overspend their budgets.

H2: The change in overspending results from increases in actual spending, as opposed to decreases in budgeted spending.

H3: The change in overspending occurs through decreased pain of payment.

2.3. Overview of Studies

We explore our hypotheses over a series of six studies. Study 1 investigates hypothesis 1 and hypothesis 2 in the context of real estate purchases, finding that higher temporal separation between the moment of budget setting and purchase is correlated with higher spending relative to the budget. Study 2 explores the causal effect of temporal separation in a field study, investigating whether university students who are randomly assigned to budget earlier for their class ring purchases spend more than those who are randomly assigned to budget later.

Our next set of studies sought to explore the underlying process (hypothesis 3). If it is true that temporal separation between budget setting and purchase can increase people's spending relative to their budgets by reducing the pain associated with the purchase, then the effect should be stronger under conditions in which people naturally feel a high level of pain of payment, and weaker under conditions in which people naturally feel a low level of pain of payment. To test this, we employ three operationalizations of natural differences in high versus low pain of payment: individual differences (study 3), product-based differences (study 3b) and cost-based differences (study 4). The budget depreciation process also implies that adaptation to the budgeted amount of money is a necessary condition. In study 5, we explore whether inhibiting the ability to adapt to the budgeted cost mitigates the effect. These studies collectively help to provide evidence consistent with the proposed process and address alternative explanations, although we recognize that the effect is likely to be multiply determined.

2.4. Study 1: Increased Temporal Separation is Associated with Overspending for Real Estate Purchases

The purpose of study 1 was to explore the effect of temporal separation on budget adherence in a real-world context. Buying a house is one of the largest purchases that consumers will ever make in their lives (Thakor 2010), and most consumers will need to set a budget for an expense of this size. Given the significance of home ownership to consumer financial well-being, we selected this domain to begin our examination of the relationship between temporal separation in budgeting and consumers' willingness to overspend. We collected transaction data from a real estate firm. We predicted that real estate buyers will be increasingly likely to spend more than their original budget as they experience greater temporal separation between the time they set a budget for their real estate purchase and the time they make the purchase decision.

Data

Real estate transaction data was collected from the client management software and transaction journals of a local real estate office for the period from January 2018 to September 2019. We collected the following pieces of information for 103 transactions: 1) temporal separation between budget setting and purchase, 2) budgeted spending range, 3) actual spending amount, 4) age of the buyer, and 5) gender (see table 1 for descriptive statistics).

Table 1. Descriptive Statistics (Study 1)

Variable	Min value	Max value	Mean	SD
Temporal Separation (Days)	1	236	43.49	46.80
Minimum of budget range	$40,000.00	$600,000.00	$276,407.77	114,061.43
Mean of budget range	$40,000.00	$650,000.00	$300,509.71	122,598.18
Maximum of budget range	$40,000.00	$800,000.00	$324,611.65	133,055.51
Actual Spending	$44,500.00	$605,000.00	$299,159.09	119,426.98
Overspending 1 (Actual - Min budget)	-$50,000.00	$125,000.00	$22,750.30	21,930.56
Overspending 2 (Actual - Mid budget)	-$135,000.00	$75,000.00	-$1,351.64	22,836.50
Overspending 3 (Actual - Max budget)	-$285,000.00	$50,000.00	-$25,453.58	34,859.90
Age	20	80	43.69	13.21

Note – one person in our sample listed $40,000 as their minimum, middle, and maximum budget amounts, so the minimum values of the three amounts are the same. Age was recorded to the nearest decade, and was based on the age of the main contact person if the buyer was a couple.

We did not have access to data on offers that were made prior to purchase, nor were we given data regarding clients who did not make a purchase.

Analysis

The budget depreciation process implies that temporal separation increases overspending, and that this occurs via higher actual spending rather than lower budgeted spending. We ran the following regression model for transaction *i,* using a log-log transformation for spending and temporal separation to account for the positively skewed distribution.

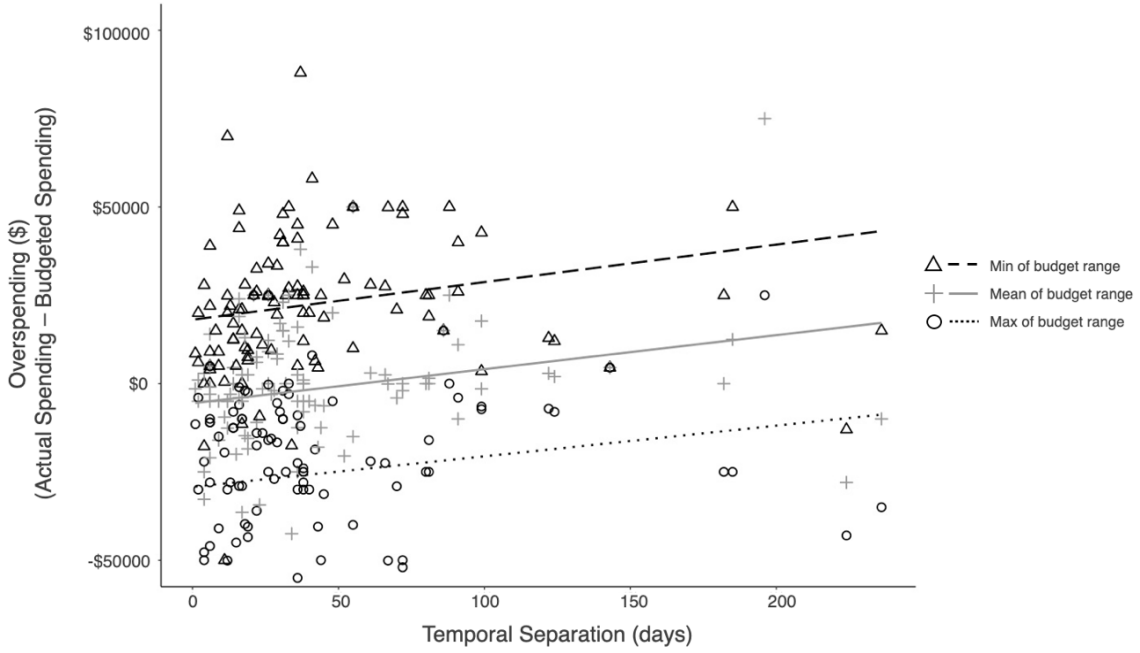
$$\mathrm{Ln}(Spending_i) = \beta_0 + \beta_1 \mathrm{Ln}(Temporal\ Separation_i) + \beta_2 Age_i + \beta_3 Female_i + \beta_4 Male_i + \varepsilon_i$$

The dependent variable, $Spending_i$, was either overspending, actual spending, or budgeted spending. Overspending was calculated by taking the difference between ln(actual spending) and ln(budgeted spending). Because budgets were provided in a range, we used three different measures of budgeted spending (minimum, mean, and maximum). *Temporal Separation*$_i$ was calculated by counting the number of days between the date when buyers first contacted the real-estate office to provide their budget range and the date of their purchase decision. We also included controls for *age*$_i$ (to the nearest decade) and gender (dummy variables for three categories: *Female*$_i$ = single female, *Male*$_i$ = single male, omitted category is both genders/couples). Even excluding the control variables; results are directionally consistent.

Results

Overspending. Controlling for age and gender, we observe that as temporal separation increases by 1%, the amount of actual spending relative to budgeted spending increases by .016% if using the minimum of the budget range ($t(98) = 1.97$, $p = .052$), by .018% if using the mean of the budget range ($t(98) = 2.33$, $p = .022$), and by .019% if using the maximum of the budget range ($t(98) = 2.00$, $p = .048$). Figure 1 depicts a scatterplot of overspending in dollars and table 2 provides estimation results.

Figure 1. Overspending Increases with Temporal Separation in Budgeting (Study 1)



Note – Using real estate transactions, we observe that as temporal separation between the moment of budgeting and purchase increases, the willingness to spend relative to the budget also increases. Although data were analyzed using log-log transformations, they are plotted here in untransformed dollars and days for ease of interpretation.

Budgeted Spending. Controlling for age and gender, we find that temporal separation does not significantly predict budgeted spending, regardless of whether we use the minimum, mean or maximum of the budget range ($ps > .12$, see table 2). This suggests that the relationship between temporal separation and overspending is not driven by lower budget estimates.

Actual Spending. Controlling for age and gender, we observe that as temporal separation increases by 1%, the amount of actual spending increases by .085% ($t(98) = 1.97$, $p = .052$; see table 2). These results suggest that the relationship between temporal separation and overspending may be driven by higher actual spending.

Table 2. The Effect of Temporal Separation on Overspending, Budgeted Spending, and Actual Spending (Study 1)

	Overspending (Actual - Budgeted)			Budgeted Spending			Actual Spending
Budget Range	Min	Mean	Max	Min	Mean	Max	
Temporal Separation	.016*	.018**	.019**	.068	.067	.066	.085*
Age	.000	-.001	-.001	.003	.003	.004	.003
Female	.015	.018	.020	-.132	-.136	-.138	-.118
Male	-.017	-.012	-.009	-.717***	-.722***	-.725***	-.734*
Intercept	.035	-.026	-.083*	12.189***	12.250***	12.306***	12.224***

Note – Table 2 provides estimation results for the effect of temporal separation. * $p < .10$, ** $p < .05$, *** $p < .01$.

Discussion

Using a secondary dataset of real estate purchases, we observe that as temporal separation between budget setting and purchase date increases, people increasingly spend more money relative to their budgets. Further, we find that more temporal separation is associated with higher actual spending, but not lower budgeted spending, which is consistent with the budget depreciation process.

There are several limitations to this dataset. Firstly, the correlational nature of this data does not allow for causal conclusions. It may be that people who are very interested in real estate are both more likely to take more time before making a purchase decision, and to overspend their budget once they make a decision. To test for causal effects of temporal separation on increased spending, our next study is a field experiment in which we randomly assigned people to experience longer or shorter amounts of temporal separation. Secondly, this study does not

provide conclusive evidence for the budget depreciation process. It may be that temporal separation causes higher spending because the need to close a deal becomes more urgent as time passes, and this urgency increases willingness to pay. We explore evidence for the budget depreciation process in studies 3 to 5.

2.5. Study 2: Temporal Separation Increases Overspending for a Class Ring

The purpose of study 2 was to explore the causal effect of temporal separation on budget adherence in a field study using random assignment. We investigate a realistic and relatable context for the student population participating in our study: budgeting for their class ring. We contacted undergraduate students, and randomly assigned them to budget for their ring either ten weeks in advance of their purchase, or three weeks in advance of their purchase. Afterwards, we observe how much money they spent on their ring purchase.

The class ring field setting was beneficial for several reasons. Firstly, at the university where this study was conducted, over 90% of the undergraduate students purchase a class ring, suggesting that this would be a relevant expense for many students. Secondly, the rings are a sizeable expense, suggesting that budgeting for a class ring would be a relevant activity for many students. The rings designed for female students ranged from $512 to $859, while male rings ranged from $1013 to $1892. Because the male rings were twice as expensive as the female rings, we report separate analyses by gender.

Design and Procedure

Participants. Study 2 was conducted during the period between November 2018 and February 2019. As students typically order their rings during their junior year, we sent out a bulk

email to junior class students (N = 10,438) at a US university. This study was a three-phase field experiment. All participants were contacted in phase 1 and phase 2, and were randomly assigned to set a budget for their ring in phase 1 (from Nov. 5th to 10th, 2018) or phase 2 (from Dec. 17th to 21st, 2018) depending on the temporal separation manipulation. We matched the expense records of our survey participants in phase 3 after the ring order window had closed (Feb. 13th, 2019).

Phase 1 Procedure. Among those who received the email, 1742 participants completed phase 1 (16.7% response rate). In phase 1, participants first provided demographic information, including age and gender. All participants were then asked to report ring-specific details including whether they 1) already owned the ring at the time of taking the survey, 2) were interested in buying the ring, and 3) were eligible to buy the ring during the indicated ring order window. Students who already owned a ring, or were not interested in buying a ring, or were not eligible to purchase a ring during the upcoming order window were removed from our study (N = 648), leaving 1094 participants in our study.

These participants were then randomly assigned to either set a budget ten weeks prior to purchase (i.e., distant past condition) or three weeks prior to purchase (i.e., near past condition). Those in the three-week condition were reminded to participate in phase 2 and then dismissed.

Those in the ten-week condition were asked to set a budget for their ring purchase. Participants were shown a set of ring options, including two gold options and four diamond options. After selecting their options, they set a budget for their ring purchase by entering the cost of the gold and diamond options into a text box that automatically calculated the total cost back for the participants. They were reminded to participate in phase 2 and then dismissed.

At the university where this study was conducted, the rings designed for female and male students differ in size and price. Students were shown the actual options and prices for their

gender. Female rings ranged from $512 to $859, while male rings ranged from $1013 to $1892 (See appendix A2 for stimuli for the female students).

Phase 2 Procedure. Seven hundred and eight participants returned for the second phase of the study (64.7% response rate). A binary logistic regression predicting dropout by a 1df treatment effect showed no differential dropout between conditions (Wald $\chi^2(1) = .51$, $p = .48$).

Participants in the three-week condition were asked to set a budget to purchase their ring using the same budgeting task that those in the ten-week condition did during phase 1. Participants in the ten-week condition provided demographic information and were reminded of how much they had budgeted in phase 1. This reminder was provided to minimize the possible alternative explanation that participants in the ten-week condition simply forgot how much they had budgeted and thus spent more relative to their budgets.

Phase 3 Procedure. During the designated ring order window (Jan. 7th to Feb. 13th, 2019), 461 participants chose and paid for their class rings (81.1% female, $M_{age} = 20.49$). They also had options to join an alumni charity club for $25 and to choose shipping for $20. We obtained individual payment data from the university organization where students placed their ring orders. The number of participants who paid for a class ring did not differ significantly between conditions (Wald $\chi^2(1) = .98$, $p = .32$).

Results

During the period between budget setting and the time when students placed their ring order, the price of the gold options increased. For female rings, prices increased from $512 to $522 for the 10k option and from $617 to $630 for the 14k option. For male rings, prices increased from $1013 to $1037 for the 10k option and from $1373 to $1405 for the 14k option.

We added the increased price into the budget amount in our analyses to reflect this change. For example, if a participant reported budgeting $1013 for the gold option, we replaced that number with $1037 to reflect the new increased pricing in our analyses. Because of the large difference in price ranges for the female and male rings, we ran separate analyses by gender (see table 3 for descriptive statistics).

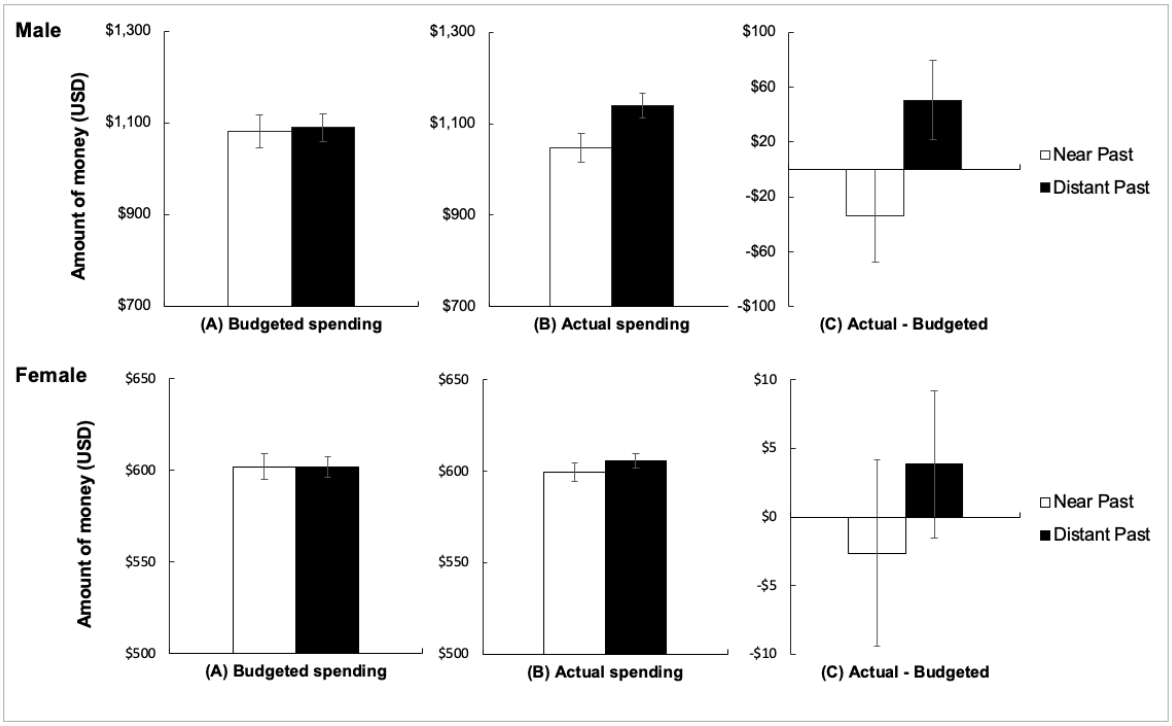
Table 3. Descriptive Statistics (Study 2)

	Male Participants			Female Participants		
Temporal Separation	Near past (3 weeks)	Distant past (10 weeks)	Non-budgeters	Near past (3 weeks)	Distant past (10 weeks)	Non-budgeters
Actual spending	1046.98[a] (212.69)	1187.33[b] (271.20)	1094.22[a] (240.52)	559.40[c] (63.10)	614.02[d] (78.05)	605.05[c,d] (89.14)
Budgeted spending	1080.78[e] (124.25)	1127.31[e] (187.98)	-	602.04[f] (72.21)	609.67[f] (72.35)	-
Overspending (Actual – Budgeted)	-33.80[g] (204.77)	60.03[h] (238.15)	-	-2.64[i] (61.28)	4.35[i] (50.32)	-
N	51	36	2967	171	203	3326

Note – Standard deviation in parentheses. Means followed by a common letter are not significantly different at $p < .05$.

Overspending. We calculated overspending as the amount spent in phase 3 minus the amount budgeted in phase 1 or 2. Male participants who experienced the ten-week (i.e., distant past) temporal separation were more willing to overspend ($M_{\text{ten-weeks}}$ = $60.03, SD = 238.15) than those who experienced the three-week (i.e., near past) temporal separation ($M_{\text{three-weeks}}$ = -$33.80, SD = 204.77; $F(1,85) = 3.87$, $p = .052$, partial $\eta^2 = .044$). Female participants in the distant past condition were directionally more willing to overspend than those in the near past condition, but the difference was not statistically significant ($M_{\text{ten-weeks}}$ = $4.35, SD = 50.32 vs. $M_{\text{three-weeks}}$ = -$2.64, SD = 61.28; $F(1,372) = 1.47$, $p = .226$, partial $\eta^2 < .001$, see figure 2).

Figure 2. Budgeted Spending, Actual Spending, and their Differences by Temporal Separation (Study 2)



Note – Compared to people who were randomly assigned to experience a three-week separation (i.e., near past) between budgeting and purchasing, people who experience a ten-week separation (i.e., distant past) budgeted for a similar amount of money (panel A) but spent more money (panel B). Consequently, those in the distant past condition spent more relative to their budget than those in the near past condition (panel C).

Budgeted Spending. To explore the possibility that people who started budgeting early overspent because their budgets were lower, we compared the budget amounts by temporal separation condition. The amount budgeted did not differ based on temporal separation for both males ($M_{\text{ten-weeks}}$ = \$1127.31, SD = 187.98 vs. $M_{\text{three-weeks}}$ = \$1080.78, SD = 124.27; $F(1,85)$ = 1.93, p = .168, partial η^2 = .022) and females ($M_{\text{ten-weeks}}$ = \$609.67, SD = 72.35 vs. $M_{\text{three-weeks}}$ = \$602.04, SD = 72.21; $F(1,372)$ = 1.03, p = .310, partial η^2 = .003, see figure 2).

Actual Spending. Next, we compared the actual expense amount between conditions. Male participants who experienced a ten-week separation spent significantly more than those who experienced a three-week separation ($M_{\text{ten-weeks}}$ = \$1187.33, SD = 271.20 vs. $M_{\text{three-weeks}}$ =

$1046.98, SD = 212.69; $F(1,85) = 7.31$, $p = .008$, partial $\eta^2 = .079$). Similarly, female participants in the distant past condition spent more than those in the near past condition ($M_{\text{ten-weeks}}$ = $614.02, SD = 78.05 vs. $M_{\text{three-weeks}}$ = $599.40, SD = 63.10; $F(1,372) = 3.87$, $p = .050$, partial $\eta^2 = .010$, see figure 2).

We also compared actual spending within each budgeting condition to those who were not in our study ($N = 6293$). For males, untreated students spent directionally more money ($M_{\text{untreated}}$ = $1094.22, SD = 240.52) than near past budgeters ($M_{\text{three-weeks}}$ = $1046.98, SD = 212.69; $F(1,3051) = 1.94$, $p = .164$, partial $\eta^2 = .001$), and significantly less than distant past budgeters ($M_{\text{ten-weeks}}$ = $1187.33, SD = 271.20; $F(1,3051) = 5.33$, $p = .021$, partial $\eta^2 = .002$). The results for females were directionally similar. Although each pairwise comparison was not statistically significant, untreated students spent directionally more money ($M_{\text{untreated}}$ = $605.05, SD = 89.14) than near past budgeters ($M_{\text{three-weeks}}$ = $599.40, SD = 63.10, $F(1,3697) = .68$, $p = .411$, partial $\eta^2 < .001$), and directionally less money than distant past budgeters ($M_{\text{ten-weeks}}$ = $614.02, SD = 78.05, $F(1,3697) = 2.01$, $p = .156$, partial $\eta^2 = .001$).

Discussion

We observed that male students who were randomly assigned to experience greater temporal separation between budget setting and purchase for a class ring were more willing to overspend their budgets. Consistent with study 1, the difference in overspending was driven by differences in actual spending, and not by differences in budgeted spending. For female students, we also observe that greater temporal separation leads to higher actual spending, but not higher budgeted spending. We find that the effect of temporal separation on the overspending measure is directionally consistent with our hypotheses, although not statistically significant.

In contrast to study 1, study 2 provides causal support for the effect of temporal separation via random assignment. Study 2 also addresses concerns about some plausible alternative explanations. First, budgeting further in advance may lead to overspending because people simply forget about the budgeted amount. To mitigate this concern, we provided a reminder of the budgeted amount. Second, greater temporal separation in budgeting can cause overspending because product prices usually increase over time. In this study however, we were able to exactly account for the size of price inflation in the budget estimates, allowing us to address concerns about price inflation driving the effect. Third, greater temporal separation in budgeting may produce greater variance in budget adherence because budgets set in the distant past are less relevant to current conditions than budgets set more recently. However, this obsolescence would not predict a particular direction of spending, as budgets may be obsolete because they were set too low or too high.

Study 2 also allows for comparison with untreated students. Untreated students spent directionally more than those who budgeted three weeks in advance, and directionally less than those who budgeted 10 weeks in advance (though not always statistically significant). We surmise there may be several explanations for this result. One possibility is that untreated students engaged in budget setting of their own accord, at a time interval between three weeks and 10 weeks prior to purchase. This could cause spending to lie in the middle of the two budgeting conditions. Another possibility is that untreated students did not budget at all. In this case, there may be two competing forces at play. One is that not budgeting at all decreases spending relative to any budgeting because non-budgeters do not have the opportunity to adapt to the upcoming expense and hence feel the highest pain of payment. The other prediction is that not budgeting at all increases spending relative to any budgeting because having no budget

allows people to spend without limitation. It may be that both forces are active in this study, leading non-budgeters' spending to be in between that of the distant and near past budgeters.

There are several limitations to note in this study. One limitation is the low response rate; only 16.7% of the people we initially contacted responded to our bulk email, and only 26.5% of those who responded actually completed all phases of the study. We attribute this low response rate to the longitudinal, multi-phase nature of our experiment.

Another important caveat is that the effect of temporal separation on overspending was statistically significant for males, but not for females. We speculate that this may be due to female participants experiencing less pain of payment than male participants. There are two reasons why this might occur. One reason is that the price of the male rings ($1013 to $1892) was approximately twice as high as the price of the female rings ($512 to $859). Purchasing the male rings may thus elicit greater pain of payment than the female rings. We explore the role of price in budget depreciation in study 4.

A second reason is that there are gender-based differences in the tendency to experience pain of payment. Prior research on tightwads and spendthrifts (Rick, Cryder, and Loewenstein 2008) has shown that females tend to report higher levels of spendthriftiness than males. Given that spendthrifts generally feel less pain of payment, female participants in our study may have experienced less pain of payment than male participants. Because there is less pain to be mitigated, the impact of temporal separation on overspending may have been muted for females as compared to males. Our next study explicitly explores how individual differences in pain of payment moderate the effect of temporal separation.

2.6. Study 3: Temporal Separation Increases Overspending among Tightwads but not Spendthrifts

The goal of study 3 was to provide evidence for the underlying budget depreciation mechanism through mediation and moderation of process. There are chronic differences in the extent to which consumers experience pain of paying; tightwads experience more pain of paying, while spendthrifts experience less (TW-ST scale, Rick et al. 2008). If decreases in pain of paying are truly driving the overspending behavior, then people who naturally experience higher pain of paying (i.e., tightwads) should find that temporal separation has a strong effect on pain and subsequent overspending. In contrast, people who do not typically experience much pain of paying (i.e., spendthrifts) should find that temporal separation does not have a strong effect on pain, and subsequently, won't change their willingness to overspend. Thus, we predict an interaction of temporal separation by TW-ST such that the effect of temporal separation on pain and overspending is stronger for tightwads and weaker for spendthrifts.

Design and Procedure

We recruited 169 participants from people who came to a university football game (47.6% female, M_{age} = 39.0, SD = 13.6). No response was removed prior to analysis.

Participants were asked to imagine that they budgeted $300 either two-months ago (distant past) or one-week ago (near past) to purchase a tablet PC. Participants then indicated how painful it would be to spend the $300 that were set aside to buy the tablet PC (1 = not painful at all, 7 = extremely painful). Next, they indicated their willingness to purchase a premium version of the tablet PC with additional storage space and longer battery life at $330 (1 = very unlikely, 7 = very likely) as a measure for overspending. Based on our observation in

study 1 and 2 that greater temporal separation generally increases spending, study 3 specifically focuses on overspending as the dependent variable. Afterwards, we assessed the tendency to experience pain of paying using the TW-ST scale (ranges from 4 to 26) from Rick et al. (2008): 21.3% were tightwads, 56.2% were unconflicted, and 22.5% were spendthrifts. Participants also reported demographic information.

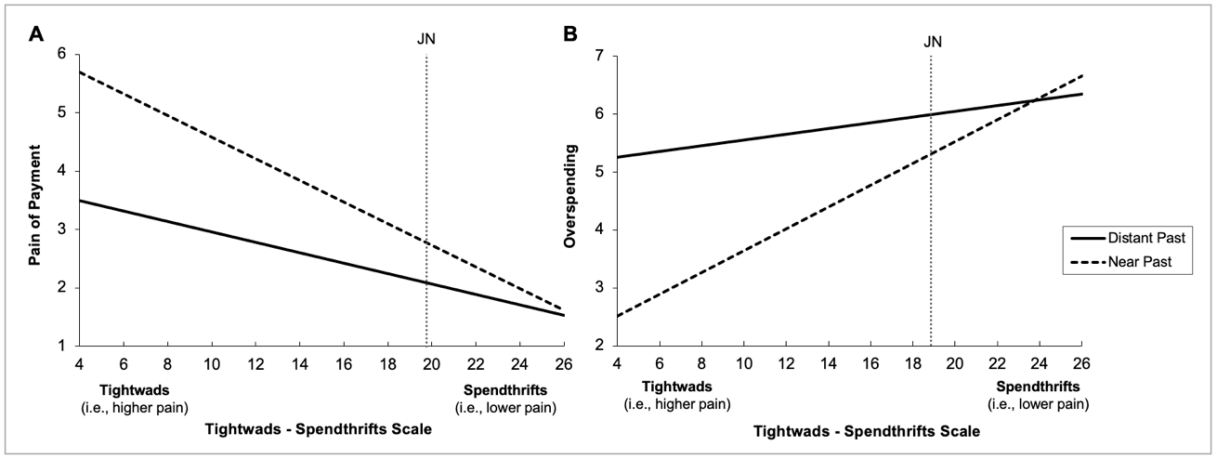
Results

Overspending. We ran a regression with temporal separation (0 = near past or one week, 1 = distant past or two months), TW-ST score (M = 15.14, SD = 4.68), and their interaction term as predictors, and overspending as the dependent variable. We observe a significant interaction between temporal separation and TW-ST score on overspending (b = -.14, SE = .06, $t(165)$ = -2.41, p = .017; figure 3B). A floodlight analysis (Spiller et al. 2013) revealed that for all TW-ST scores below the Johnson-Neyman point of 18.85, greater temporal separation significantly increases willingness to overspend. Thus, the effect of temporal separation on increasing overspending is significant for tightwads (scores of 4-11) and unconflicted consumers (scores of 12-18), but not spendthrifts (scores of 19-26).

Pain of Payment. A regression with temporal separation, TW-ST score, and their interaction term as predictors, and pain of payment as the dependent variable, revealed a marginally significant interaction (b = .10, SE = .05, $t(165)$ = 1.81, p = .072; figure 3A). A floodlight analysis revealed that the simple effect of temporal separation on pain of payment was significant for all TW-ST scores below the Johnson-Neyman point of 19.74. Thus, the effect of temporal separation on reducing pain of payment is significant for tightwads (scores of 4-11) and unconflicted consumers (scores of 12-18), but not for spendthrifts (scores of 19-26).

Mediation. To further test the role of pain of payment in the relationship between temporal separation and overspending, a moderated mediation analysis was conducted; temporal separation (0 = near past or one week, 1 = distant past or two months) was the independent variable, mean-centered TW-ST score was the moderator, pain of payment was the mediator, and overspending was the dependent variable. The analysis (Model 8; Hayes 2017) suggests moderated mediation (b = -.04, SE = .02, 95% CI: [-.10, -.0010]; see appendix A3 for full results). Decreased pain of payment mediated the effect of greater temporal separation on increasing overspending for people with TW-ST scores 1SD below the mean (b = .68, SE = .21, 95% CI: [.33, 1.11]) and at the mean (b = .51, SE = .15, 95% CI: [.24, .82]), but not for people with TW-ST scores 1SD above the mean (b = .30, SE = .16, 95% CI: [-.02, .64]).

Figure 3. Interaction between TW-ST and Temporal Separation (Study 3)



Note – Greater temporal separation leads to lower pain of payment (panel A) and more overspending (panel B) for tightwads but not for spendthrifts.

Discussion

Study 3 examines individual differences in experiencing pain of payment, represented as tightwads versus spendthrifts, as a boundary condition to the effect of temporal separation on spending decisions. We replicated the effect that, among tightwads and unconflicted consumers,

setting a budget in the distant past (i.e., two months) compared to the near past (i.e., one week) increases willingness to overspend. This effect was mediated by a reduction in the pain associated with spending money. The effect did not occur for spendthrifts, who generally feel little pain upon spending money. Together, these findings lend support for the mediating role of pain of payment on the effect of temporal separation.

These results also help to provide insight on our study 2 finding that the effect of temporal separation on overspending was significant for males but not for females. It is possible that, consistent with prior research (Rick et al., 2008), the female students in study 2 tended more toward spendthriftiness than male students, and generally felt less pain associated with spending.

In study 3, we examined how individual differences in pain of payment moderate the effect of temporal separation. There are also product differences that can impact pain of payment. Hedonic products are often more difficult to justify than utilitarian ones (Okada 2005), and elicit more guilt and negative self-attributions (Khan and Dhar 2006). This suggests that the pain associated with hedonic products may be higher than the pain associated with utilitarian products, and that the effect of temporal separation may thus be stronger for hedonic than utilitarian products. Study 3b (reported in appendix A4), using a similar experimental paradigm, confirms that consumers are more willing to overspend when budgeting in the near versus distant past for hedonically framed products, but not for utilitarian framed products.

The results from study 3 and 3b imply that the majority of our participants have been tightwads or unconflicted consumers, and that the stimuli used in our other studies are perceived to be hedonic. In two separate surveys conducted with students and MTurk workers, we observe that 90% of the undergraduate students and 85% of the MTurk workers sampled are indeed

tightwads or unconflicted. In a survey with MTurk workers, we find that the stimuli used in other studies are perceived as hedonic in nature.

Findings in study 3 and 3b help address several alternative process accounts. One alternative explanation is that temporal separation in budgeting increases spending because greater temporal distance encourages a focus on desirability (i.e., high construal level), which leads to increased willingness to spend extra money for a desirable product (Trope and Liberman 2010). A second explanation is that when people have spent a long time waiting and saving up their money for a purchase, they feel proud and feel that they deserve to reward themselves by purchasing a premium product (Kivetz and Simonson 2002; May and Irmak 2014). A third potential process is that people who have begun budgeting for a product further in the distant past feel more attached to the product, and perhaps even feel that they have owned the product (Shu and Peck 2011) for a longer period of time. This increased perception of ownership over time may increase valuation of the product (Strahilevitz and Loewenstein 1998), and thus increase willingness to spend. A fourth alternative suggests consumers infer that purchases which have been budgeted for further in advance are more important, and thus are more deserving of being upgraded. Finally, one might also predict that anticipation of the purchase increases over time (Loewenstein 1987; Nowlis, Mandel and McCabe 2004), and drives those who have experienced greater temporal separation to spend more.

While the effect of temporal separation is likely a multiply determined phenomenon, and each of the aforementioned alternative processes may very well occur in real life, it appears that the budget depreciation process is most consistent with the results observed in this study. Each of the aforementioned alternative explanations would predict that greater temporal separation increases overspending for all participants equally. However, we observed overspending only

among tightwads and unconflicted consumers, and not among spendthrifts. Further, the effect of temporal separation is mediated by pain of payment. That we observe overspending for hedonic products but not for utilitarian products in study 3b is also consistent with the budget depreciation account.

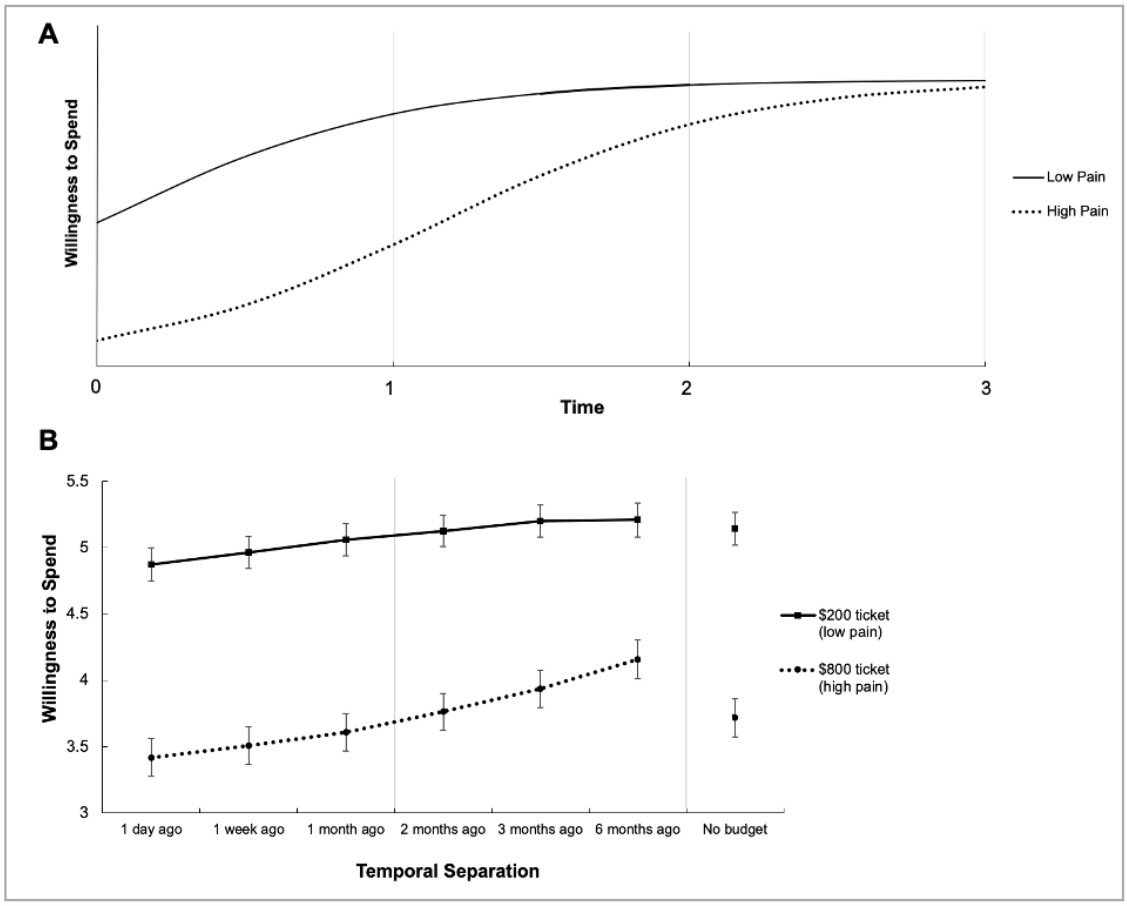
Thus far, we have operationalized the near versus distant past using various time frames: a continuous range from 1 to 236 days (study 1), 3 weeks versus 10 weeks (study 2), and 1 week versus 2 months (pilot study, study 3, study 3b). Given these differences, one might wonder how much time is needed to constitute the near versus distant past. We explore this, and the role of price, in our next study.

2.7. Study 4: Budget Depreciation Takes Longer for Higher Price Purchases

The budget depreciation process suggests that willingness to overspend increases over time because pain of payment dissipates over time. After enough time has passed, pain of payment should reach a floor level and willingness to spend should reach a ceiling level. We propose that the amount of time this takes depends on the amount of pain that one initially feels. Figure 4A illustrates the shape of the proposed function for a low pain, and a high pain purchase. For the low pain purchase, as time initially passes (from t_0 to t_1), pain of payment decreases and willingness to spend increases. As more time passes (from t_1 to t_2 to t_3), pain reaches a floor level and willingness to spend reaches a ceiling level. For purchases that elicit high pain, the depreciation process is longer; pain decreases and willingness to spend increases over the span of time from t_0 to t_2. It is not until after t_2 that pain begins to bottom and willingness to spend begins to plateau for the high pain purchase. The amount of temporal separation that results in

differential willingness to overspend is thus longer for high pain purchases (t_0 to t_2) than for low pain purchases (t_0 to t_1), resulting in different manifestations of 'near' versus 'distant' past.

Figure 4. The Effect of Temporal Separation as a Function of Purchase Price (Study 4)



Note – Willingness to spend initially increases with greater temporal separation, and eventually plateaus. The time it takes for this to occur is longer for high pain expenses than low pain expenses. Panel A illustrates the proposed shape of the function over time. Panel B plots the data points from study 4.

In our prior studies, we measured high and low pain via individual differences (tightwad vs. spendthrift in study 3) and manipulated it via product differences (hedonic vs. utilitarian products in study 3b). Our operationalizations of temporal separation were calibrated to coincide conceptually with t_1 and t_2 in figure 4A, amounts of temporal separation that would elicit an increase in willingness to spend for the high pain situation, but where willingness to spend will

have already plateaued for the low pain situation. Pain of payment should also be influenced by the price of a product, in terms of both absolute price, and price relative to one's reference price. For example, spending $1,000 on a ring feels more painful than spending $500 on a ring. However, spending $100,000 for a house might not feel extremely painful if one expects that houses typically cost at least $100,000.

In this study, we explore the time course of budget depreciation for a high and low pain product. We manipulate pain using a high versus low price, and explore how willingness to spend changes over six points in time ranging from one day to six months. These amounts of temporal separation were chosen to correspond conceptually with t_0 to t_2 in figure 4A, and with the operationalizations of temporal separation used in the prior studies.

Design and Procedure

We recruited 243 participants from Amazon Mechanical Turk (49.0% female, M_{age} = 39.26, SD = 12.49), and removed 13 participants who failed the reading check. This study used a 2 (purchase size: $200 vs. $800) × 7 (temporal separation levels: 1 day vs. 1 week vs. 1 month vs. 2 months vs. 3 months vs. 6 months vs. no-budget control) within-subject design. In the six temporal separation scenarios, participants were asked to imagine that they had budgeted $200 for a ticket to a post-season Major League Baseball game (MLB) or $800 for a ticket to a World Series MLB game 1 day, 1 week, 1 month, 2 months, 3 months, or 6 months ago. No budget information was provided for the no-budget control. Participants indicated their willingness to upgrade their ticket by adding $20 for the $200 purchase or $80 for the $800 purchase (1 = very unlikely to upgrade, 7 = very likely to upgrade).

Results

The data were analyzed in a repeated measures ANOVA with ticket price ($200 vs. $800) as one factor, and temporal separation (1 day vs. 1 week vs. 1 month vs. 2 months vs. 3 months vs. 6 months vs. no-budget as control) as another factor. Table 4 reports willingness to spend for each amount of temporal separation separated by price.

Table 4. Willingness to Spend as a Function of Temporal Separation and Price (Study 4)

Temporal Separation	1 day	1 week	1 month	2 months	3 months	6 months	No budgeting
$200 ticket	4.86[a] (1.98)	4.95[b] (1.89)	5.04[b,c] (1.89)	5.12[c] (1.88)	5.19[c] (1.88)	5.20[c] (1.99)	5.13[c] (1.94)
$800 ticket	3.38[d] (2.23)	3.45[e] (2.18)	3.56[f] (2.18)	3.73[g] (2.18)	3.90[h] (2.19)	4.14[i] (2.28)	3.69[g] (2.23)

Note – Mean willingness to spend by temporal separation and price. Standard deviation in parentheses. Different letters in superscript indicate that means differ significantly ($p < .05$).

The six different amounts of temporal separation in this study were chosen to align conceptually with t_0 to t_2 in figure 4A, and we plot the data from this study below it in figure 4B. We predicted that during the earlier time periods (i.e., t_0 to t_1), increases in temporal separation would result in higher willingness to spend for both the $200 ticket (i.e., low pain) and the $800 ticket (i.e., high pain). For the later time periods (i.e., t_1 to t_2), increases in temporal separation would result in higher willingness to spend for the $800 ticket (i.e., high pain) only, as willingness to spend for the $200 ticket (i.e., low pain) will have already plateaued. To explore this pattern, we ran a set of planned contrasts comparing willingness to spend in the 'near' versus 'distant' past for each incremental amount of temporal separation. Table 5 reports the mean difference in willingness to spend for each operationalization of 'near' versus 'distant' past separately for the $200 ticket and the $800 ticket. The interaction statistics indicate whether the difference in willingness to spend between 'near' versus 'distant' past is significantly different for the $200 ticket versus the $800 ticket. For example, the first row represents the difference in

willingness to spend when budgeting 1 day ago versus 1 week ago. For the $200 ticket, willingness to spend is higher in the distant past scenario ($M_{1\text{ week ago}}$ = 4.95, SD = 1.89) than in the near past scenario ($M_{1\text{ day ago}}$ = 4.86, SD = 1.98; $F(1, 229) = 3.95$, $p = .048$, partial $\eta^2 = .017$). For the $800 ticket, willingness to spend is also higher in the distant past scenario ($M_{1\text{ week ago}}$ = 3.45, SD = 2.23) than in the near past scenario ($M_{1\text{ day ago}}$ = 3.38, SD = 2.18; $F(1, 229) = 4.64$, $p = .032$, partial $\eta^2 = .020$). The difference in willingness to spend between the near and distant past scenario does not differ significantly between the $200 ticket ($M_{\text{difference}}$ = 0.96) and the $800 ticket ($M_{\text{difference}}$ = 0.70; $F(1, 229) = 0.26$, $p = .608$, partial $\eta^2 = .001$).

Table 5. The Effect of Temporal Separation as a Function of Purchase Price (Study 4)

Temporal Separation		Mean difference in willingness to spend for distant vs. near past		Interaction *F*	Interaction *p*
Near Past	Distant Past	$200 ticket	$800 ticket		
1 day ago	1 week ago	.096**	.070**	0.26	.608
1 week ago	1 month ago	.091*	.109***	0.12	.729
1 month ago	2 months ago	.078	.174***	1.94	.165
2 months ago	3 months ago	.065	.165***	3.59	.059
3 months ago	6 months ago	.009	.239***	14.36	<.001

Note – Mean difference in willingness to spend for distant verses near past is calculated as: willingness to spend in distant past minus willingness to spend in near past. Interaction statistics indicate whether this difference differs significantly for the $200 ticket versus the $800 ticket. * $p < .10$, ** $p < .05$, *** $p < .001$

During the earlier time periods (t_0 to t_1 in figure 4A; 1 day ago, 1 week ago, 1 month ago in figure 4B), people are more willing to spend as temporal separation increases from one time point to the next, for both the $200 ticket (i.e., low pain) and the $800 ticket (i.e., high pain). These increases in willingness to spend do not differ significantly between the two ticket prices (interaction *p*s > .60). For the later time periods (t_1 to t_2 in figure 4A; 1 month ago, 2 months ago, 3 months ago, 6 months ago in figure 4B), people are more willing to spend with increasing temporal separation for the $800 ticket (i.e., high pain), but not for the $200 ticket (i.e., low pain) as the willingness to spend for the $200 ticket (i.e., low pain) has already begun to plateau. The

interaction of temporal separation by ticket price becomes statistically significant beginning at the 2 months-time point (interaction *p*s < .06).

We also compare the effect of temporal separation in budgeting to not budgeting at all (see table 4 for means). For the $200 ticket (i.e., low pain), people were more willing to spend when not budgeting at all (M = 5.13) compared to budgeting 1 day ago (M = 4.86) or 1 week ago (M = 4.95; *p*s < .01 for both pairwise comparison) and equally willing to spend compared to all the other time periods (*p*s > .30 for all pairwise comparison). For the $800 ticket, people were more willing to spend when not budgeting at all (M = 3.69) compared to budgeting 1 day ago (M = 3.38), 1 week ago (M = 3.45) or 1 month ago (M = 3.56; *p*s < .05 for all pairwise comparisons), equally willing to spend compared to budgeting 2 months ago (M = 3.73, p = .55) and less willing to spend compared to budgeting 3 months ago (M = 3.90) or 6 months ago (M = 4.14, *p*s < .05). Appendix A5 provides further detail on these comparisons.

Discussion

Results from study 4 support the idea that budget depreciation takes longer for higher cost purchases. We observe that for an $800 purchase (i.e., high pain), willingness to spend increases as temporal separation increases from one time point to the next, starting from 1 day ago to 6 months ago. For a $200 purchase (i.e., low pain) however, willingness to spend increases from 1 day ago to 1 month ago, but reaches a plateau after that.

This is consistent with the pattern of results observed across our prior studies and helps to explain why, for a given instantiation of 'near' versus 'distant' past, a high pain purchase might show a difference in willingness to spend, while a low pain purchase might not. It also helps to shed light on our finding in study 2 that the effect of temporal separation on overspending was

significant for males but not for females. It may be that budget depreciation takes longer for the higher priced male rings ($1013 to $1892), and that willingness to overspend for the lower priced female rings ($512 to $859) had already begun to plateau.

Study 4 also offers a comparison with not budgeting at all. We observe that willingness to upgrade when not budgeting is directionally higher than budgeting 1 day, 1 week or 1 month ago, similar to budgeting 2 months ago, and directionally lower than budgeting 3 months or 6 months ago. We speculate that, consistent with study 2, this may be a result of two countervailing forces. Not budgeting implies that the budget depreciation process cannot occur, which should decrease spending relative to any budgeting. On the other hand, not budgeting may imply an ability to spend without limitation, which should increase spending relative to any budgeting. The two processes may have combined such that willingness to upgrade for the no-budgeting scenario lies in between the 'near' and 'distant' past.

One limitation of this study is that due to the scenario-based nature of this experiment, we are only able to assess people's lay beliefs about how pain of payment and willingness to spend would change, rather than capture people's actual feelings and purchase decisions. While studies 1 and 2 capture changes in actual purchase decisions, they did not assess pain of payment. To overcome this limitation, study 5 adopts an incentive-compatible experimental design to measure actual pain of payment and actual purchases.

While study 4 explored budgeting time frames spanning from 1 day to 6 months, we would expect this general pattern to occur even in very short time periods if the purchase cost is very low. We thus designed study 5 to manipulate temporal separation during a very short time period (one-hour-long lab session), using a very low-cost purchase (in-lab credits for films).

2.8. Study 5: The Effect of Temporal Separation is Mitigated When People Repeatedly Reassess Their Budgets

The goal of study 5 was to provide additional evidence for the underlying process with a consequential outcome variable, while addressing the limitations associated with scenario studies. Adopting a microcosmic and minimalistic simulation (e.g., Hsee et al. 2013; Shah, Mullainathan, and Shafir 2012), we simulate an individual's budgeting and purchasing process within the confines of the lab. Participants earn in-lab credits, budget for films they watch in the lab, and experience either a short or long wait period before making a consequential purchase.

The budget depreciation process implies that the ability to adapt to the budgeted amount of money is a necessary condition, and that inhibiting the adaptation process should mitigate the effect of temporal separation on spending. One way to inhibit the adaptation process is to encourage people to repeatedly deliberate on and reconsider their budgeted spending.

In our prior studies, we assumed that the budgeting decision is closed after the budget is set; after people set their budget, they feel that they have made a decision to spend that amount of money. However, people do not always experience choice closure and may not consider the decision phase complete, even after making a choice (Gu, Botti, and Faro 2013; 2018). People may revisit a decision and engage in further comparisons with forgone alternatives (Carmon, Wertenbroch, and Zeelenberg 2003). For those who constantly reevaluate their budget decision, completion of the decision phase is postponed until they stop reevaluating that decision.

In study 5, we randomly assign participants to repeatedly deliberate on their budget after the budget has already been set. This deliberation prolongs the budgeting decision, reducing the amount of temporal separation between the final budget and actual purchase, and suppressing hedonic cost adaptation. If budget depreciation is the underlying process, then those experiencing

a long wait who are made to repeatedly deliberate on their budget should behave similarly to those who experience a short wait.

Design and Procedure

A total of 226 undergraduate students participated in this study. Fifteen participants were removed from the study due to a technical glitch causing the lab computers to crash, leaving 211 participants for analysis (37.4% female, M_{age} = 20.80, SD = 2.27). Participants were tested individually while seated in front of a computer screen wearing a headset (see appendix A6 for a diagram of the experiment phases). Before starting the study, participants were told what to expect in each phase so that they could plan accordingly.

In phase 1 (i.e., earning credits), participants engaged in a credit-earning task. Participants were told they could earn 50, 100, or 150 credits based on the number of e's they could count in an article within one-minute. In actuality, all participants received 100 credits.

In phase 2 (i.e., budgeting for films), participants set a budget for the number of credits they would like to allocate to film purchases during the experiment. Each film costs 30 credits for a five-minute viewing. To ensure that participants were aware of the number of budgeted credits, the webpage showed a visual indicating how many credits they had budgeted and how many were left. To create an opportunity cost for their credit usage, participants were told that any credits not spent on films could be used to purchase computer games to play in the fifth phase of the lab session. After writing down their film budget, participants rated pain of payment at the moment of budgeting using a one-item measure: "when you think about the credits you have planned to spend on films, how much pain does this make you feel?" (1 = not painful at all, 7 = very painful; adapted from Morewedge et al. 2007). Pain of payment towards the budgeted

money before experiencing temporal separation did not differ significantly ($M_{20\text{-minutes}} = 2.06$, SD = 1.27 vs. $M_{5\text{-minutes}} = 1.95$, SD = 1.33, $t(209) = -.58$, $p = .562$).

Phase 3 (i.e., wait time period) manipulated temporal separation and budget deliberation. Participants were randomly assigned to one of the 2 (temporal separation: 20-minutes vs. 5 minutes) × 2 (budget deliberation vs. no budget deliberation) experimental conditions. All participants were given crossword puzzles to complete on paper, while the information screen for the films was left open on the computer screen in front of them. This was designed to simulate what happens in life after a budget decision – a person can move on (by playing crossword puzzles), or they can continue to look up product information and deliberate on their decision.

To manipulate deliberation during the wait period, half of the participants were asked to re-assess their budget 5 times during the wait period. Those waiting for 20 minutes reevaluated their budget every 4 minutes, while those waiting for 5 minutes reevaluated their budget every 1 minute. Thus, the final budget decision was made at the same time, regardless of temporal separation condition. After the final budget decision, participants reported on pain of payment.

In phase 4, participants used their credits to purchase and watch films. In phase 5, participants used their remaining credits to purchase and play games.

Results

Overspending. We calculated the simple difference between the final budget and the actual spending on film purchases as a measure for overspending. A two-way between-subjects ANOVA revealed a significant interaction between temporal separation and budget deliberation on willingness to overspend ($F(1,207) = 3.94$, $p = .048$, partial $\eta^2 = .019$; figure 5B). For people who did not deliberate on their film budget during the temporal separation, greater temporal

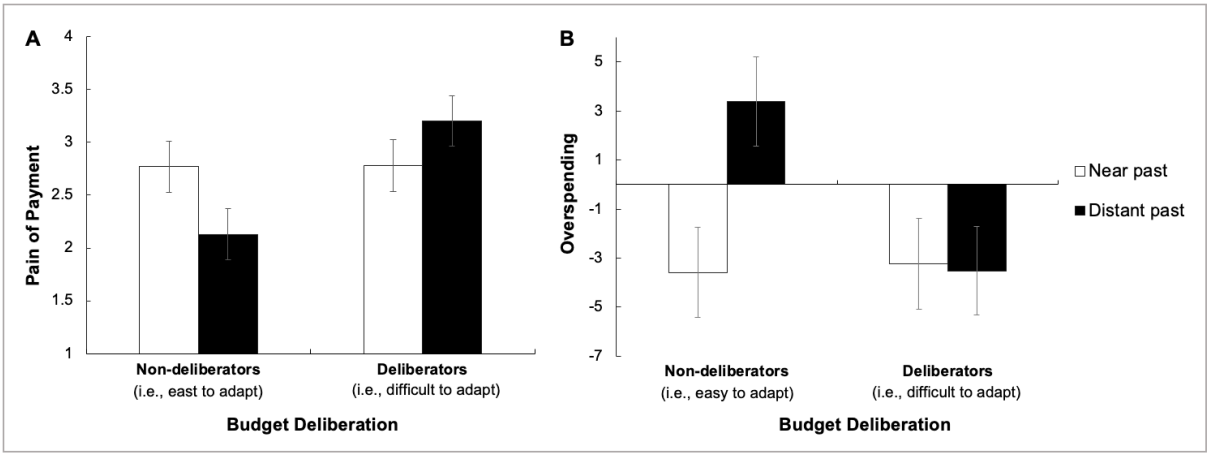
separation increased overspending ($M_{20\text{-minutes*non-deliberators}}$ = 3.40, SD = 11.26 vs. $M_{5\text{-minutes*non-deliberators}}$ = -3.58, SD = 9.63, $F(1,207) = 7.25$, $p = .008$, partial $\eta^2 = .034$). However, for people who did deliberate and re-assess their film budget during the temporal separation, temporal separation did not have a significant effect on overspending ($M_{20\text{-minutes*deliberators}}$ = -3.52, SD = 13.48 vs. $M_{5\text{-minutes*deliberators}}$ = -3.24, SD = 17.60, $F(1,207) = .018$, $p = .893$, partial $\eta^2 < .001$).

Pain of Payment. A two-way between-subjects ANOVA revealed a significant interaction between temporal separation and budget deliberation on pain of payment ($F(1,207) = 4.84$, $p = .029$, partial $\eta^2 = .023$; figure 5A). For people who did not deliberate on their film budget during the temporal separation, greater temporal separation marginally decreased pain of payment ($M_{20\text{-minute*non-deliberators}}$ = 2.13, SD = 1.44 vs. $M_{5\text{-minute*non-deliberators}}$ = 2.77, SD = 1.76, $F(1,207) = 3.54$, $p = .061$, partial $\eta^2 = .017$). However, for people who deliberated on their film budget during the temporal separation, temporal separation did not have a significant effect on pain of payment ($M_{20\text{-minute*deliberators}}$ = 3.20, SD = 1.74 vs. $M_{5\text{-minute*deliberators}}$ = 2.78, SD = 2.02, $F(1,207) = 1.50$, $p = .221$, partial $\eta^2 = .007$).

Mediation. To further test the role of pain of payment in the relationship between temporal separation and overspending, a moderated mediation analysis was conducted; temporal separation (near past or 5-minute gap = 0, distant past or 20-minute gap = 1) was the independent variable, budget deliberation (non-deliberators = 0, deliberators = 1) was the moderator, pain of payment was the mediator, and overspending was the dependent variable. The analysis (Model 8; Hayes 2017) suggests moderated mediation (b = -.97, SE = .71, 90% CI: [-2.24, -.01], see appendix A7 for full results). Greater temporal separation marginally increased willingness to overspend through lower pain of paying for people who were non-deliberators ($b_{\text{non-deliberators}}$ =

.58, SE = .46, 90% CI: [.01, 1.43]), but not for people who were deliberators ($b_{\text{deliberators}}$ = -.38, SE = .42, 90% CI: [-1.14, .18]).

Figure 5. Interaction between Deliberation and Temporal Separation (Study 5)



Note – Greater temporal separation leads to lower pain of payment (panel A) and higher overspending (panel B) only for those who do not deliberate on their budgets.

Budgeted Spending. We also compared the budgeted spending between conditions. A two-way between-subjects ANOVA did not find a significant interaction between temporal separation and budget deliberation conditions ($F(1,207) = 2.41$, $p = .122$, partial $\eta^2 = .012$), nor were there any significant main effects of temporal separation ($F(1,207) = .65$, $p = .422$, partial $\eta^2 = .003$) or budget deliberation ($F(1,207) = 1.24$, $p = .268$, partial $\eta^2 = .006$; see appendix A7 for additional details).

Actual Spending. Next, we compared the actual spending between conditions. A two-way between-subjects ANOVA found a marginally significant main effect of temporal separation such that, collapsing across deliberation conditions, greater temporal separation increased actual spending ($M_{20\text{-minute}} = 52.43$, SD = 20.23 vs. $M_{5\text{-minute}} = 46.44$, SD = 26.40, $F(1,207) = 3.40$, $p = .066$, partial $\eta^2 = .016$). Unexpectedly, this main effect was not qualified by a significant interaction between temporal separation and budget deliberation conditions ($F(1,207) = .20$, $p =$

.653, partial $\eta^2 = .001$), suggesting that the effect of temporal separation on actual spending was similar across deliberation conditions. There was no main effect of deliberation condition (p = .911).

Discussion

Consistent with hypothesis 1 and hypothesis 3, this study finds that those who experience greater temporal separation spend more relative to their budgets, and that pain of payment mediates this effect, albeit at a 90% CI. For consumers who deliberate on and reassess their budget, pain of payment remains high over time, and consumers are unwilling to overspend.

We had predicted that the effect of temporal separation on overspending would be driven by changes in actual spending, and not by changes in budgeted spending (hypothesis 2). While the observed results are directionally consistent with our prediction for the non-deliberators, they are inconsistent with our prediction for the deliberators. For deliberators, we hypothesized that temporal separation would have no effect on budgeted or actual spending, but we instead observe that greater temporal separation leads to a marginal increase in actual spending. To explore why this result may have occurred, we further analyzed the budgeted spending data for deliberators and find that greater temporal separation leads to a marginal increase in budgeted spending as well ($M_{20\text{-minute*deliberators}} = 56.85$, SD = 22.13 vs. $M_{5\text{-minute*deliberators}} = 49.12$, SD = 28.28; $p = .098$). In hindsight, we suspect that for deliberators, the increase in both budgeted and actual spending for the distant past condition may have been a result of an experimental artefact. It is possible that participants who anticipated being asked to reconsider their budget over 20 minutes felt a stronger need to justify their decisions than those who anticipated being asked to reconsider their budget over 5 minutes. This may have increased the desire to add slack to the budget, leading to

higher budget estimates. It may also have increased the desire to appear consistent with the prior budget decision, leading to higher actual spending.

One may also wonder whether deliberators budgeted more in the distant past condition than the near past condition because of increased difficulty in estimation. In the pilot study, we found that when people set budgets for multiple expenses to occur over a duration of time, those who do so for the distant future set higher budgets than those who do so for the near future. Although participants in this study did indeed set a budget for multiple expenses (multiple films and multiple games), the consumption of these purchases occurred within a single consumption period for both the near and distant time conditions. As such, we do not believe this difference was due to increased difficulty in estimation.

2.9. General Discussion

Across a secondary dataset of real estate purchases, a field study, and three experiments, we explore the effect of temporal separation between the moment of budget setting and the moment of purchase. Contrary to popular belief that setting a budget far ahead of a purchase is most helpful, our findings reveal that when single item budgets are set aside far in advance, consumers are more willing to overspend their budgets when it comes time to make the purchase.

Our first study explores this effect with a secondary dataset of consumer home purchases, and finds that consumers spend more relative to their budgets as more time passes since they set those budgets. The difference in overspending across time is driven by differences in actual spending, and not by differences in budgeted spending.

Study 2 builds on the correlational evidence provided in study 1 by offering causal support in a field study setting. Students who were randomly assigned to set their class ring

budget in the distant past budget a similar amount as those who set their class ring budget in the near past, but end up spending more. When analyzing the difference between actual and budgeted spending, we observe that male students are significantly more likely to overspend as temporal separation increases. Unexpectedly, this difference, while directional, is not statistically significant for female students. We speculate that this may result from males experiencing higher pain of payment than females because the price of the rings is higher for males than for females and because males tend to be higher in tightwaddism than females (Rick et al. 2008).

Our next studies provide evidence for the budget depreciation process. We demonstrate that the effect of temporal separation is most pronounced when people naturally experience high pain of payment. Study 3 shows the effect of temporal separation holds for tightwads (i.e., consumers who usually feel greater pain of paying) but not for spendthrifts (i.e., consumers who usually feel lower pain of paying), and is mediated by pain of payment. Study 3b (appendix A4) further shows that the effect of temporal separation holds for hedonic products (i.e., products that typically evoke greater pain of payment) but not for utilitarian products (i.e., products that typically evoke lower pain of payment). Study 4 explores the role of price in influencing what constitutes the 'near' versus 'distant' past. We propose that willingness to spend increases with time as people incorporate the budgeted purchase into their status quo, and begins to plateau after enough time has passed. Results from study 4 suggest that the budget depreciation process takes longer for higher price purchases.

Study 5 provides further process evidence by manipulating the ability to adapt over time to the hedonic cost associated with payment. Using an experimental paradigm with consequential choices, we show that the effect of temporal separation on overspending is mitigated for those who repeatedly deliberate on their budgets, and that this pattern of effects is mediated by pain of

paying. We note a caveat in interpreting this result; the potential of an experimental artefact for those who were made to repeatedly deliberate on their budgets.

Future Directions

Comparisons to Not Budgeting at All. In study 2, untreated students spent directionally more than the near past budgeters and directionally less than the distant past budgeters. In study 4, non-budgeters were more likely to upgrade their ticket purchase than budgeters in the near past, but less likely to upgrade their tickets than budgeters in the distant past. We have speculated that there are two competing forces that drive spending in the non-budgeting conditions. Not budgeting may mean that one has not had any time at all to adapt to the upcoming expense, and hence experiences the highest pain of payment. This would lead to the lowest amount of spending. On the other hand, when not setting any budget at all, people might infer that they do not need to limit their spending, leading non-budgeters to spend the highest amount of money. The results we observe suggest a mix of these two forces. In future research, it would be interesting to explore when and why each is most dominant.

Multiply Determined Process. Throughout this article, we observe and provide evidence that greater temporal separation increases spending relative to the budget through decreased pain of payment. However, we recognize that this pattern of overspending is likely driven by multiple factors in real life, such as 1) memory decay, 2) price inflation, 3) focus on product desirability, 4) licensing effects, 5) perceived product ownership, 6) perceived importance, 7) increased anticipation, and 8) increased knowledge about the purchase. Although we observe evidence consistent with the pain of payment explanation, it would be worthwhile for future research to determine which other explanations are prevalent.

Relatedly, with the exception of study 1, we generally sought to manipulate and randomly assign the length of temporal separation between budgeting and spending in order to isolate the effect of temporal separation. In reality, people may endogenously select the length of temporal separation according to factors that increase the willingness to overspend. For example, consumers who have a strong preference for a product may be both more likely to start budgeting earlier for that product and to overspend their budget for that product. Future research could explore how consumers choose when to begin budgeting for an upcoming purchase.

Post-Purchase Emotions. Another interesting avenue would be to explore the affective consequences of overspending for those who budgeted further in advance. Researchers have documented post-purchase emotions such as satisfaction (e.g., Mano and Oliver 1993) and regret (e.g., Zeelenberg et al. 1998). How does temporal separation alter the type of emotions that consumers feel after overspending? One prediction might be that consumers are more satisfied with their purchases because the temporal separation they experience prior to the purchase completely removes the negative emotion attached to overspending. Exploring the impact of temporal separation on post-purchase affective consequences can contribute to our understanding of the different stages in the consumer decision process.

Alternate Patterns of Spending. In addition, future research could explore the situations under which greater temporal separation might lead to underspending. While we observe overspending with greater temporal separation, there is also reason to predict that people overestimate budgets in the distant future, leading to underspending. What factors cause one pattern of effects over the other? One might predict that underspending is more common for budgets set with explicit savings goals in mind.

Theoretical Implications

This research complements several streams of literature. First, our findings add to the mental budgeting literature by introducing the notion of temporal separation in budgeting and its impact on effective budgeting. Existing literature has examined different factors related to time that influence budget adherence, such as the temporal framing of budgets (Ülkümen et al. 2008), and general versus specific time frames (Peetz and Buehler 2013). The current research identifies temporal separation as another important factor in budgeting that influences how much people spend relative to their budgets, and elucidates the direction of the effect. Further, while most prior research focuses on budgeting for multiple expenses over a duration of time, we focus on budgeting for a single expense. We contrast single expense budgeting with multiple expense budgeting; while budgeting for multiple expenses over a duration of time is more difficult for longer than shorter durations (consistent with Ülkümen et al. 2008), budgeting for a single expense to occur at the end of a time period is just as difficult regardless of when it occurs. This helps to reconcile why budget discrepancies are driven through changes in budget estimates for multiple expenses, but driven through changes in spending for single expenses.

We also contribute to research on pain of payment. Gourville and Soman (1998) find that greater temporal separation between payment and consumption reduces the pain associated with the payment, and that this in turn reduces the sunk-cost impact of the payment on consumption behavior. Connecting the literature on payment depreciation with mental budgeting, we propose and find that the hedonic cost associated with an upcoming budgeted payment can recede with time, much like the hedonic cost associated with payments that have already been made.

This connection also offers some insights on sunk costs. Sunk costs are non-recoverable expenditures, and the sunk-cost effect refers to the tendency for people to irrationally consider

sunk costs when making related future spending decisions (Arkes and Blumer, 1985; Thaler 1980). Results from Gourville and Soman (1998) and from this research both suggest that greater temporal separation increases the extent to which prior spending decisions feel more like sunk costs, costs that should not be considered when making future spending decisions. In the case of payment depreciation, treating prior non-recoverable expenses as sunk can be considered helpful, in that it increases rational decision making. But in the current research, treating a prior budget decision as 'sunk' can be considered unhelpful because these budget decisions are not actually non-recoverable expenditures, and treating it as such leads to increased spending.

In addition, this research contributes broadly to prior work on the effect of temporal separation. Prior research has investigated the role of temporal separation between payment and consumption on sunk-cost effects (Gourville and Soman 1998; Soster, Monga and Bearden 2010), between choice and consumption on enjoyment (Nowlis et al. 2004), and between choice and consumption on product performance (Monga and Houston 2006). The current research adds to this body of work, investigating the role of temporal separation between budgeting and payment on pain of payment and overspending.

Practical Implications

In our studies, we observe that consumers are willing to spend about 5-10% more than the budgeted amount when they experience greater temporal separation. This effect might not seem substantial at first glance, but it is worth noting that consumers budget for many different items over a year, and the aggregate impact of temporal separation on overspending for all these different items can be quite substantial. Further, overspending on a single large purchase like a house can have a significant impact on a consumers' overall wealth.

This research can provide actionable insights for businesses. For example, a financial advisor might recommend that a client not budget further in advance than necessary, or that a client reconsider the budget shortly before spending. Hotels and rental car agencies can strategically allocate their resources to selling upgrades to consumers who made their reservations further in advance, as these customers may be more willing to pay for upgrades. Firms that are launching a new product might consider releasing the price of the product well in advance of its release to encourage consumers to start budgeting early, allowing the budget depreciation process to unfold while waiting for the product release.

Consumers themselves can also take advantage of these findings to manage their spending, and their emotional responses to spending. The spendthrift who is planning to buy a house might do well to reconsider the budgeted amount of spending from time to time. The tightwad who knows that an expensive family vacation is coming up could begin mentally budgeting for that vacation far in advance so that it feels less painful when the time to spend finally arrives.

Conclusion

Consumers are frequently told to set budgets in advance, but budget depreciation suggests that budgeting too far in advance can be detrimental. The pain associated with spending dissipates over time and can lead to an increased willingness to spend.

3. ESSAY 2: DIVERGENT EFFECTS OF BUDGETING FOR GIFT- VERSUS PERSONAL-PURCHASES

Abstract

Consumers often set budgets with the goal to minimize their spending. Contrary to this traditional interpretation, our research suggests that budgets can take on a different psychological meaning depending on whether the budget is for a personal- or gift-purchase. Across seven studies, we find evidence that consumers aim to spend below their budgets for personal-purchases, but aim to spend the entirety of their budgets for gift-purchases. This preference is driven by a weaker savings goal for gift-purchases and manifests in higher spending for gift-purchases. The effect of personal- vs. gift-budget on spending arises when consumers experience budget slack, and also when they set either an implicit or explicit budget. We discuss plausible reasons why savings goals are weaker for gift- than personal-purchases and observe that the effect holds for both gift and non-gift purchase. This research contributes to prior literature in mental budgeting, gift-giving and self-other decisions, and offers insights for marketing practice.

Keywords: mental budgets, budgeting, gift-giving, self-other decisions, goals

3.1. Introduction

Consumers often budget their spending on rent, transportation, food, bills, and other expenses. Thaler (1985, 1999) proposed an account of mental budgeting that refers to consumers organizing their money's inflow and outflows and spending it accordingly. For instance, salary income may be treated with more gravity than a tax refund and is therefore less likely to be spent on indulgent purchases (Thaler and Shefrin 1981). Following Thaler's (1985, 1999) seminal work, a large amount of theoretical work (e.g., Das et al. 2010; Henderson and Peterson 1992; Zelizer 1989) and experimental work (e.g., Cheema and Soman 2006; Choe and Kan 2021; Gourville and Soman 1998; Heath and Soll 1996; Prelec and Loewenstein 1998; Sheehan and Van Ittersum 2018; Ülkümen, Thomas, and Morwitz 2008) has continued to investigate mental budgeting. These cumulative studies have greatly enriched our understanding of mental budgeting; however, nearly all of them focus on situations in which consumers budget purchases that they make for themselves, overlooking situations in which consumers budget purchases that they make for others. In this research, we investigate the difference between personal-purchase budgets and gift-purchase budgets to address this important gap in the literature.

How ubiquitous are gift-budgets? By one account, around 80% of holiday budgets are set for gifts (Statista 2011). Retailers often promote and categorize gift items according to budget ranges (e.g., "Gifts for Under $100"). And consumers often set budgets for gift-exchange events, such as "Secret Santa" and "White Elephant." Although gift-giving is a prevalent consumer behavior, the intersection between budgeting, spending, and gift-giving has received little attention. This is surprising because gift-giving is a sizeable consumer expense. For American households, consumers spend as much on food as they do on gifts (Deloitte 2019). Because both gift-giving and gift-budgeting appear to be common in practice, this begs the question of how

gift-budgets affect consumer behavior: Do gift-budgets have the same documented effects as personal-budgets—or do consumers treat gift-budgets differently from personal-budgets? To answer this question, we investigate the differences between gift- and personal-purchases, by focusing on consumers' gift- and personal-purchase budgets.

3.2. Theoretical Background

Personal-Budgets and Savings Goals

In the literature, a mental budget is a reference point for a purchase decision—it provides a standard for one's behavior (Heath, Larrick, and Wu 1999). For household finances, a budget is a numerical representation of one's behavioral goals, and consumers set budgets to efficiently allocate their resources under constraints. In support of budgets' efficacy, research has shown that budgets help to prevent unplanned purchases (Krishnamurthy and Prokopec 2010; Stilley, Inman, and Wakefield 2010). It is well established that consumers willingly set budgets in an effort to manage and minimize their spending, as a form of self-control (Peetz and Buehler 2009). As research has shown, when consumers spend less than their budgets, they consider it a matter of personal success—it contributes to their overall well-being, and consumers will reward themselves for spending under-budget (Kan, Fernbach, and Lynch 2018; Netemeyer et al. 2018). All told, we expect that consumers with personal-budgets aim to spend less than their budgets in an effort to minimize their spending. That is, consumers have a *budget-minimizing* goal for personal-budgets.

Gift-Budgets and Savings Goals

Research on gift-giving hints that consumers will not treat gift-purchase budgets in the same (budget-minimizing) way as they do for personal-purchase budgets. While savings goals are highly salient for personal-budgets, there are reasons to suspect that they may be less salient for gift-budgets. Gift purchases differ from personal-purchases in two important ways: (1) gift purchases are typically made for other people rather than for the self, and (2) gift purchases are often made for different occasions than non-gift purchases. These differences can lead to competing goals, and cause people to focus less on savings than they might otherwise.

Compared to purchases made for the self, gift-giving involves social exchange, in that gifts serve as a means to build, maintain, and signal relationships with other people (Belk 1976; Sherry 1983). Gifts carry a symbolic message for interpersonal relationships, and consumers often believe that the value of a gift reflects the weight of the giver-receiver relationship (Poe 1977; Shurmer 1971). While gift givers seek to choose a gift that best matches the preferences of gift recipients (Otnes, Lowerey, and Kim 1993; Steffel and LeBouef 2014), they often fail to accurately predict recipients' preferences (e.g., Galak, Givi, and Williams 2016; Steffel, Williams, and LeBouef 2015). To mitigate the likelihood of such failure, givers may opt to use price as an indicator of receivers' preferences, and consequently, may become less price-sensitive (Wang and Van der Lans 2018). In other words, givers may rely on gift value as a means to increase the potential that recipients will like their gifts. Gift-givers tend to expect that the more they spend, the greater the anticipated feelings of appreciation by gift-recipients (Flynn and Adams 2009). Consequently, givers might focus more on the value or the price of a gift, rather than which gift item to give. This dovetails with prior research demonstrating that consumers are less willing to make trade-offs in favor of acquiring a cheaper price when making gift-purchases compared to personal-purchases (Boncinelli et al. 2019), and avoid choosing

lower-priced items when buying for beloved others (McGraw et al. 2016). Together, this literature suggests that people may focus less on saving money when purchasing from gift-budgets than when purchasing from personal-budgets.

Consumers may also have altruistic motives when buying gifts for others. According to this motivation, givers mainly focus on choosing a gift that makes a recipient happy (Sherry 1983). Prior research shows that gift-choices are different from choices consumers make for themselves (for a review, see Liu, Dallas, and Fitzsimons 2019); consumers maximize more on behalf of others than they do for themselves (Liu, Polman, Liu, and Jiao 2018). For example, people put more time and effort in designing gift products for others compared to products for their own consumption (Moreau, Bonney, and Herd 2011; Yin et al. 2020). People are more generous when buying gifts for others than when making identical purchases for the self (Galak, Givi, and Williams 2016; Liu et al. 2019), and in turn focus less on saving money for their own benefits. Relatedly, when budgeting for a gift, people may consider money allocated to the gift recipient as being under the ownership of the gift recipient. This causes givers to feel guilty about leaving money in the gift account unspent, because they perceive themselves as stealing money that belongs to the recipient (Denton and Rucker 2013). This could decrease people's motivation for saving money when buying a gift.

In addition, gift-giving plays an instrumental role in managing impressions and drawing in the personal benefits of reciprocity with other people (Giesler 2006; Gouldner 1960). Sherry (1983) documents this motive as agonistic because givers tend to maximize their own satisfaction. For example, a giver may use a gift as a vehicle to engage in impression management with the aim to define their power and status, to avoid social rejection, or to affect perceptions of themselves. As another example, a giver may choose a gift with the expectation of

receiving a gift back or building future interactions with recipients (Gergen and Wishnov 1965). In a close relationship, a giver who thinks of the recipient as more powerful and is worth more than themselves use a gift as a means to maintain their relationship (Nguyen and Munch 2011). According to the instrumental motive, people might focus less on saving money as they prioritize other benefits obtained from the gift-exchange.

Although gifts are most often given to other people, consumers can also engage in self-gifting. Gifts are often purchased to mark special events, such as a birthday, wedding, or graduation, or to celebrate holidays (Belk 1976; Cheal 1987). Just as consumers may purchase gifts to commemorate these special occasions with other people, they may also purchase gifts for themselves when celebrating personal achievements or special events (Mick and DeMoss 1990). These self-gifts may be perceived as exceptional expenses that warrant greater spending (Sussman and Alter 2012). In this vein, the specialness of the gifting occasion may cause people to focus less on saving money when spending from gift-budgets than from personal-budgets, even when the gift is for themselves.

Taken together, these accounts suggest that savings goals may be less salient when choosing gifts. As a result, we predict that in contrast to the budget-minimizing preferences that consumers possess for personal-purchases, consumers will treat gift-budgets in a relative budget-*maximizing* manner and concentrate less of their focus on savings goals when choosing gifts. More formally, we hypothesize:

H1: Consumers with personal-budgets prefer to spend less of their budgets (i.e., they budget-minimize), whereas consumers with gift-budgets prefer to spend more of their budgets (i.e., they budget-maximize).

H2: Consumers tend toward budget-maximizing than budget-minimizing because they have weaker savings goals when making gift-purchases compared to personal-purchases.

Key to these hypotheses is the greater extent of spending on gift-purchases over personal-purchases. Although we predict that consumers will spend more on gift-purchases, it is not our contention that consumers will maximize spending on gifts, strictly speaking. To illustrate the difference between budget-maximizing and maximizing-spending, consider that budget-maximizing indeed implies spending more money, however, spending more money does not imply maximizing one's budget. This is because spending more money could also lead to *exceeding* one's budget. That is, there is a difference between spending more of a budget and spending above one's budget. Our focus is on the former—how much of a budget is spent, and whether consumers perceive budgets as goal-amounts that they should spend less of, or more of. It goes without saying that, conditional on having a budget, consumers generally dislike spending more than their budget; however, it is not a forgone conclusion that spending less than a budget is always more desirable. As hypothesized, consumers may have a tendency to prefer spending less of a personal-budget and more of a gift-budget, suggesting that consumers may view personal- and gift-budgets in a divergent way. In other words, personal-budgets beget a goal to spend and emerge "less than" the budget, whereas gift-budgets beget a goal to spend and emerge "equal to" the budget. This implies two corollary hypotheses that we test as well.

First, when a budget contains slack, consumers will spend more on gift- than personal-purchases (in order to meet the budget-goal—i.e., maximize the budget); however, when a budget has been depleted, then consumers will not engage in further spending for either gift- or personal-purchases (because the budget has been maximized). Second, when consumers have no

budget, then logically they have no respective budget-minimizing or -maximizing goals; therefore, consumers' spending on gift- and personal-purchases will be roughly the same, all things equal. Formally, we hypothesize:

H3: When there is slack in the budget, consumers will increase their spending more for gift-purchases than for personal-purchases.

H4: When there is no budget, consumers' gift-purchase spending will be similar to their personal-purchase spending.

With our research, we make contributions to the separate literatures on mental accounting, gift-giving, and self-other biases. First, we draw a novel connection between budgeting and gift-giving. Although there is extensive prior research on how mental budgets impact purchases made for the self, there is far less research on mental budgets that are specifically set for others as gifts. By linking these literatures, we find that consumers possess divergent perceptions of budgets—as goals to spend under, or as goals to spend in whole. Thus, while prior studies in mental budgeting typically consider mental budgets to be a tool to curb spending and enhance self-control (Heath and Soll 1996; Krishnamurthy and Prokopec 2010), we provide a new perspective whereby a mental budget is perceived as a spending amount that consumers aim to maximize.

In addition, while the majority of work on gift-giving examines the discrepancies between what givers like to give and what receivers like to receive, we focus on a practical input that leads givers to choose differently for others than for themselves—the consumers' budget—and how the mental perception of a budget predicts how much consumers decide to spend on others. This research complements previous work suggesting that mind-sets and emotions alter

the choices that people make as gifts compared with making a personal choice (Baskin et al. 2014; De Hooge 2014, 2017).

Finally, findings in this research provide further evidence of self-other biases in consumer behavior. Related research has found that compared to themselves, consumers believe others are willing to pay more for products (Frederick 2012), seek more product variety (Ratner and Kahn 2002), buy fewer products with their money (Polman, Effron, and Thomas 2018), are more emotionally affected by products and experiences (Jung, Moon, and Nelson 2020), and consider performance-enhancing products as a natural enabler of their own abilities, but an unfair embellishment of other people's abilities (Williams and Steffel 2014). It is thought that self-other differences in perception will affect self-other differences in decision making (Polman and Wu 2020). Consistent with this view, we find an asymmetry in budget-perceptions for purchases for the self and others, which has the downstream effect of shaping the spending choices people make for the self and others.

3.3. Overview of Studies

We present seven studies that support our hypotheses. Study 1 explored participants' perceptions of personal-budgets and gift-budgets. Providing evidence for hypothesis 1, this study showed that participants consider personal-budgets as an amount that they aim to spend under, whereas they consider gift-budgets as an amount that they aim to spend in whole. Study 2 demonstrated that participants prefer to choose below-budget items for personal-purchases, whereas they prefer to choose at-budget items for gift-purchases. We also provided support for hypothesis 2 in study 2—we showed that gift-purchasers have weaker savings goals than personal-purchasers, and this difference mediates the effect on participants' budget (minimizing

versus maximizing) perceptions. Studies 3 and 4 investigated downstream consequences of possessing divergent perceptions of personal- versus gift-budgets, testing hypotheses 3 and 4. In study 3, we found that when there is slack in the budget, participants are more willing to add to their purchase (by buying another item) when making gift- than personal-purchases. We likewise found that this effect was mediated by a decreased focus on savings goals when making gift-purchases as compared to self-purchases (evidencing more support for hypothesis 2). In study 4, we explored the role of budget-explicitness, and showed that the distinct effect of personal- versus gift-budgets on respective spending is mitigated when no budget is present. Study 5 built on the experimental design used in study 2 and found evidence suggesting that compared to other explanations, savings goal salience is the dominant process underlying these divergent budget perceptions. In study 6, we manipulated the purchase type (e.g., buying a gift vs. purchasing for someone else) and found that people spend more of their budget for others than for the self, and that this pattern of behavior was amplified when buying gifts. Finally, study 7 investigated the effect of personal- versus gift-budgets in a real spending context. We found that consumers were more likely to spend the full amount of their budget when purchasing a gift; in contrast, we found that consumers spent significantly less than their budget when purchasing for themselves.

3.4. Study 1: Divergent Budget Perceptions

We proposed that consumers perceive personal-budgets as an amount that they aim to spend under, and gift-budgets as an amount that they aim to spend in whole (hypothesis 1). In this study, we test for these divergent perceptions in an open-ended fashion. We asked participants to share their thoughts on personal- and gift-budgets and coded them according to

whether participants treat these budgets as goals that they would like to minimize (by aiming to spend less than the budget) or to maximize (by aiming to spend the entirety of the budget).

Method

We recruited 303 undergraduate students who participated in exchange for partial course credit (70.3% female, M_{age} = 20.75, SD = 2.69). In a two-condition (personal- vs. gift-purchase) within-subjects design, we asked participants to recall two recent purchases: one that they budgeted for themselves (personal-purchase) and another they budgeted for a gift (gift-purchase) in a counter-balanced order. For both types of purchases, we asked participants: what item they purchased, the amount they budgeted, and the amount spent on the purchase. Next, we assessed our dependent variable; we asked participants to freely write down what comes to mind when they think of (1) budgeting for a personal-purchase and, separately, (2) budgeting for a gift-purchase (we counterbalanced the order in which participants described their personal- and gift-purchases).

We hired two independent coders blind to the research hypothesis to code participants' responses. Specifically, we assessed whether participants indicated a preference to "spend less than their budget" (coded as 0) or a preference to "spend around their budget or the exact amount of their budget" (coded as 1). Of the 606 responses that we received, 58 were deemed irrelevant and could not be coded (examples include, "it depends on the shoes that I am buying;" "budgeting is preparing yourself financially for the amount of the object"). This rendered 274 responses per condition. Of these 274 responses, the coders agreed in equal degrees per condition: 88.3% in the personal-purchase condition, and 88.7% in the gift-purchase condition.

We analyzed the responses in which there was coder agreement, netting a final sample of 224 responses per condition.

Results

Preliminary observations regarding items purchased. Although our primary interest was in understanding how budget perceptions differed depending on whether the product was a gift versus a personal purchase, we first explored whether there were differences in the type of products that people budgeted for. Most of the items were material goods, and the proportion of experiential items for each purchase-type was not significantly different. For personal-purchases, there were small items such as a pair of shoes, laptop case, clothing, and also large items such as electronic devices, camera, and jewelry. Similarly, for gift-purchases, participants indicated small purchases, such as shoes, clothes, and home décor as well as large purchases, such as jewelry and wristwatches. Personal-purchases were more likely to include electronic devices and fashion items (e.g., shoes, clothes), while gift-purchases were more likely to include jewelry, accessories and home décor items (e.g., candles, picture frames; see appendix B1 for more details).

Preliminary observations regarding amount spent and budgeted. The average amount budgeted for personal-purchases was significantly greater ($M_{personal}$ = 531.89, SD = 1583.04) than the average amount budgeted for gift-purchases (M_{gift} = 126.54, SD = 160.53), $t(223) = 3.83$, $p < .001$. Relatedly, the average amount spent for personal-purchases was also greater ($M_{personal}$ = 491.91, SD = 1503.99) than the average amount spent for gift-purchases (M_{gift} = 118.07, SD = 150.15), $t(223) = 3.72$, $p < .001$.

Main analyses regarding budget perceptions. Our primary interest for this study was in understanding how budget perceptions differed for personal- and gift-purchases. We found that for personal-purchases, more participants indicated a preference to spend less than their budget (72.8%; 163/224) than to spend around their budget (27.2%; 61/224). These results flipped among gift-purchases; when buying gifts, more participants indicated a preference to spend around their budget (70.1%; 157/224) than to spend less than their budget (29.9%; 67/224), χ^2 (3) = 165.21, $p < .001$. Thus, in a relatively strong way—the effect sizes (risk ratios) are 2.43 and 2.57, respectively—we found that for personal-purchases, the goal of spending below a budget was nearly 2.5 times more common than the goal of spending around the budget; and vice versa for gift-purchases, the goal of spending around the budget was nearly 2.5 times more common than the goal of spending less than the budget.

Discussion

The results of study 1 provide evidence that people have divergent perceptions of budgets for personal-purchases as compared to gift-purchases, supporting hypothesis 1. By coding participants' thoughts about budgets, we found that participants want to spend less than their budgets for personal-purchases and spend around all of their budgets for gift-purchases. These divergent perceptions are akin to possessing budget-minimizing and budget-maximizing goals. Of import, we found evidence of this difference in an open-ended format with a content-analysis of participants' thoughts. We observed that over 70% of coded responses indicated that a personal-purchase budget represents a spending-amount that they should spend less of. In contrast, for a gift-purchasing budget, over 70% of coded responses indicated that the budget represents a spending-amount that they should spend roughly all of. It is encouraging that we see

evidence for our prediction in an open-ended way, using a bottom-up approach. The following studies test the personal- versus gift-budget difference with more procedural control, by manipulating and holding constant the price of purchases and budget-amounts.

3.5. Study 2: Personal- and Gift-Purchase Choice and Goals

Whereas in study 1, we examined participants' open-ended responses to how they treat personal- and gift-purchase budgets, in study 2 we examined what choice participants make between a below-budget item and an at-budget item. In line with hypothesis 1, we predict that gift-purchasing participants would prefer to choose an at-budget item, whereas personal-purchasing participants would prefer to choose an under-budget item. In study 2, we also test hypothesis 2 by directly measuring the prevalence of participants' savings goals and assessing the process. We predict that savings goals will be weaker among participants who make gift-purchases than among participants who make personal-purchases and that this difference will mediate the effect of purchase-type on participants' likelihood to choose between the below-budget and at-budget items (hypothesis 2).

Method

We recruited 353 participants from Amazon Mechanical Turk (MTurk; 48.4% female, M_{age} = 38.79, SD = 11.89). We randomly assigned participants to one of two conditions and asked them to imagine that they were making a personal-purchase for themselves or a purchase for others as a gift. We told participants in the personal-purchase condition that they had recently moved to a new place and decided to set aside $100 to buy something for their new kitchen. In contrast, we told participants in the gift-purchase condition that their friend had recently moved

to a new place and decided to set aside $100 to buy a housewarming gift for their friend. We asked all participants to imagine that they decided to buy a coffee maker. As a manipulation check, participants were asked to recall the budget and item described in the scenario. Next, participants indicated their likelihood to choose between two coffee makers—Model A for $85 versus Model B for $100—from 1 (*very likely to choose Model A and pay $85*) to 8 (*very likely to choose Model B and pay $100*).

Next, to examine the role of savings goals, we measured participants' focus on savings goals using a six-item measure (adapted from Peetz and Buehler 2013). We asked participants to recall their choice between the $85 and $100 coffee makers, and to rate the extent to which they made a decision that enables them to save appropriately; maximize their savings; save as much as they can; spend appropriately; maximize their spending; and spend as much as they can. Participants responded to each item from 1 (*strongly disagree*) to 7 (*strongly agree*). We reverse-scored the last three items and averaged the responses of all six items to create a single measure of focus on savings goals ($\alpha = .695$).

Twenty-four participants failed to answer the manipulation check correctly, and were excluded from the analyses, rendering a final sample of 329 participants. The results are statistically indistinguishable from analyses that include the participants who failed the attention check.

Results

As predicted, participants in the gift-purchase condition showed a significantly greater likelihood to choose the $100 (at-budget) coffee maker ($M = 4.25$, $SD = 2.32$) than did participants in the personal-purchase condition ($M = 3.51$, $SD = 2.17$), $t(327) = 2.99$, $p = .003$, d

= .329. This shows again support for hypothesis 1; personal-purchasing participants preferred to spend an amount less than their budget, and gift-purchasing participants preferred to spend an amount equal to their budget.

In a separate test, we also found support for hypothesis 2; participants in the personal-purchase condition focused significantly more on savings goals (M = 4.68, SD = 1.05) than participants in the gift-purchase condition (M = 4.29, SD = 1.21), $t(327) = 3.09$, $p = .002$, d = .344. In light of these results, we sought to examine whether the difference in savings goals might account for the difference in purchase-type on participants' likelihood to choose between the below-budget and at-budget product. We constructed a mediation model (Hayes 2017; model 4), and tested whether savings goals account for the relationship between purchase-type and likelihood to make a below-budget versus at-budget product purchase. Using a bootstrapping procedure, five thousand repeated random samples were taken from the data to compute the indirect effect. We found that the relation between purchase-type and likelihood to choose between the below-budget and at-budget product-purchase was mediated by savings goals, b = .52, SE = .16, 95% CI: [.19, .83] (see appendix B2 for full results).

Discussion

In study 2, we found that compared to purchasing for the self, purchasing a gift renders a greater likelihood to choose a product that depletes the budget. This supports hypothesis 1, which predicts that consumers perceive gift-budgets as a maximizing-goal and personal-budgets as a minimizing-goal. We also found evidence in study 2 in support of the proposed process (hypothesis 2); shopping for a gift led participants to focus less on savings, which in turn increased participants' likelihood to spend more of the money they had budgeted.

3.6. Study 3: Purchase Add-on

So far, we have unlocked evidence for hypotheses 1 and 2. However, there is an alternative explanation for our effects: Consumers may make more extravagant or less frugal purchases when buying gifts for others than when buying for themselves. Which is to say that regardless of the budget-amount, consumers may simply spend more on others than on themselves. This is because price is often assumed to have a positive relationship with quality, and consumers may be reluctant to give a gift that could appear low in quality. To address this possibility, study 3 examines whether willingness to pay for an additional item changes depending on how much of a budget has already been spent. While judging an identical product with the same original price, we expect gift-purchasing consumers to show a higher willingness to pay for an additional item when the gift purchase is currently under the budget. If consumers are generally more extravagant and spendthrifty for others than for themselves, or they prefer to give a more expensive gift because they infer product quality from price, then we should see that regardless of whether a current purchase-amount is under-budget or at-budget, consumers will spend more on others. However, if we find that consumers only spend more on gifts (vs. personal-purchases) when they are currently under-budget, then it would appear as though budget perceptions occupy an important role between personal- and gift-purchases. That is, the extravagance that consumers furnish to others may be moderated by their budget perceptions, such that when there is slack in the budget, consumers will spend more on others than on themselves—in an attempt to spend their budget in its entirety. It follows then that when there is no slack in the budget (when the budget-amount has been spent), there may not be any favoring of others over the self, because consumers have satisfied their maximizing-goal, spending their budget in its entirety. In sum, in study 3, we test hypothesis 3 and predict that when there is slack

in the budget (vs. no slack), gift-purchasing participants would show higher willingness-to-pay (WTP) for adding an item to their purchase than would personal-purchasing participants. Furthermore, we test hypothesis 2 again, that the divergent WTP for an add-on item (a measure of budget-minimizing and -maximizing) would be mediated by participants' focus on savings goals.

Method

We recruited 334 undergraduate participants in exchange for partial course credit (40.4% female, M_{age} = 20.95, SD = 1.78). We asked participants to imagine that they had set a $30 budget to buy a school sweatshirt for either themselves or for their roommate's graduation gift. As a manipulation check, participants were asked to recall the budget and item described in the scenario. As a separate experimental factor, we randomly assigned participants to a condition designed to manipulate slack in the budget: One condition indicated that the sweatshirt was on sale for $23.99 (leaving $6 remaining in their $30 budget), whereas the other condition indicated that the sweatshirt was selling for $29.99 (leaving $0 remaining in their $30 budget).[2] In all conditions, participants read that the store clerk recommended a coffee mug to buy along with

[2] We conducted a pre-test (N = 294) to assess quality perceptions in order to ensure that our results could not be explained solely by differences in perceived quality of the discounted and regular price sweatshirt. Our pre-test used a 2 (purchase-type: personal vs. gift) × 2 (budgetary slack: slack vs. no-slack) between-subjects design. Participants in each condition read the scenario used in the experiment and rated the expected quality of the sweatshirt using a four-item measure (adopted from Kirmani and Wright 1989, and Stone-Romero, Stone, and Grewal 1997; α = .913) on a seven-point scale (1 = *low quality*, 7 = *high quality*). Neither the main effect of purchase-type (M_{self} = 5.36, SD_{self} = 1.08, M_{gift} = 5.33, SD_{gift} = 1.03, F(1, 290) = .054, p = .817), nor the main effect of budget-slack ($M_{\text{no-budget-slack}}$ = 5.43, SD = 1.04, $M_{\text{budget-slack}}$ = 5.26, SD = 1.06, F(1, 290) = 1.92, p = .167), nor the interaction between purchase-type and budget-slack were significant (F(1, 290) = 1.48, p = .228). This suggests that the perceived quality of the sweatshirt did not differ between conditions.

the sweatshirt. We asked participants to report their WTP for the mug on a slider scale with dollar values from $0 to $15.

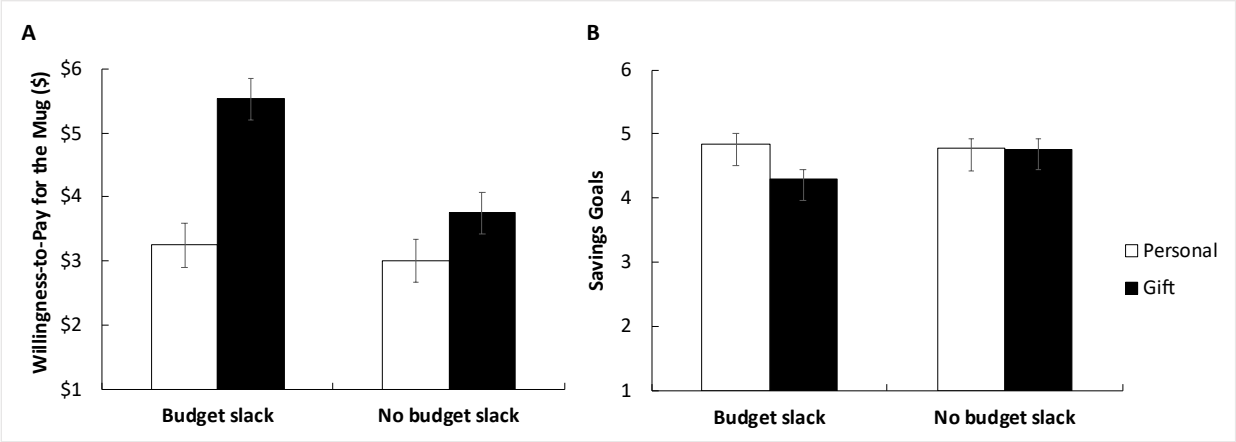
Finally, participants were asked to recall their WTP for the mug and to rate the extent to which they were focused on savings goals using the same six-item measure from study 2. Twelve participants failed to answer the manipulation check correctly, and were excluded from the analyses, rendering a final sample of 322 participants. The results are statistically indistinguishable from analyses that include the participants who failed the attention check.

Results

We conducted a 2 (purchase-type: personal vs. gift) × 2 (budget: slack vs. no-slack) ANOVA on WTP which revealed significant main effects of purchase-type and budget-slack. The WTP for the mug was higher among gift-purchasing participants (M = $4.64, SD = 3.18) than among personal-purchasing participants (M = $3.14, SD = 2.75), $F(1,318) = 21.79$, $p < .001$, $d = .505$. Moreover, participants were willing to pay more for the mug when there was slack in the budget (M = $4.34, SD = 2.87) than when there was no slack in the budget (M =$3.40, SD = 3.19), $F(1,318) = 9.59$, $p = .002$, $d = .310$. Of import, the interaction was significant, $F(1,318) = 5.64$, $p = .018$, partial $\eta^2 = .017$ (see figure 6A). When there was slack in the budget, gift-purchasing participants indicated a higher WTP for the add-on mug (M = $5.53, SD = 2.74) than personal-purchasing participants (M = $3.25, SD = 2.54), $F(1,318) = 25.76$, $p < .001$, $d = .863$. However, when there was no slack in the budget, WTP for the add-on mug was similar between purchases intended as a gift (M = $3.76, SD = 3.35) or for the self (M = 3.01, SD = 2.98), $F(1,318) = 2.53$, $p = .112$. This shows that participants buy more for others than for themselves when they are short of spending their budget, but not more generally, such as when they have

spent all of their budget (as in the no-slack condition). This is consistent with hypothesis 1, and the budget-minimizing and -maximizing goals that consumers have when making personal- and gift-purchases, respectively.

Figure 6. Moderating Role of Budgetary Slack (Study 3)



Note – The gift-personal differences in WTP were significant in the budget slack condition, but not significantly different in the no budget slack condition (panel A). The focus on savings goals was significantly lower in the budget slack condition, but not significantly different in the no budget slack condition (panel B).

In more support, we compared the final amount that personal- and gift-purchasing participants spent by adding the discounted-price of the sweatshirt ($23.99) to the price that participants indicated they would be willing to pay for the mug. For participants in the slack condition, the total amount that personal-purchasing participants indicated that they would spend was significantly lower ($27.24) than the $30 budget, $t(86) = 10.16$, $p < .001$ (consistent with a budget-minimizing goal), whereas the total amount that gift-purchasing participants indicated that they would spend was not significantly different ($29.52) from the $30 budget, $t(79) = 1.56$, $p = .123$ (consistent with a budget-maximizing goal). These results show again that personal-purchasing participants seek to spend less than their budgets, yet gift-purchasing participants seek to spend just enough money to meet their budgets. For participants in the no-slack condition, the total spending amounts indicated by participants was significantly

indistinguishable between personal- and gift-purchasing participants, indicating that participants did not generally spend more money on others than on themselves.

Next, we tested a 2 (purchase-type: personal vs. gift) × 2 (budget: slack vs. no-slack) ANOVA on savings goals which revealed a significant main effect of purchase-type. The focus on savings goals was higher among personal-purchasing participants (M = 4.81, SD = 1.11) than among gift-purchasing participants (M = 4.53, SD = .87), $F(1,318) = 6.37$, $p = .012$, $d = .281$. The ANOVA also revealed a significant interaction between purchase-type and budget-slack, $F(1,318) = 5.99$, $p = .015$, partial $\eta^2 = 0.019$ (see figure 6B). In lockstep with the WTP results, we found that when there was slack in the budget, gift-purchasing participants indicated that they focused less on savings goals (M = 4.29, SD = .86) than personal-purchasing participants (M = 4.84, SD = 1.17), $F(1,318) = 12.84$, $p < .001$, $d = .536$. However, when there was no slack in the budget, focus on savings goals was similar between purchases intended as a gift (M = 4.76, SD = .82) and for the self (M = 4.77, SD = 1.03), $F(1,318) = .003$, $p = .958$.

Finally, we tested whether savings goals might account for the difference in purchase-type on participants' WTP, with budget-slack as a moderating variable. We constructed a moderated mediation model (Hayes 2017; model 8), and tested whether savings goals focus mediates the relationship between purchase-type and WTP, in separate conditions with budget-slack versus no-slack. Using a bootstrapping procedure, five thousand repeated random samples were taken from the data to compute the moderated-mediated indirect effect, b =.64, SE = 0.28, 95% CI: [.11, 1.24]. Specifically, we found that the relation between purchase-type and WTP was mediated by savings goals when there was budget-slack, b =.65, SE =.21, 95% CI: [.25, 1.09], but not when there was no budget-slack, b =.01, SE =.18, 95% CI: [-.36, .36] (see appendix B3 for full results).

Discussion

Study 3 demonstrated that when there is slack in the budget, participants were more willing to spend the remaining slack, provided the budget was for a gift-purchase than for a personal-purchase. Importantly, we did not find that participants were, in general, willing to spend more money on gift-purchases than on personal-purchases. That is, when there was no slack in the budget, we found that participants spent just as much on others as they did on themselves. This suggests that our results are not due merely to participants preferring to spend more money or buy more expensive products on gift-purchases than on personal-purchases. Furthermore, consistent with study 2, we found once more that the difference in spending between the gift- and personal-purchase conditions was mediated by the extent that participants focused on savings—a focus that was more prevalent among personal-purchasing participants.

3.7. Study 4: Budget Explicitness

As noted, a budget is often a reference point for spending decisions, and explicit budgets are often accompanied by consumption goals. Prior research (Stilley, Inman, and Wakefield 2010) suggests that consumers may have a budget that is explicit (i.e., a specific reference point or a particular number, such as "$50" that has been written down), or they may have a budget that is implicit (i.e., a rough idea of what they intend to spend, such as "around $50"). To further test the role of budgeting in our effect for personal- versus gift-purchases, study 4 varied the explicitness of the budget at three different levels (explicit-, implicit-, and absent-budget). We predicted that the spending between gift-purchases and personal-purchases would be different

when budget is either explicitly or implicitly given, but when the budget is completely absent, gift-purchase spending will be similar to personal-purchase spending (hypothesis 4).

Method

In study 4, we employed a similar design to study 3, but varied the explicitness of the budget at three different levels: explicit- vs. implicit- vs. absent-budget. We pre-registered this study[3] for 1000 participants on Mturk, and a total of 1002 participants completed the study (46.9% female, M_{age} = 39.01, SD = 12.75). We asked participants to imagine that they plan to buy something for themselves or for a friend's birthday gift. According to their condition, participants read that they "set a budget of $50 for this purchase" (explicit-budget condition), or "were considering spending around $50" (implicit-budget condition; this manipulation is consistent with prior literature that conceptualizes an implicit budget as a spending consideration; Stilley, Inman, and Wakefield 2010). For participants in the absent-budget condition, we provided no information related to a budget (see appendix B4 for study stimuli). As a manipulation check, participants were asked to recall the budget (only for those in the explicit and implicit conditions) and item described in the scenario.

Next, we asked all participants to imagine that as the weather gets cold, they have decided to buy a fleece sweatshirt for themselves or for a birthday gift. Then, participants were told that the price of the sweatshirt they were interested in buying is $40. Finally, like study 3, we indicated to participants that the store clerk recommended a 3-pack of fleece socks to buy

[3] The pre-registration details are available here: https://aspredicted.org/blind.php?x=g2er3x

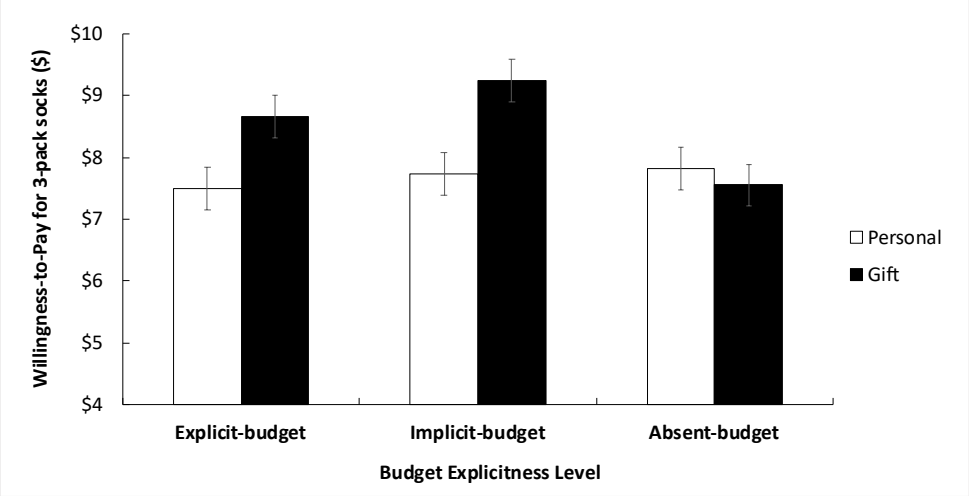
along with the sweatshirt. We asked participants to indicate their WTP for the socks on a slider scale with dollar values ranging from $0 to $20.

Forty-eight participants failed to answer the manipulation check correctly, and were excluded from the analyses, rendering a final sample of 954 participants. The results are statistically indistinguishable from analyses that include the participants who failed the attention check.

Results

We conducted a 2 (purchase-type: personal vs. gift) × 3 (budget explicitness: explicit vs. implicit vs. absent) ANOVA on WTP, which revealed a significant main effect of purchase-type (see figure 7). The WTP for the socks was higher among gift-purchasing participants (M = $8.47, SD = 4.36) than among personal-purchasing participants (M = $7.69, SD = 4.38), $F(1,948)$ = 8.15, p = .004, d = .180. As predicted, the interaction was significant, $F(2,948) = 3.77$, p = .023, partial η^2 = .008. When the budget was explicitly or implicitly presented, participants indicated they would spend more money on a gift-purchase than a personal-purchase. Specifically, when the budget was explicit, WTP for the socks was higher for gift-purchases (M = $8.67, SD = 4.05) than personal-purchases (M = $7.51, SD = 4.07), $t(948) = 2.39$, p = .017, d = .286. When the budget was implicit, WTP for the socks was likewise higher for gift-purchases (M = $9.25, SD = 3.98) than personal-purchases (M = $7.73, SD = 4.21), $t(948) = 3.09$, p = .002, d = .371. However, when the budget was absent, WTP for the socks was similar between purchases intended as a gift (M = $7.85, SD = 4.99) and for the self (M = $8.10, SD = 4.99), $t(948) = .56$, p = .579. These results provide evidence of hypothesis 4; the spending difference between personal- and gift-purchases was mitigated for absent budgets.

Figure 7. Moderating Role of Budget Explicitness (Study 4)



Note – Bars indicate ratings of WTP for the add-on gift (socks). The gift-personal differences in WTP were significant when budget was explicitly or implicitly presented. The gift-personal difference in WTP was not significant when budget was absent.

Discussion

Study 4 demonstrates that the effect of budget-maximizing for gift-purchases occurs when a budget is either explicit or implicit. For gift-purchases that are below the budget, participants report greater WTP for an add-on item than they report for personal-purchases that are similarly below the budget. Again, this shows that when shopping for gifts, participants attempt to spend their budgets in full. This is in contrast to shopping for personal items, whereby participants appear to prefer to spend under their budgets. Logically, these differences are attenuated when participants have no budget. With no budget, it follows that there is no divergent minimizing or maximizing perception thereto.

3.8. Study 5: Multiple Processes

We have thus far found differences in spending for personal- versus gift-purchases and

identified the prevalence of savings goals as an underlying mechanism. In order to explore other potential mechanisms that affect the divergent meanings attached to personal- and gift-budgets, we conducted study 5 to assess other factors that could potentially explain the budget-maximizing (vs. minimizing) tendencies among gift- (vs. personal) purchasers.

Method

We recruited 403 participants from MTurk (45.4% female, M_{age} = 38.95, SD = 12.31) and conducted a two-condition (personal vs. gift-purchase) between-subjects test. Participants read the same vignette from study 2 and were asked to indicate their likelihood to choose an under-budget versus at-budget coffee machine. As a manipulation check, participants were asked to recall the budget of the purchase, the item, and whom the purchase was for as described in the scenario. To capture the role of other potential explanations for the personal- versus gift-budget difference in choice for the coffee makers, we asked participants to rate the extent to which each factor (i.e., savings goals, preference uncertainty, focus on price vs. product, perceived ownership of money, guilt, impression management, consideration of others' worth, and specialness, see table 6 for measures) related to their choice for the coffee makers, using a seven-point Likert scale, in a randomized order. These factors were chosen based on their documented effects on gift choices in the literature; as such, these motives may play a role in people gift-budget perceptions as well.

Twenty-eight participants failed to answer the manipulation check correctly and were excluded from the analyses, rendering a final sample of 375 participants. The results are statistically indistinguishable from analyses that include the participants who failed the attention check.

Table 6. Measures Used in Study 5

Explanations	Questions
Savings goals	6-item scale used in study 2
Preference uncertainty	To what extent do you feel certain that you (vs. your friend) will like the coffee machine you chose? (1 = not certain at all, 7 = extremely certain)
Focus on price (vs. product)	To what extent were you thinking about *which coffee machine to get* versus *how much to spend?* (1 = totally thinking about which product to get, 7 = totally thinking about how much to spend)
Perceived ownership of money	I feel like the $100 budgeted money for this purchase belongs to me. (1 = do not agree at all, 7 = strongly agree)
Guilt	When I was deciding which coffee machine to get, I would have felt guilty if I didn't spend the full $100 budget. (1 = do not agree at all, 7 = strongly agree)
Impression management	When I was deciding which coffee machine to get, I considered how others would perceive me based on my choice. (1 = do not agree at all, 7 = strongly agree)
Consideration of others' worth	When I was deciding which coffee machine to choose, I considered whether I (vs. my friend) 1) am (vs. is) worth, and 2) deserve(s) it. (1 = do not agree at all, 7 = strongly agree)
Specialness	Please rate how exceptional you consider this purchase to be. (1 = not special at all, 7 = extremely special)

Results

Replicating our findings in study 2, participants in the gift-purchase condition showed a significantly greater preference for the $100 (at-budget) coffee maker (M = 4.34, SD = 2.37) than did participants in the personal-purchase condition (M = 3.67, SD = 2.23), $t(373) = 2.83$, p = .005, d = .292. We also found that participants in the personal-purchase condition focused significantly more on savings goals (M = 4.65, SD = 1.12) than participants in the gift-purchase condition (M = 4.11, SD = 1.22), $t(373) = 4.46$, $p < .001$, d = .461.

Other Potential Explanations. We found a significant difference for each explanation between conditions. Compared with making personal-purchase, participants making gift-purchases reported greater uncertainty in preference, lower focus on price, lower perceived

ownership of money, greater feelings of guilt (if prioritizing themselves and not spending the full amount), greater consideration of their impression on others, greater consideration about others' worth, and greater perceived specialness (see table 7 for details).

Table 7. Comparison between Personal- and Gift-Budgets (Study 3)

	Purchase Type				Gift – Personal Difference
	Personal		Gift		
Outcome variables	*M*	*SD*	*M*	*SD*	*t*-statistic
Likelihood-to-choose at-budget product	3.67	2.23	4.34	2.37	2.83**
Savings goals	4.65	1.12	4.11	1.22	-4.46***
Preference uncertainty	5.58	1.16	5.91	0.98	-2.99**
Focus on price (vs. product)	4.65	1.80	4.18	2.09	-2.24*
Perceived ownership of money	5.97	1.39	5.17	1.79	4.86***
Guilt	2.34	1.91	2.96	2.17	2.93**
Impression management	2.55	2.05	3.38	2.14	3.84***
Consideration of others' worth	3.59	1.98	4.04	2.06	2.17*
Specialness	4.71	1.67	5.44	1.32	4.70***

* p <.05
** p <.01
*** p <.001, two-tailed *t*-test.

Multiple-Step Mediation Analyses. We followed four steps to assess the role each explanation might have in people's divergent personal-gift budget perceptions. In step 1, we ran eight separate single mediation models using these eight explanations. We identified four explanations that significantly mediated the effect of personal- and gift-budget on choice. In step 2, we compared the four explanations in a parallel mediation and compared the indirect effects with each other. We found participants' focus on savings goals had the strongest effect of the four explanations. In step 3, we tested the indirect effect of savings goals as a significant mediator while controlling for the remaining three explanations. We found that savings goals remained significant. In step 4, we further examined the relationship between the three remaining explanations and the savings goals explanation, by conducting serial-chain mediations.

Step 1. Single Mediation Models. As the first step, we examined the mediating role of the eight potential drivers to explain the relationship between purchase-type and spending by running eight separate mediation analyses (Hayes 2017; model 4, using 5,000 bootstrapped samples). Because we conducted eight separate tests, we adjusted the conventional alpha level (.05) to .006 (.05/8). We found that savings goals, guilt, impression management and specialness were significant factors that mediated the effect of purchase-type on participants' choice (see table 8 for indirect effects, appendix B5 for details). Among these explanations, we compared the standardized coefficient estimates and found that focus on savings goals had the strongest mediating effect on the relation between purchase-type (personal- vs. gift-purchase) on choice.

Table 8. Mediation Analysis (Study 5)

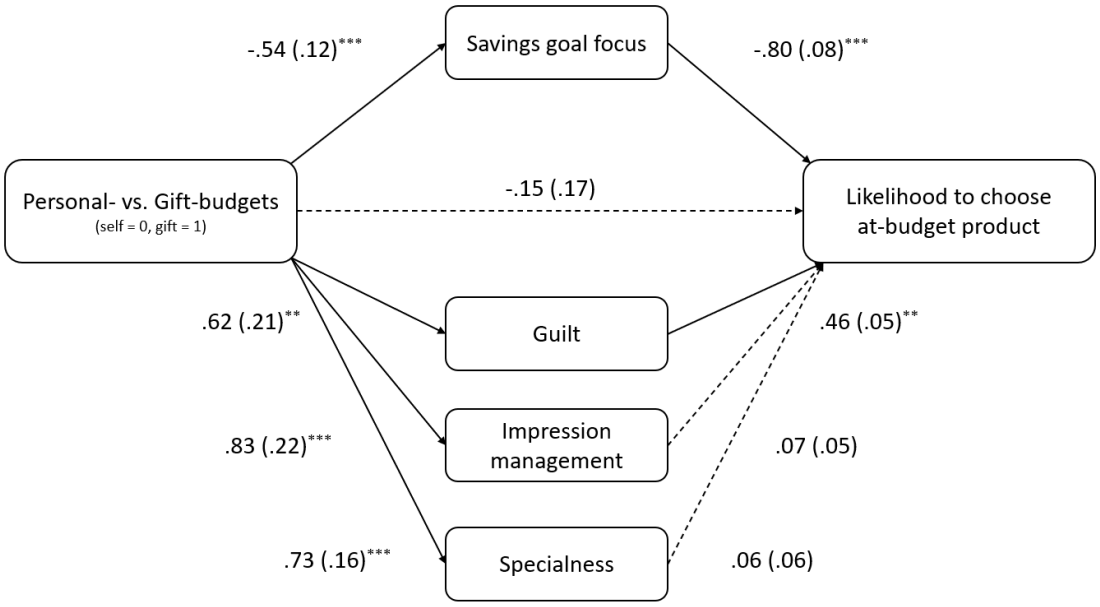
	Indirect Effect Estimates		CI†	
Outcome variables	*b*	β	LL	UL
Savings goals*	.635 (.141)	.274 (.061)	.255	1.024
Preference uncertainty	.048 (.039)	.021 (.017)	-.055	.183
Focus on price (vs. product)	.099 (.054)	.043 (.023)	-.019	.296
Perceived ownership of money	.011 (.065)	.005 (.028)	-.176	.210
Guilt*	.438 (.152)	.189 (.066)	.021	.912
Impression management*	.382 (.112)	.165 (.047)	.114	.729
Consideration of others' worth	.175 (.085)	.076 (.037)	-.046	.433
Specialness*	.237 (.078)	.102 (.033)	.067	.476

† Note – The significance level α was adjusted to account for eight factors (.05/8). *b* indicates unstandardized coefficients, and β indicates standardized coefficients, and their standard error (SE) are in parentheses. LL is lower level, and UL is upper level of adjusted confidence interval.
* indicates significant indirect effects.

Step 2. Parallel Mediation Model. Next, we tested the indirect effects of the significant four factors (identified in Step 1) by entering in parallel as potential mediators of the personal- versus gift-budget difference effect (Hayes 2017; model 4, using 5,000 bootstrapped samples with the significance level α adjusted to account for four factors (.05/4)). We found a significant indirect effect of purchase-type on participants' choice of the below-budget versus at-budget item through savings goals (b = .43, SE = .10, CI: [.191, .714]). We also found that a significant

indirect effect through guilt (b = .28, SE = .12, CI: [.033 .576]), suggesting that when purchasing a gift, participants preferred the at-budget gift because they would feel guilty should they not spend the full budget amount. The indirect effects through impression management (b = .06, SE = .06, CI: [-.071, .230]) and specialness (b = .04, SE = .05, CI: [-.066, .170]) were not significant, indicating that these factors did not explain the relationship between purchase-type and choice for the at-budget product (see figure 8 and table 9 for details).

Figure 8. Parallel Mediation Analyses (Study 5)



* p <.05
** p <.01
*** p <.001

Table 9. Parallel Mediation Analyses (Study 5)

	Indirect Effect Estimates		CI†	
Explanations	*b*	β	LL	UL
Savings goals*	.433 (.100)	.187 (.043)	.191	.714
Guilt*	.283 (.108)	.122 (.047)	.033	.576
Impression management	.061 (.058)	.026 (.025)	-.071	.230
Specialness	.434 (.046)	.019 (.020)	-.066	.170

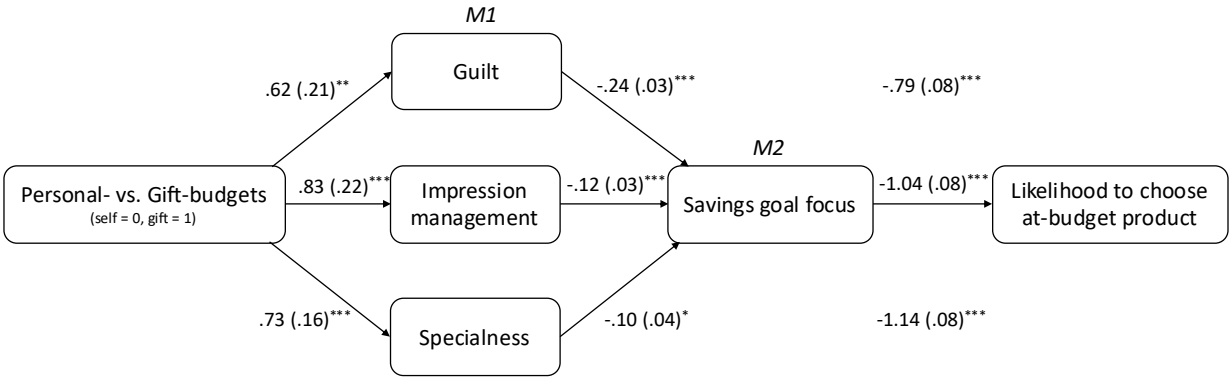
† Note – The significance level α was adjusted to account for eight factors (.05/4). B indicates unstandardized coefficients, and β indicates standardized coefficients, and their standard error (SE) are in parentheses. LL is lower level, and UL is upper level of adjusted confidence interval.
* indicates significant indirect effects.

Again, in a comparison among the standardized coefficients, focus on savings goals was highest, suggesting that savings goals are predominantly driving of the effect.

Step 3. Control Variables. To further confirm the role of savings goals in explaining the relationship between purchase-type and the choice for at-budget products, we tested a mediation model with savings goals as a mediator, and with guilt, impression management, and specialness as covariates (the three factors that rendered significant indirect effects in Step 1). We found that while controlling for these three factors, savings goals still mediated the effect of purchase-type on choice, b = .32, SE = .10, 95% CI: [.127, .513], providing more robust evidence that the savings goal focus is a strong and significant explanation.

Step 4. Serial Mediation Model. To better understand why the prevalence of savings goals is lower among gift-purchasers as compared to personal-purchasers, we examined a parallel two-mediation chain between purchase-type and choice. We tested the effect of purchase-type on choice with the three explanations located (in parallel) as the first mediator in the chain (M1) and with savings goals in place of the second mediator in the chain (M2; see figure 9, Hayes 2017; model 6 using 5,000 bootstrapped samples). The model rendered a significant set of pathways for each mediator and its serial combination with savings goals, with guilt (b = .12, SE = .04, 95% CI: [.040, .207]), with impression management (b = .11, SE = .04, 95% CI: [.044, .186]), and with specialness (b = .08, SE = .04, 95% CI: [.014, .160]). Results from this model shed light on why savings goals are lower among gift-purchasers. We can conclude that greater feelings of guilt, impression management, and perceived specialness are related to lower savings goals among gift-purchasers.

Figure 9. Serial Mediation Analyses (Study 5)



* p <.05
** p <.01
*** p <.001

Discussion

The findings in study 5 suggest that there are four explanations—savings goals, impression management, guilt, and specialness—that are relevant to explain the divergent budget-perceptions between personal- and gift-purchases. The results from multiple mediation analyses provide evidence that among those factors, focus on savings goals is the most dominant process explanation. Study 5 further suggests reasons why savings goals may be more salient for personal-purchases, because when it comes to gift-purchases, people feel guiltier prioritizing themselves over others; they are concerned with what others think of them; and they place the purchase in a more special category of purchases.

These results are suggestive that the divergent effect of personal- versus gift-budgets on spending may stem from two different dimensions. The difference can be driven by the characteristics related to making decisions for others (impression management and feelings of guilt). Likewise, the difference can be driven by characteristics related to making gift-choices

(specialness). To explore this distinction, we designed study 6 to manipulate each dimension separately and test our effect.

3.9. Study 6: Budgeting for a Gift vs. a Non-gift

Thus far, we have tested scenarios that compare personal- with gift-purchases, treating the former as decisions people make for themselves and the latter as gift-decision for others. This begs the question; would decisions people make for others differ from gift-decisions people make for others? And related, would gift-decisions made for others be treated like gift-decisions people make themselves? The goal of study 6 was to further investigate the effect of personal- versus gift-budgets by disentangling the separate effects of making personal versus interpersonal decisions (i.e., decisions people make for others), and making gift-decisions for the self versus gift-decision for others. Purchases made for other people are often gifts, but they can also be ordinary, non-gift purchases in the form of interpersonal decisions. For example, purchases for others could include everyday favors, such as purchasing a book for a child or picking up beer for a spouse (Liu, Dallas, and Fitzsimons 2019). Likewise, purchases made for gifts are often intended for other people, but they can also be intended for the self. Prior research on gift-giving shows that self-gifting is a prevalent consumer behavior when celebrating personal achievement or special events for oneself (Mick and DeMoss 1990). To distinguish these two dimensions, we designed a 2 (recipient: self vs. other) × 2 (purchase-occasion: gift vs. non-gift) study. Based on the results from study 5—which found that impression management and guilt are significant drivers of the self-other budgeting effect—we predicted a significant main effect of recipient such that people spend more of their budget for others than for themselves. Moreover, based on results from study 5—which also found that specialness is a significant driver of the self-other

budgeting effect—we predicted a main effect of purchase occasion such that people would spend more of their budget for gifts than non-gifts. Finally, we predicted a multiplicative effect such that people's proportion of budget spent is the highest when the purchase is both for others and is a gift.

Method

We recruited 509 undergraduate participants in exchange for partial course credit (53.8% female, M_{age} = 20.83, SD = 1.41). The study tested a 2 (recipient: self vs. other) × 2 (purchase-occasion: gift vs. non-gift) fully within-subjects design, with each condition presented in randomized order.

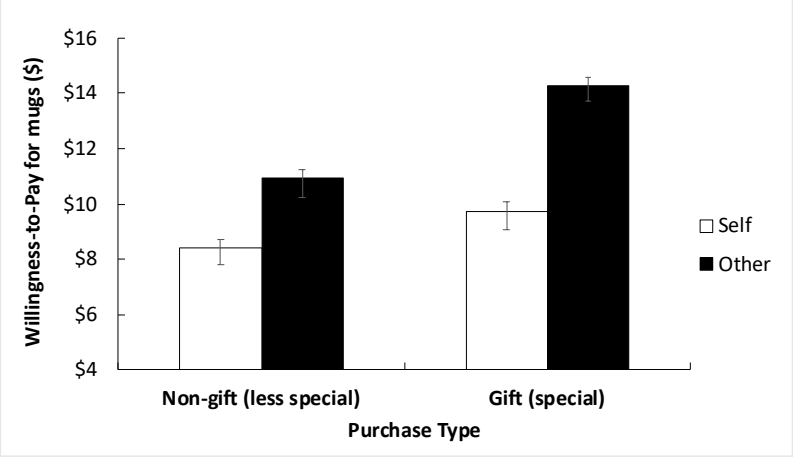
To manipulate the recipient, we asked participants to imagine that they had set a $100 budget to buy a coffee maker for either themselves (self) or for their mother (other). To manipulate the purchase-type, we told participants to imagine that they were purchasing the coffee maker as either a gift for themselves (vs. for their mother) or that they were purchasing the coffee maker because they (vs. their mother) needed one. As a manipulation check, participants were asked to recall the budget of the purchase, the item, and the recipient-type described in the scenario.

Next, we told participants that the coffee maker at the store was priced at $80, and asked them to indicate their WTP for an add-on pair of coffee mugs to buy with the coffee maker. Participants indicated their response on a slider scale with dollar values from $0 to $30. Six participants failed to answer the manipulation check correctly and were excluded from the analyses, rendering a final sample of 497 participants. The results are statistically indistinguishable from analyses that include the participants who failed the attention check.

Results

We conducted a 2 (recipient-type: self vs. other) × 2 (purchase-occasion: gift vs. non-gift) repeated-measures ANOVA on WTP which revealed significant main effects of both recipient-type and purchase-occasion. The WTP for the mug was higher among participants who were buying for others (M = \$12.55, SD = 6.92) than among participants who were buying for the self (M = \$9.06, SD = 6.63), $F(1, 496) = 167.29$, $p < .001$, partial $\eta^2 = .252$). We also found that the WTP for the mugs were higher among participants who were buying a gift (M = \$11.98, SD = 6.51) than among participants who were buying a non-gift (M =\$9.63, SD = 6.34), $F(1, 496) = 153.81$, $p < .001$, partial $\eta^2 = .237$). Of import, the interaction was significant, $F(1, 496) = 33.88$, $p < .001$, partial $\eta^2 = 0.064$, (see figure 10), suggesting that the effects were multiplicative. Specifically, we found that participants purchasing a gift for others indicated the highest WTP for the add-on mugs (M = \$14.24, SD = 7.49) compared with the other three conditions: a non-gift for others (M = \$10.86, SD = 7.66, $t(508) = 12.20$, $p = <.001$), a gift for the self (M = \$9.72, SD = 7.42, $t(508) = 14.91$, $p = <.001$), and a non-gift for the self (M = \$8.40, SD = 6.85, $t(508) = 18.92$, $p = <.001$.

Figure 10. Interaction between Recipient-Type and Purchase-Type (Study 6)



Discussion

Consistent with hypothesis 1, this study found that people were willing to spend more of their budgets when purchasing for others than purchasing for the self, especially when the purchase for others was a gift. We further explored the conditions that vary the degree to which consumers manage their impressions or experience feelings of guilt. When people are unsure what to buy for others, then they be concerned about they will be perceived by others, or they may feel guilty about having money leftover out of the budget (Denton and Rucker 2013). In a follow up study reported in appendix B6, we tested whether consumers max out their gift budget when recipient preferences are known. We found that even when gift-purchasers are certain about a particular item a gift-recipient wants, they still indicate a greater willingness to purchase an add-on product that maxes out the budget (see appendix B6 for details).

Collectively, the results from study 6 and the follow-up study demonstrate that the effect evidences regardless of whether a recipient's preferences are known or unknown, and holds especially for gift-choices for others in contrast to any choice people make for others (e.g., non-gift choices). The findings are consistent with the results from study 5; while feelings of guilt, impression management, and specialness may be relevant to explain the budget-maximizing behavior for gifts, we find that the effect holds even when these factors are not at play, validating support for the savings goal process.

3.10. Study 7: Real Shopping Context

In our previous studies, we have found that participants perceive gift-budgets differently from personal-budgets by testing hypothetical spending decisions of gift- and personal-purchases. In our final study, we conducted a field experiment using real spending decisions. In

this study, we supplied participants with $10 and asked them to buy a gift for a friend or buy something for themselves. Given the results to study 4, which showed that even an implicit budget results in divergent spending decisions for personal- and gift-purchases, we reasoned that our instructions to buy something with $10 would be likewise viewed as an implicit budget. Thus, in this study, we compared how much of the $10 endowment participants spent in each condition, with the prediction that personal-purchasing participants spend an amount that is significantly below $10, whereas gift-purchasing participants spend an amount equal to $10.

Method

We recruited 297 undergraduate participants to bring a friend to come in pairs, and randomly assigned them to a personal-purchase condition or a gift-purchase condition. We gave $10 with personalized instructions as shown below, asking participants to buy a gift for themselves (personal-purchase condition) or buy a gift for a friend (gift-purchase condition).

Personal-purchase condition:

Dear (participant's name),

Thank you for participating in the shopping study. Please use the $10 you pick up today to *buy a gift for yourself* within the following week. We will email you a short follow-up survey afterwards. Thank you!

Gift-purchase condition:

Dear (participant's name),

Thank you for participating in the shopping study. Please use the $10 you pick up today to *buy a gift for your friend* (friend's name) within the following week. We will email you a short follow-up survey afterwards. Thank you!

We let participants buy items in the form of a personal-purchase versus gift-purchase, and then we examined the effects of making such a purchase. Participants were allowed to keep the extra money. Afterwards, we ran a post-test[4] to make sure the instructions weren't misinterpreted. We followed up with participants one week later, and asked them what they had bought, and how much their purchase had cost.

Results

Preliminary analyses regarding purchases made. Most of the purchase items were material goods rather than experiential goods, and the proportion of experiential items did not differ significantly between condition. Participants purchased a variety of products, including snacks, coffee, water bottles, or cosmetic products, but most purchases were small items given the $10 budget. Personal-purchases were more likely to include food and beverages (e.g., candy, coffee), while gift-purchases were more likely to include home décor items (e.g., candles, picture frames, water bottle; see appendix B1 for more details).

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[4] We ran a post-test (N = 110) in which we randomly assigned participants from a similar population (undergraduate students) to either a gift- or personal-purchase condition. Participants read the exact same instructions that participants in the field study were given, and were asked to imagine themselves in that situation. They were asked: "to what extent would you feel that you failed the study instructions if you did not spend $10" in the study (*1 = definitely yes, 7 = definitely no*). Ratings did not differ between personal- and gift-conditions ($M_{personal}$= 3.91, SD = 1.98 vs. M_{gift} = 3.82, SD = 1.95, $t(108)$ = .242, p = .792), suggesting that participants would not did not spend more or less of their budgets based on a fear of violating study instructions.

Main analyses regarding amount of budget spent. Of import, we found that participants in the personal-purchase condition spent, on average, $8.80 (*SD* = 4.66). In contrast, participants in the gift-purchase condition spent, on average, $9.59 (*SD* = 4.48). We tested whether these amounts vary from the $10 endowment. In line with hypothesis 1, participants in the personal-purchase condition spent significantly less than their $10, $t(139) = 3.05$, $p = .003$; whereas in keeping with hypothesis 1, participants in the gift-purchase condition spent an amount that did not significantly differ from $10, $t(156) = 1.12$, $p = .267$. These results support the hypothesis that people prefer to spend the entirety of their budgets for gifts and prefer to spend less than their budgets for personal purchases.

Discussion

These results provide field evidence showing that gift-purchasing participants prefer to spend their entire budget when buying a gift, demonstrating that consumers have a budget-maximizing goal when buying gifts. In contrast, consumers prefer to spend less than their budget when making a personal-purchase, demonstrating that consumers have a budget-minimizing goal when spending money on themselves. It is noteworthy that we observe these effects in a case in which there is no established reciprocity nor gift-norm between givers and receivers. In our study, we asked participants to buy an ad hoc gift for a friend. In some gift-choice instances, there could be pressure to spend all of a budget (e.g., if it was agreed between people to spend $50 for a gift, then it could look cheap to spend less than $50). However, in our study, only one person was spontaneously buying a gift for another; therefore, there is no concern that a gift would have to "match" its value to any item gifted in a previous or present time.

Besides showing support for hypothesis 1 with a different dependent measure, a major benefit of study 7 is that we join a growing body of research that employs real shopping behaviors (e.g., Blair and Roese 2013; Chan and Mogilner 2017). This study allowed participants to make personal- and gift-purchases in a manner that is very similar to how people make purchase-choices ordinarily, in the "wild."

3.11. General Discussion

Across seven studies, we showed that consumers perceived budgets differently depending on whether their budgets were for personal-purchases or gift-purchases. Consistent with the traditional meaning of a mental budget, consumers perceived personal-budgets as a spending amount that is preferably minimized. In contrast, consumers perceived gift-budgets as a spending amount that is preferably maximized—by which consumers aim to spend all of their budget. We further provided process evidence of this difference by demonstrating that consumers maximize gift-budgets on account of their weaker prevalence of savings goals.

In support of our hypotheses, study 1 provided a qualitative exploration of how consumers perceive personal- and gift-budgets. In study 2, we assessed consumers' preference for choosing a below-budget versus at-budget product, and showed that consumers' savings goals predicted their preferences. In study 3, we manipulated the slack in a budget, finding that when consumers have spent less than their budget, they will spend more on gifts but not on personal-purchases. This shows that consumers treat their gift-budgets like benchmarks that they want to meet—they prefer to spend all of the money they budgeted, rather than spend less than their budget. In keeping with our proposed savings goals mechanism, consumers' focus on savings goals mediated consumers' tendency to maximize their budgets and add to their

purchases. In study 4, we unlocked more evidence for the effects of budgets on spending, and divergent perceptions thereof. We observed consistent effects for explicit and implicit budgets; however, the differences in gift- and personal-spending were attenuated when consumers did not possess a budget. Study 5 deepens the understanding of the underlying mechanism by exploring additional processes that explain the difference between personal- vs. gift-budgets. We found evidence people's focus on savings goals is the dominant process explanation and that it is also influenced by factors related to purchasing for others (impression management, guilt), and by a factor related to purchasing gifts (specialness). Then, in study 6, we disentangled the effect of making purchase decisions for others and making gift-choices for others by separately manipulating each dimension. We found that people spent more of their budgets when making purchase decisions for others (vs. for themselves) and when buying gifts for others (vs. for themselves); moreover, the difference was highest when buying gifts for others. Finally, in study 7, we provided money to participants, enabling them to spend $10 wherever they please with almost no restrictions besides that they spend it either on themselves or on others. We found that participants who made gift-purchases spent a near-exact amount of their endowment (evidence of consumers spending more of their budget—i.e., maximizing it). In contrast, participants who made personal-purchases spent significantly less than their endowment (evidence of consumers spending less of their budget—i.e., minimizing it).

All told, we tested the effect among 3549 total participants, across several changes in procedure, design, and sample characteristics. We used content-analysis in study 1 and tested underlying processes in multiple ways including a test of simple mediation, a test of moderated-mediation, multiple (serial and parallel) mediations across studies 2 through 6. Finally, we

conducted a field study, in which we tested our research in a manner in which consumers actually make purchase-decisions (study 7).

Future Directions

Throughout this research, we tested and observed evidence that consumers prefer to increase spending on gift- than on personal-purchases because they have weaker savings goals for gift-purchases. However, we recognize that this effect may be moderated by additional factors, such as the size of the budget. The current package of studies examines budgets in the range of $30 to $100. When the budget is large for a big purchase (e.g., setting a budget for a house or a car), there is reason to suspect that the effect could either diminish or maintain because of changes in perceptions of the gift amount. For example, imagine a person who sets a $50,000 budget to buy a gift, and finds a $35,000 car that seems like an appropriate gift. On one hand, the gift giver might think that $35,000 is a large amount of money already, and that there is no longer a need to worry that the recipient will think poorly of the giver, or to feel guilty, or to worry that it isn't special enough if they didn't spend the extra $15,000. On the other hand, it is possible that for even wealthy people, who can afford to give gifts of this size, our findings remain salient, and the effect generalizes. In contrast, the effect may also be moderated by a very small budget. For example, when the budget for a purchase is set for $5, consumers may have fewer options for items that can fit the budget, and thus spending may be budget-maximized for both personal- and gift-purchases.

Another potential boundary condition is the non-monetary aspect associated with gift-purchases. There are instances in which gift-recipients may question and search for the value of the gifts they receive (i.e., looking a gift horse in the mouth; Sherry, McGrath, and Levy 1993).

And givers may be aware of this tendency—in fact they may even embrace it by purposefully selecting gifts that will impress in the moment, such as choosing a dozen roses in bloom over twice as many roses that are about to bloom (Yang and Urminsky 2018). Relatedly, givers might feel embarrassed or cheap should they spend under budget. These are unique concerns to gift-giving because consumers should feel little pressure to impress themselves. But this begs questions like whether givers are spending too much money on others. Research has shown that gift-recipients are relatively indifferent to how much givers spend, yet givers feel like the price of their gift matters and communicates affection or thoughtfulness (Flynn and Adams 2009). Furthermore, money is not the only gift-giving resource; consumers can spend time or effort in searching for, or hand-making a gift. An open question is to what extent (if any) consumers consider the spending of non-monetary resources on their budget-maximizing tendencies. Quite possibly, the more difficult it is to acquire a gift, the more consumers relax their budget-maximizing tendencies. In essence, the time and effort spent may be accounted for in consumers' gift-budgets.

Finally, in the studies presented here, the effect of social distance or relationship strength between giver and a recipient was not tested. Previous research has found that consumers' gift-giving tendencies are sensitive to social distance. On one hand, people tend to spend more when gifting to close (as compared to distant) others because people perceive the gift-exchange with close (vs. distant) others as more important (Belk 1976; Sherry 1983), suggesting that the effect could be stronger for close others. On the other hand, people may spend more when gifting to distant (as compared to close) others because they care to leave positive impressions or feel greater guilt if not reciprocating appropriately, as the gift-exchange with distant others tend to be more socially obligated or transactional (Goodwin, Smith, and Spiggle 1990; Ward and

Broniarczyk 2016). We tested the role of social distance by comparing personal-purchases with gift-purchases for close relative versus for distant relative (see appendix B7 for details). We found that the effect of personal- vs. gift-budgets did not differ as a function of social distance; gift-purchasers indicated greater willingness to spend more of their budgets for both close and distant recipients. Thus, we can conclude that the budget-maximization for gift-purchases is a robust effect across different giver-recipient social distance.

Theoretical Contributions

The current research suggests that mental budgets are subjective and malleable according to the purchase situation: personal-purchase or gift-purchase. We found that consumers associate different goals to budgets. Traditionally, budgets are set up to minimize spending, and this is indeed the case for personal-purchases. But for gift-purchases, the budget takes on a different meaning—it is viewed as a maximizing-goal by which consumers aim to spend all of their budget. This provides an alternative take on budgets. While prior studies in mental budgeting consider budgets broadly as a tool to curb spending and enhance self-control, we provide a novel point of view such that a mental budget could represent a goal-amount that engenders either minimizing or maximizing. Thus, we find that keeping a budget constant still renders different consumer behaviors, in terms of how a budget is perceived (as an amount that should be "more than" the purchase-price, or "equal to" the purchase-price), and the spending that follows.

We also contribute to the gift-giving literature. Most prior research on gift-giving has examined asymmetrical giver-receiver disparities in gift-giving preferences (Zhang and Epley 2012), covering a wide range of preferences, from the differences in giving material/experiential gifts, expressive gifts, socially responsive gifts, sentimental gifts, multiple gifts, and so on

(Cavanaugh, Gino, and Fitzsimons 2015; Chan and Mogilner 2017; Givi and Galak 2017; Paolacci, Straeter and De Hooge 2015; Steffel and LeBoeuf 2014; Ward and Broniarczyk 2016). Our research broadens the understanding of gift-giving behavior through exploration of a practical factor—how much money consumers spend on gifts—and shows that budgeting for gift leads consumers to aim for buying a gift at their budget's higher end. Accordingly, we find that consumers spend more of their budgets on others—a conditional thriftier-for-me effect.

Finally, findings from our research provide support for the general idea that consumers perceive others' consumer behaviors differently from their own. By exploring gift-giving as one of the dominant other-directed behaviors, we document an underlying reason for why consumers behave differently when deciding for the self versus for a gift to others—it is because consumers perceive budgets differently when choosing for a gift versus choosing for the self. This pattern suggests a novel perspective on self- and social- judgment. For example, a consumer may justify treating a friend to an indulgent pleasure, but shake her head and balk at her own indulgence, seeing it as excessive, unhealthy, or materialistic. In such situations, we may observe behaviors that illustrate a rare double standard that favors others, whereby consumers maximize others' consumption through gift-giving yet condemn their own matching consumption.

Practical Implications

Our research can provide some implications to marketers. As we have documented that budgets are perceived differently, marketing managers might consider how bundling their products can match consumers' budget-minimizing and -maximizing tendencies. For personal-purchases, less may be more, but for gifts, consumers may prefer additional products that they can add to their purchases. Salespeople could be trained to ask customers what their budgets are,

and then help accordingly. For example, by reminding customers of their budgets, retailers may prompt gift-purchasers to consider buying additional items. However, it follows that among personal-purchasers, consumers may buy fewer items. Around the holidays, when consumers are likely buying gifts, firms might consider promoting "budget-meeting" items—products that are akin to add-on items but promoted to "complete" one's budget. Firms might even experiment with shopping momentum effects—for example, upon buying gifts for others (and should slack remain in the budget), consumers could be prompted to buy additional items for both others and themselves (vis-à-vis shopping momentum; Dhar, Huber, and Khan 2007). Which is to say that budget-slack may not just benefit others, but could alter how much consumers want to spend on themselves. In this vein, consumers may spend the gift-budget slack on themselves.

Our findings may also have implications for gift-pricing. As consumers typically set their budgets with round numbers (e.g., $100 instead of $103), marketers may opt to price their products with similarly round numbers (or just below a round number). This can reduce the effort consumers spend in searching for a gift that meets their budget amount. Or in keeping with the idea of promoting "budget-meeting" items, when consumers are shopping online and placing items into their shopping carts, firms could recommend specifically-priced products that would total a consumers' overall purchase to a round number, anticipating or predicting that a consumer is searching for a gift with a specific budget in mind.

3.12. Conclusion

Consumers usually set budgets to minimize their spending. Our research suggests that budgets can take on a different psychological meaning depending on whether a budgeted purchase is a personal- or gift-purchase. We found that consumers aim to spend less than their

budgets for personal-purchases, and spend more of their budgets for gift-purchases. Altogether, our research shows that budgets are mentally flexible and provoke different goals, which affect how (and how much) consumers spend.

4. CONCLUSION

This dissertation was motivated to examine novel factors that have yet received little attention in the large literature on mental budgeting, and contribute to the understanding of budgeting efficacy. Essay 1 examined the interplay between the amount of temporal separation in budgeting and subsequent spending, and found that consumers experiencing greater temporal separation in budgeting are increasingly likely to overspend their budget through the process of "budget depreciation." Essay 2 examined the divergent perceptions consumers have towards personal versus gift-budgets, and found that consumers tend to maximize spending within the gift-budgets. Across the two essays, this dissertation demonstrated the psychological and situational factors that affect the role of budgeting on consumers' spending behavior.

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6. APPENDIX A

Appendix A1: Pilot Study - Budgeting for a Single vs. Multiple Expenses

Design and Procedure

A total of 308 participants on Amazon Mechanical Turk were recruited for the experiment. Participants were randomly assigned to one of the four experimental conditions in a 2 (temporal separation: distant future vs. near future) × 2 (budget type: single- vs. multiple-expenses) between-subjects design. Participants in the single-expense budgeting condition were told to imagine that they were setting a budget for a single social dining expense that would occur at the end of either one week (near future) or two months (distant future). Participants in the multiple-expenses conditions were told to imagine that they were setting a budget for all the social dining expenses that would occur over the next one week (near future) or the next two months (distant future). Participants entered the estimated budget amount in US dollars. After participants submitted their budget estimates, we asked participants to rate how easy it was to estimate their budget on a seven-point scale (1 = not easy at all, 7 = extremely easy). We then reverse-coded this item to provide a measure of estimation difficulty.

Results

Prior to analyses, we excluded 7 null response (i.e., $0) or outliers (e.g., $4,000 or $15,000, +3SD above M = $208.85, SD = 1064.21) in the budget estimation. Then, a final sample of 301 was used for analysis (46.5% female, M_{age} = 35.71, SD = 11.50).

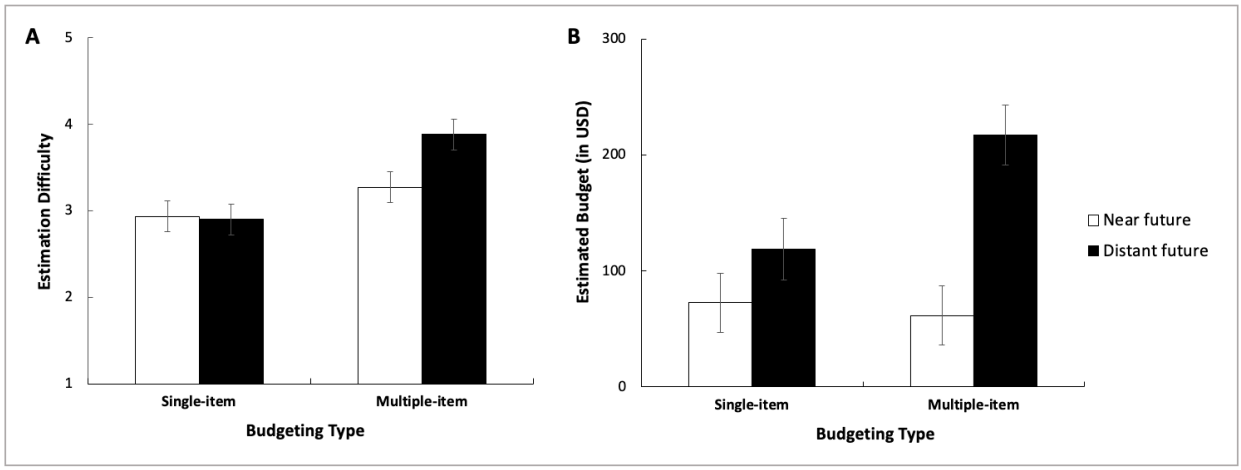
Budget estimates. Consistent with Ülkümen et al. (2008), the two-month budget was converted to a weekly estimate through a simple linear transformation (two-months budget divided by 8 weeks). A two-way between-subjects ANOVA revealed a significant interaction

between temporal separation and budget type on budget estimates ($F(1,297) = 4.50$, $p = .035$, partial $\eta^2 = .015$).

When setting a budget for multiple expenses, participants who were budgeting for the upcoming two months (i.e., distant future) set a higher budget estimate ($M_{\text{two-months}} = \$217.17$, SD = 420.40) than those who were budgeting for the upcoming week (i.e. near future) ($M_{\text{one-week}} = \$61.69$, SD = 94.05; $F(1,297) = 18.52$, $p < .001$, partial $\eta^2 = .059$). This result replicates the findings in prior literature (Ülkümen, Thomas, and Morwitz 2008), which shows that consumers tend to adjust their budget upward when budgeting for a longer temporal frame (i.e., next year) than when budgeting for a shorter temporal frame (i.e., next month).

On the other hand, when setting a budget for a single purchase, the estimate adjustment was not observed. Specifically, the estimated budget amount for a dinner in the distant future ($M_{\text{two-months}} = \$118.82$, SD = 97.42) was not significantly different from the budget for a dinner in the near future ($M_{\text{one-week}} = \$72.61$, SD = 55.44; $F(1,297) = 1.58$, $p = .210$, partial $\eta^2 = .005$).

Estimation Difficulty. A two-way between-subjects ANOVA revealed a marginally significant interaction between temporal separation and ease of budget estimation ($F(1,297) = 3.26$, $p = .072$, partial $\eta^2 = .011$). When setting a budget for multiple expenses, participants who were budgeting for the upcoming two months (i.e., distant future) felt it was more difficult ($M_{\text{two-months}} = 3.88$, SD = 1.61) than budgeting for the upcoming week (i.e., near future; $M_{\text{one-week}} = 3.27$, SD = 1.47; $F(1,297) = 5.75$, $p = .017$, partial $\eta^2 = .019$). However, when estimating their budget for a single expense, participants did not differ significantly in feelings of difficulty when estimating for an expense in the near future ($M_{\text{one-week}} = 2.93$, SD = 1.61) or in the distant future ($M_{\text{two-months}} = 2.89$, SD = 1.60; $F(1,297) = .03$, $p = .861$, partial $\eta^2 < .001$).

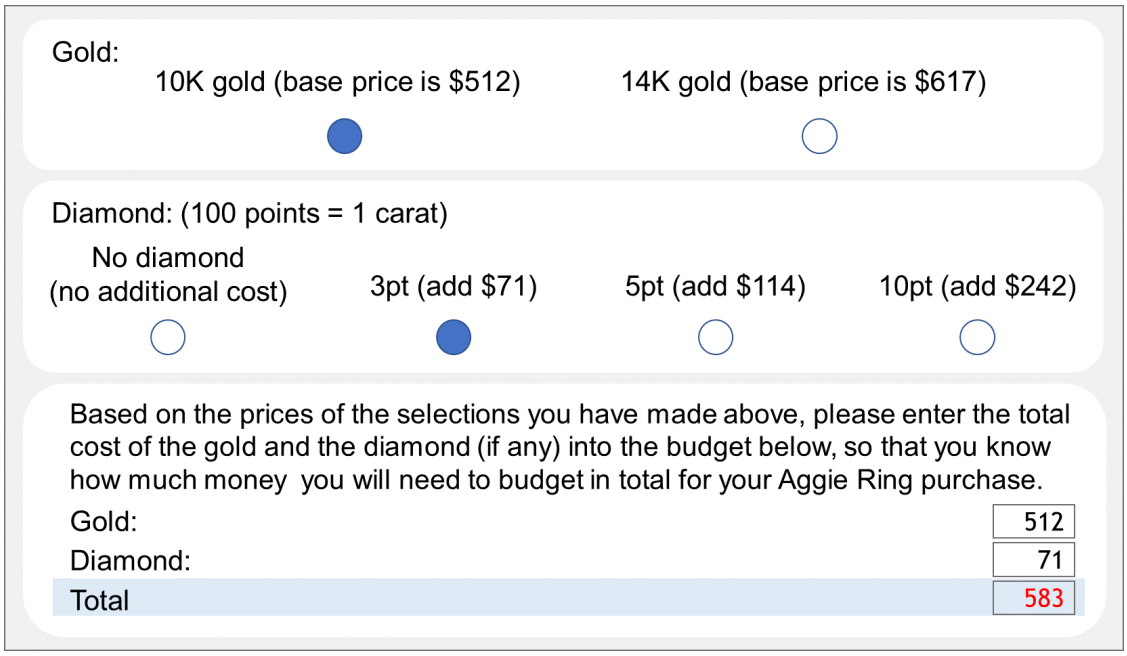


Note – When estimating budgets for multiple expenses, consumers find it more difficult to estimate their budget (Panel A), and estimate higher budgets (Panel B), for expenses to occur over the next two months (distant future) than over the next one week (near future). When estimating budgets for a single expense, consumers find it similarly difficult to estimate their budget (Panel A) and estimate similar budgets (Panel B) regardless of whether the expense is to occur at the end of one week (near future) or two months (distant future).

Discussion

Together, the findings in this pilot study help us reconcile an apparent inconsistency between our results and those found in Ülkümen et al. (2008). As in Ülkümen et al. (2008), budgeting for multiple purchases over a longer duration of time is more difficult and elicits higher budget estimates than budgeting for a shorter duration of time. However, budgeting for a single purchase to occur at the end of a longer time period is just as difficult and elicits similar budget estimates as budgeting for a single purchase to occur at the end of a shorter time period. This may help explain why we observe that budget estimates do not differ across temporal separation conditions.

Appendix A2: Study 2 - Stimuli for Female Participants



Appendix A3: Study 3 - Mediation Analyses Results

		Pain of Payment (M)				Overspending (Y)		
		Coeff	SE	*p*		Coeff	SE	*p*
Temporal Separation (X)	a_1	-2.588	.841	.003	c_1'	2.135	.857	.014
Tightwads-Spendthrifts (W)	a_2	-.185	.037	<.001	c_2'	.106	.040	.008
Interaction (XW)	a_3	.096	.053	.072	c_3'	-.096	.053	.074
Pain of Payment (M)		-	-	-	b_1'	-.447	.077	<.001
Constant	i_1	6.433	.594	<.001	i_1	4.640	.770	<.001
Model summary		R^2 = .234 $F(3,165)$ = 16.766, p < .001				R^2 = .339 $F(4,164)$ = 21.066, p < .001		

Appendix A4: Study 3B - Temporal Separation Increases Overspending for Hedonic but Not Utilitarian Products

The purpose of this study is to provide support for the budget depreciation process using a moderation-of-process approach (Spencer, Zanna, and Fong 2005). We suggested that temporal separation increases overspending because people adapt to the idea of spending that amount of money and the pain associated with the upcoming purchase diminishes over time. According to this reasoning, the effect of temporal separation should be stronger for situations that elicit high pain of payment, and should be weaker for situations that naturally elicit low pain of payment. In addition to comparing tightwads versus spendthrifts, who naturally feel different levels of pain of paying, this experiment compares product benefits – hedonic vs. utilitarian – that elicit high vs. low pain of payment to further investigate the role of pain on the effect of temporal separation.

Prior research suggests that hedonic products are more difficult to justify than utilitarian ones (Okada 2005), and elicit more guilt and negative self-attributions (Khan and Dhar 2006). This suggests that the pain of payment associated with hedonic products may be higher than the pain associated with utilitarian products. Thus, we reason that the effect of temporal separation will hold when consumers make hedonic purchases but will be mitigated for utilitarian purchases.

Design and Procedures

Participants were randomly assigned to one of the six experimental conditions in a 3 (temporal separation: distant past vs. near past vs. no-budget as control) × 2 (product frame: hedonic vs. utilitarian) between-subjects design. We recruited participants on Amazon

Mechanical Turk in exchange for a small monetary reward. For the participants in the budgeting conditions, they were asked to imagine that they set aside $300 either two-months ago (distant past) or one-week ago (near past) to purchase a tablet PC. For those in the control condition, no information related to budgeting was provided.

The tablet PC was framed as providing either hedonic or utilitarian benefit. To manipulate the product frame, half of the participants read that the primary purpose of the tablet PC purchase was for hedonic benefits, while the other half read that it was for utilitarian benefits. Below are the scenarios participants in each manipulation condition read:

Hedonic Frame

Imagine that two months ago (one week ago), you put aside $300 in your budget in order to purchase a tablet PC. The primary purpose of your tablet PC purchase is for hedonic benefits. By hedonic benefits, we mean that the item is desired primarily to fulfill a motivation for pleasure. Hedonic items can be often defined as enjoyable, luxurious, and fun. Therefore, imagine that you are setting up a budget for a tablet PC purchase to engage in fun activities, such as watching movies and dramas, listening to music, playing mobile games, or browsing on social networking sites.

Utilitarian Frame

Imagine that two months ago (one week ago), you put aside $300 in your budget in order to purchase a tablet PC. The primary purpose of your tablet PC purchase is for utilitarian benefits. By utilitarian benefits, we mean that the item is desired primarily to fulfill a basic need or to achieve a functional goal. Utilitarian items can be often defined as useful and practical.

Therefore, imagine that you are setting up a budget for a tablet PC purchase to engage in productive and useful activities, such as keeping your daily schedule, downloading textbook materials, or reading and taking notes on slides for your classes.

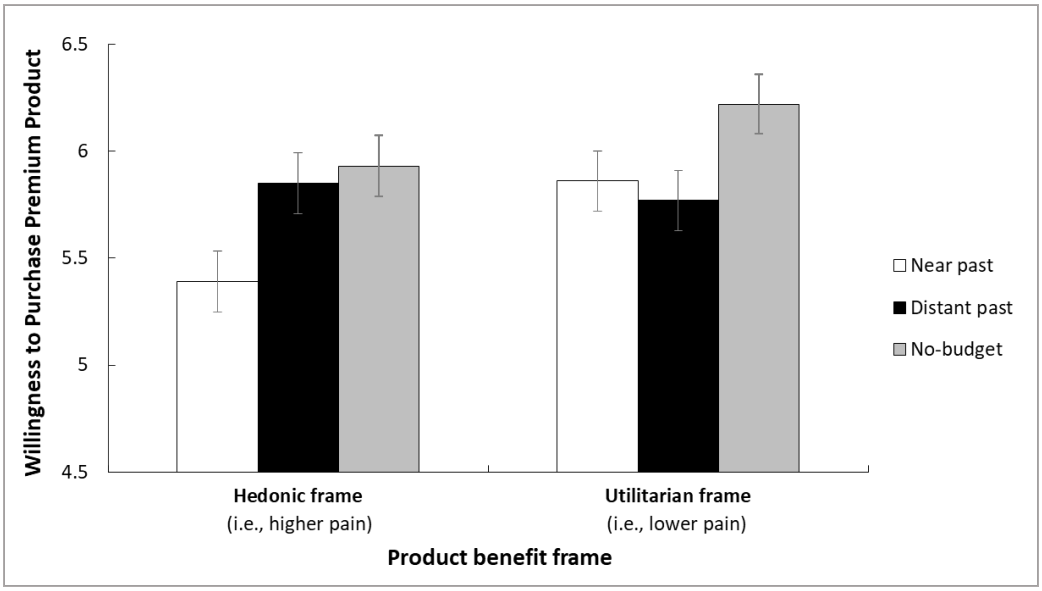
Participants then completed a reading check, which asked them about what they had read in the scenario. Then, participants indicated how likely they would be to spend $330, instead of their $300 budget (no budget cue for those in the control condition), for the tablet PC to purchase a premium version of the tablet PC that offers more storage space and longer battery life (1 = very unlikely, 7 = very likely).

Results

A total of 643 participants completed the experiment, and excluding 21 participants who failed to answer the reading check correctly, a final sample of 622 was used for analysis (56.3% female, M_{age} = 37.76, SD = 12.78).

To explore our hypotheses, we first ran an interaction contrast exploring the effect of temporal separation for those who had a budget (near vs. distant past) by product benefit (hedonic vs. utilitarian benefits) on willingness to overspend. We observe a significant interaction ($F(1,616) = 3.74$, $p = .053$, partial $\eta^2 = .006$). For people who budgeted for a hedonically-framed tablet PC (i.e., higher pain), greater temporal separation increased overspending ($M_{\text{one-week* hedonic}} = 5.39$, SD = 1.70 vs. $M_{\text{two-months * hedonic}} = 5.85$, SD = 1.33; $t(616) = 2.301$, $p = .022$). However, for people who budgeted for a utilitarian-framed tablet PC (i.e., lower pain), temporal separation did not have a significant effect on overspending ($M_{\text{one-week * utilitarian}} = 5.86$, SD = 1.49 vs. $M_{\text{two-months * utilitarian}} = 5.77$, SD = 1.52; $t(616) = .422$, $p = .673$).

Next, we compared how willingness to upgrade differs for those with no pre-set budget. For people who shopped for a hedonically-framed tablet PC with no pre-set budget, willingness to overspend was significantly higher than people who budgeted in the near past ($M_{\text{no-budget * hedonic}}$ = 5.93, SD = 1.43 vs. $M_{\text{one-week * hedonic}}$ = 5.39, SD = 1.70, $t(616) = 2.70$, $p = .007$), but was the same as people who budgeted in the distant past ($M_{\text{no-budget * hedonic}}$ = 5.93, SD = 1.43 vs. $M_{\text{two-months * hedonic}}$ = 5.85, SD = 1.33, $t(616) = -.39$, $p = .695$). For a utilitarian-framed tablet PC, people with no pre-set budget spent marginally more than people who budgeted in the near past ($M_{\text{no-budget * utilitarian}}$ = 6.21, SD = 1.16 vs. $M_{\text{one-week * utilitarian}}$ = 5.86, SD = 1.49, $t(616) = 1.81$, $p = .072$), and significantly more than people who budgeted in the distant past ($M_{\text{no-budget * utilitarian}}$ = 6.21, SD = 1.16 vs. $M_{\text{two-months * utilitarian}}$ = 5.77, SD = 1.52, $t(616) = 2.23$, $p = .026$).



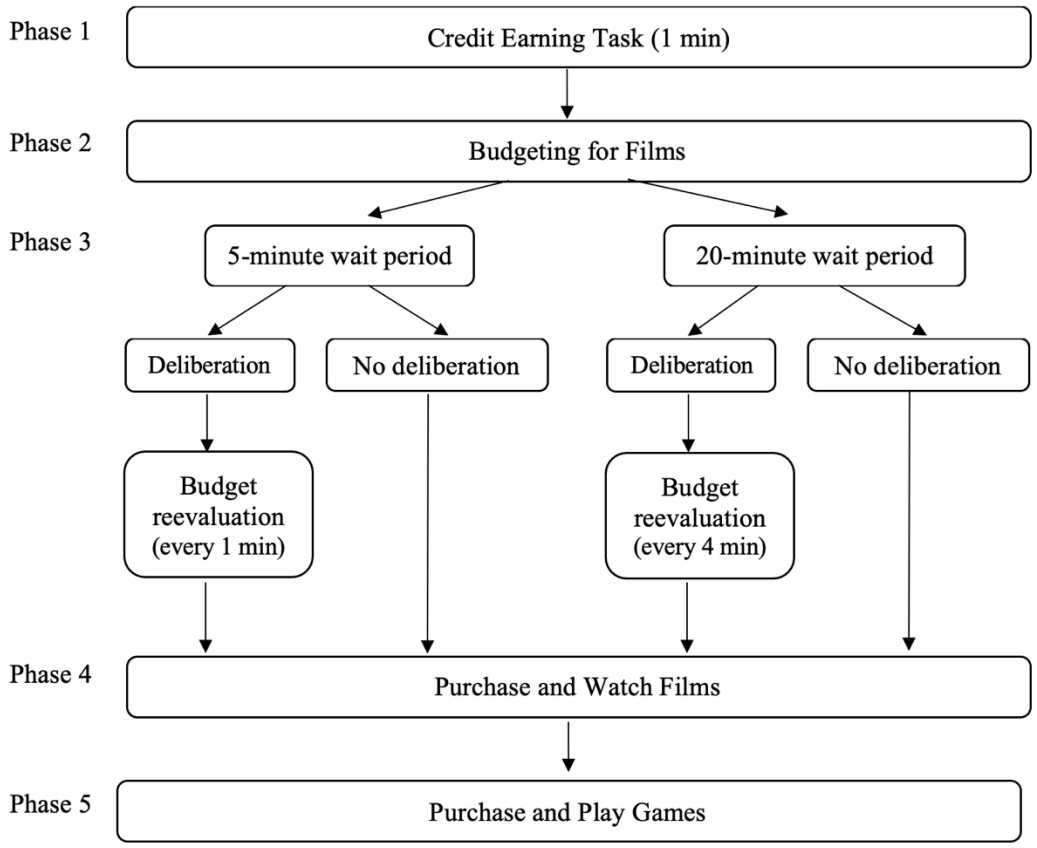
The results from this study lend empirical support to our theorizing that the effect of temporal separation on overspending can be attributed to the reduction of pain associated with the budgeted amount. We show this by identifying two scenarios that should differ in the amount of pain they elicit, and then comparing the effect of temporal separation in the high pain

scenario, and in the low pain scenario. When considering hedonic purchases, which we presume elicits greater pain of payment, increased temporal separation in budgeting results in overspending. When considering utilitarian purchases, which are generally less painful, temporal separation did not significantly predict overspending.

Appendix A5: Study 4 - Temporal Separation Comparisons by Purchase Price

Purchase price	Temporal separation		Mean difference for distant vs. near past	SE	*F* (1,229)	*p*	*Partial* η^2
$200	1 day ago	1 week	.096	.048	3.953	.048	.017
		1 month	.187	.080	5.529	.020	.024
		2 months	.265	.108	6.065	.015	.026
		3 months	.330	.117	7.978	.005	.034
		6 months	.339	.134	6.393	.012	.027
		No budgeting	.274	.064	18.317	<.001	.074
	1 week	1 month	.091	.051	3.203	.075	.015
		2 months	.170	.084	4.045	.045	.017
		3 months	.235	.094	6.186	.014	.028
		6 months	.243	.116	4.395	.037	.020
		No budgeting	.178	.065	7.550	.006	.034
	1 month	2 months	.078	.067	1.375	.242	.006
		3 months	.143	.077	3.428	.065	.015
		6 months	.152	.098	2.412	.122	.010
		No budgeting	.087	.084	1.076	.301	.005
	2 months	3 months	.065	.039	2.731	.100	.012
		6 months	.074	.064	1.346	.247	.006
		No budgeting	.009	.100	.008	.931	<.001
	3 months	6 months	.009	.048	.033	.857	<.001
		No budgeting	-.057	.110	.300	.608	.001
	6 months	No budgeting	-.065	.128	.259	.611	.001
$800	1 day ago	1 week	.070	.032	4.644	.032	.020
		1 month	.178	.055	10.614	.001	.044
		2 months	.352	.075	22.184	<.001	.088
		3 months	.517	.092	31.372	<.001	.120
		6 months	.757	.112	45.237	<.001	.165
		No budgeting	.309	.074	16.243	<.001	.070
	1 week	1 month	.109	.039	7.751	.006	.033
		2 months	.283	.059	22.784	<.001	.090
		3 months	.448	.078	32.715	<.001	.125
		6 months	.687	.101	45.904	<.001	.167
		No budgeting	.239	.068	12.251	.001	.051
	1 month	2 months	.174	.037	21.810	<.001	.087
		3 months	.339	.055	37.497	<.001	.141
		6 months	.578	.083	48.373	<.001	.174
		No budgeting	.130	.068	3.732	.055	.016
	2 months	3 months	.165	.037	19.502	<.001	.078
		6 months	.404	.070	32.944	<.001	.126
		No budgeting	-.043	.073	.354	.553	.002
	3 months	6 months	.239	.055	18.609	<.001	.075
		No budgeting	-.209	.082	6.444	.012	.027
	6 months	No budgeting	-.448	.099	20.279	<.001	.081

Appendix A6: Study 5 - Multi-Phase Experiment Flow



Appendix A7: Study 5 - Mediation Analyses Results

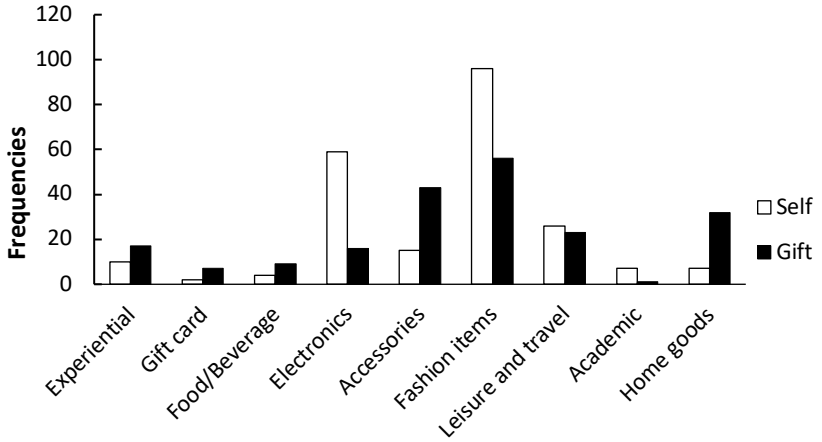
		Pain of Payment (M)				Overspending (Y)		
		Coeff	SE	*p*		Coeff	SE	*p*
Temporal Separation (X)	a_1	-.642	.341	.061	c_1'	6.396	2.590	.014
Budget Deliberation (W)	a_2	.011	.344	.975	c_2'	.359	2.593	.890
Interaction (XW)	a_3	1.061	.482	.029	c_3'	-6.297	3.684	.089
Pain of Payment (M)		-	-	-	b_1'	-.912	.525	.084
Constant	i_1	2.774	.241	<.001	i_1	-1.056	2.327	.650
Model summary		R^2 = .047 $F(3,207)$ = 3.404 , p = .019				R^2 = .062 $F(4,206)$ = 3.420, p = .010		

APPENDIX B

Appendix B1: Study 1 - Items for Personal- vs. Gift-Purchases

The table below shows frequencies of items mentioned for personal- and gift-purchases. We created dummy variables by coding 1 if the item falls into the product characteristic or category. For example, we coded as 1 when the budget item was an experiential good (e.g., vacation), 0 otherwise. Next, we compared the frequencies of participants indicating each of the product type or product category.

Product Types / Category		Example	Personal	Gift	χ^2	*p*
Experiential (vs. Material)		Concert ticket, nice dinner, vacation	10	17	1.333	.248
Gift-card (vs. non-gift)		Amazon gift-card	2	7	1.778	.182
General budget categories	Food/beverage and groceries	Candy, cookies, wine	4	9	1.231	.267
	Electronics	TV, camera, fitness watch, game console	59	16	27.138	<.001
	Jewelry and accessories	Necklace, earrings, wristwatch, sunglasses	15	43	15.848	<.001
	Shoes, clothing, and fashion items	Shoes, clothes, makeup, perfume	96	56	17.686	<.001
	Leisure, hobby, and travel	Tennis racket, golfing accessories, toy	26	23	.085	.770
	Academics	Textbook, prep class	7	1	3.125	.077
	Home goods, home decor	Cups, picture frame, cooler, candle	7	32	14.769	<.001



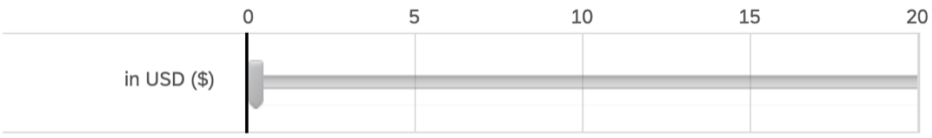
Appendix B2: Study 2 - Mediation Analysis Results

		I. Path Analyses						
		Savings goals (M)			Likelihood to choose at-budget item (Y)			
		Coeff	SE	*p*		Coeff	SE	*p*
Personal vs. Gift Budgets (X)	a_1	-.384	.125	.002	c_1	.223	.185	.231
Savings Goals (M)		-	-	-	b_1	-1.345	.081	<.001
Constant	i_1	4.676	.088	<.001	i_1	9.795	.401	<.001
II. Direct effect					c'	.223	.185	.231
III. Boot sampling result for indirect effect		Indirect Effect Estimates				95% CI		
		b		SE		LL		UL
		.517		.163		.192		.833

Appendix B3: Study 3 - Moderated Mediation Analysis Results

		I. Path Analyses						
		Savings goals (M)			WTP for add-on mug(Y)			
		Coeff	SE	*p*		Coeff	SE	*p*
Personal vs. Gift Budgets (X)	a_1	-.008	.159	.958	c_1	.734	.429	.088
Budget Slack (W)	a_2	.072	.155	.642	c_2	.320	.421	.448
Interaction (XW)	a_3	-.539	.220	.015	c_3	.905	.601	.134
Savings Goals (M)		-	-	-	b_1	-1.183	.152	<.001
Constant	i_1	4.767	.114	<.001	i_1	8.651	.786	<.001
II. Conditional direct effect		No-slack				.734	.429	.088
		Budget-slack				1.639	.422	<.001
III. Boot sampling result for indirect effect		Conditional Indirect Effect Estimates				95% CI		
				b	SE	LL		UL
		No-slack		.010	.182	-.360		.362
		Budget-slack		.648	.211	.254		1.089

Appendix B4: Study 4 - Materials and Stimuli

Conditions	Scenario
Explicit budget	*You set a budget of $50* to buy something for yourself (vs. a gift for your friend's birthday). As the weather gets cold, you decide to buy a fleece sweatshirt for yourself (vs. your friend). Suppose that you are now at the store to buy a sweatshirt for yourself (vs. as a gift). You realize that the price of the fleece sweatshirt you are interested in buying is $40, *a bit lower than how much you have budgeted ($50).*
Implicit budget	*You are considering spending around $50* to buy something for yourself (vs. a gift for your friend's birthday). As the weather gets cold, you decide to buy a fleece sweatshirt for yourself (vs. your friend). Suppose that you are now at the store to buy a sweatshirt for yourself (vs. as a gift). You realize that the price of the fleece sweatshirt you are interested in buying is $40, *a bit lower than how much you are considering spending ($50).*
Absent budget	You are considering buying something for yourself (vs. a gift for your friend's birthday). As the weather gets cold, you decide to buy a fleece sweatshirt for yourself (vs. your friend). Suppose that you are now at the store to buy a sweatshirt for yourself (vs. as a gift). You realize that the price of the fleece sweatshirt you are interested in buying is $40.
WTP for a mug	You decide to buy the sweatshirt for $40. As you've decided to buy the sweatshirt, the salesperson recommends 3-pack fleece socks to buy with the sweatshirt. Suppose that you will not buy any additional things for you (vs. the gift). How much are you willing to pay for the socks? Please move the slider to indicate how much you would be willing to pay between 0 to 20 dollars. 

Appendix B5: Study 5 - Multiple Processes Mediation Analyses

Step 1. Simple Mediation Models

Explanations	I. Path Analyses				
	Path	Coeff	SE	*t*	*p*
Savings goals	a	-.541	.121	-4.462	<.001
	b	-1.174	.081	-14.473	<.001
	c'	.037	.195	.188	.851
Preference uncertainty	a	.332	.111	2.992	.003
	b	.144	.111	1.304	.193
	c'	.624	.240	2.603	.010
Focus on price (vs. product)	a	-.468	.201	-2.326	.021
	b	-.211	.060	-3.505	<.001
	c'	.573	.235	2.436	.015
Perceived ownership of money	a	-.802	.165	-4.859	<.001
	b	-.013	.075	-.178	.860
	c'	.662	.245	2.701	.007
Guilt	a	.618	.211	2.931	.004
	b	.709	.045	15.663	<.001
	c'	.234	.187	1.253	.211
Impression management	a	.832	.217	3.841	<.001
	b	.460	.052	8.918	<.001
	c'	.290	.220	1.318	.188
Consideration of others' worth	a	.453	.209	2.167	.031
	b	.387	.055	6.999	<.001
	c'	.497	.225	2.210	.028
Specialness	a	.732	.156	4.697	<.001
	b	.324	.077	4.199	<.001
	c'	.435	.239	1.821	.069

Explanations	II. Results for indirect effects				
	Path	Indirect Effect Estimates		CI[†]	
		b	β	LL	UL
Savings goals[*]	a × b	.635 (.141)	.274 (.061)	.255	1.024
Preference uncertainty		.048 (.039)	.021 (.017)	-.055	.183
Focus on price (vs. product)		.099 (.054)	.043 (.023)	-.019	.296
Perceived ownership of money		.011 (.065)	.005 (.028)	-.176	.210
Guilt[*]		.438 (.152)	.189 (.066)	.021	.912
Impression management[*]		.382 (.112)	.165 (.047)	.114	.729
Consideration of others' worth		.175 (.085)	.076 (.037)	-.046	.433
Specialness[*]		.237 (.078)	.102 (.033)	.067	.476

Note – a path indicates the path from personal vs. gift budgets (X) to mediators (M). b path indicates the path from mediators (M) to likelihood to choose at-budget product (Y). Finally, a × b path indicates the indirect path from X to Y via M.

[†] The significance level α was adjusted to account for eight factors (.05/8). *b* indicates unstandardized coefficients, and β indicates standardized coefficients, and their standard error (SE) are in parentheses. LL is lower level, and UL is upper level of adjusted confidence interval.

[*] indicates significant indirect effects.

Step 2. Parallel Mediation Model

Explanations	I. Path Analyses				
	Path	Coeff	SE	*t*	*p*
Savings goals	a_1	-.541	.121	-4.462	<.001
	b_1	-.779	.075	-10.451	<.001
Guilt	a_2	.618	.211	2.931	.004
	b_2	.457	.055	8.378	<.001
Impression management	a_3	.832	.217	3.841	<.001
	b_3	.073	.050	1.462	.145
Specialness	a_4	.732	.156	4.697	<.001
	b_4	.059	.057	1.045	.297
II. Direct effect	c'	-.148	.171	.864	.388

Explanations	III. Results for indirect effects				
	Path	Indirect Effect Estimates		CI†	
		b	β	LL	UL
Savings goals*	a × b	.433 (.100)	.187 (.043)	.191	.714
Guilt*		.283 (.108)	.122 (.047)	.033	.576
Impression management		.061 (.058)	.026 (.025)	-.071	.230
Specialness		.434 (.046)	.019 (.020)	-.066	.170

† The significance level α was adjusted to account for eight factors (.05/4).
* indicates significant indirect effects.

Step 3. Mediating role of savings goals while controlling for other mediators

	I. Path Analyses							
		Savings goal (M)				Likelihood to choose at-budget item (Y)		
		Coeff	SE	*p*		Coeff	SE	*p*
Personal vs. Gift Budgets (X)	a_1	-.396	.114	<.001	c_1	-.148	.171	.388
Savings Goals (M)		-	-	-	b_1	-.799	.077	<.001
Guilt (Cov1)	a_2	-.263	.035	<.001	b_2	.457	.055	<.001
Impression management (Cov2)	a_3	.037	.034	.279	b_3	.073	.050	.145
Specialness (Cov3)	a_4	-.019	.036	.620	b_4	.059	.057	.297
Constant	i_1	5.265	.190	<.001	i_1	5.852	.490	<.001
II. Direct effect					*c*'	-.148	.171	.338

III. Boot sampling result for indirect effect	Indirect Effect Estimates		95% CI	
	b	β	LL	UL
	.316 (.098)	.136 (.042)	.127	.513

Step 4. Serial Mediation Model

X = Personal vs. gift budgets, Y = Likelihood to choose at-budget product

M1 = Guilt, M2 = Savings goals

I. Path Analyses

Path	Coeff	SE	*t*	*p*
X → M1	.618	.211	2.931	.004
X → M2	-.391	.111	-3.512	<.001
M1 → M2	-.243	.027	-8.997	<.001
M1 → Y	.516	.044	11.715	<.001
M2 → Y	-.795	.077	-10.380	<.001
X → Y	-.077	.167	-.461	.645

II. Results for indirect effects

Path	b	SE	LL	UL
X → M1 → Y	.319	.116	.107	.551
X → M2 → Y	.311	.094	.132	.504
X → M1 → M2 → Y	.120	.042	.040	.207

M1 = Impression management, M2 = Savings goals

I. Path Analyses

Path	Coeff	SE	*t*	*p*
X → M1	.832	.217	3.841	<.001
X → M2	-.438	.121	-3.624	<.001
M1 → M2	-.125	.028	-4.407	<.001
M1 → Y	.330	.043	7.594	<.001
M2 → Y	-1.043	.078	-13.456	<.001
X → Y	-.167	.184	-.907	.365

II. Results for indirect effects

Path	b	SE	95% LLCI	95% ULCI
X → M1 → Y	.274	.086	.121	.458
X → M2 → Y	.456	.128	.212	.712
X → M1 → M2 → Y	.108	.036	.044	.186

M1 = Specialness, M2 = Savings goals

I. Path Analyses

Path	Coeff	SE	*t*	*p*
X → M1	.732	.156	4.697	<.001
X → M2	-.472	.124	-3.803	<.001
M1 → M2	-.095	.040	-2.370	.018
M1 → Y	.216	.053	3.438	<.001
M2 → Y	-1.140	.081	-14.155	<.001
X → Y	-.103	.197	-.524	.601

II. Results for indirect effects

Path	b	SE	95% LLCI	95% ULCI
X → M1 → Y	.158	.060	.053	.288
X → M2 → Y	.538	.140	.264	.819
X → M1 → M2 → Y	.079	.038	.014	.160

Appendix B6: Study 6 Follow Up - Known vs. Unknown Preferences

When consumers shop for themselves, they have more certainty about what they like and dislike. However, for gifts, it may be more challenging to identify if something is preference-matching. When preference is unknown, gift-purchasers may become willing to spend more of their budget because gifts often serve as a means to create a positive impression (Lowrey, Otnes, and Ruth 2004; Saad and Gill 2003). However, when preference is known, gift-purchasers no longer need to concern about choosing which gift would help signal positive impression nor feel guilty about having leftover money out of the budget. In this study, we tested whether consumers will continue to max out their gift budget even when purchasing an item that they know the recipient will like.

Method

We recruited 247 participants on Mturk (42.9% female, M_{age} = 37.43, SD = 11.25) for a small monetary reward. We randomly assigned participants to one of two conditions and asked them to imagine that they were making a personal-purchase for themselves or a purchase for others as a gift. We told participants in the personal-purchase condition that they had recently moved to a new place and decided to set aside $100 to buy something for their new kitchen. In contrast, we told participants in the gift-purchase condition that their friend had recently moved to a new place and decided to set aside $100 to buy a housewarming gift for their friend. Participants in both conditions imagined that they decided to buy a coffee maker. To manipulate the preference to be known, we told participants in the gift condition that they had asked their friend what they wanted and learned that their friend had explicitly asked for a coffee maker. Next, participants were told that the coffee maker at the store was priced at $85, and we asked

their WTP to add a pair of coffee mugs to buy along with the coffee maker on a slider scale with dollar values from $0 to $15.

Results

We compared the WTP for the mugs between the two experimental conditions (personal vs. gift). As predicted, the WTP for the mugs was higher among the participants who were buying for others (M = \$10.57, SD = 3.89) than participants who were buying for the self (M = \$8.40, SD = 4.08), $t(245) = 4.29$, $p < .001$, $d = .546$. In conclusion, we find a consistent effect such that gift-purchasers indicated greater willingness to purchase an add-on product that maxes out the budget, even if recipient preferences are known.

Appendix B7: General Discussion Additional Study - Distant vs. Close Others

Research has found that consumers' gift-giving tendencies are sensitive to social distance (Aknin and Human 2015; Baskin et al. 2014; Steffel and LeBoeuf 2014; Ward and Broniarczyk 2016). In this study, we test whether the giver-recipient social distance (distant vs. close) moderates our effect of personal- vs. gift-budget differences. We can make multiple predictions about how the effect might differ as a function of social distance.

Prior literature on social distance and gift-giving has shown that people tend to place greater importance on exchanging gifts with close others than distant others (Belk 1976; Sherry 1983). Thus, consumers spend more money on closer others (Tifferet et al. 2018; Waldfogel 1993). This suggests that consumers might maximize their budgets even more for close others. On the other hand, for very close others, consumers might perceive gift-budgets as somewhat akin to personal-budgets. Tu, Shaw, and Fishbach (2016) reported that consumers consider close others' money as their own, suggesting that when consumers buy gifts for close others, they could treat their budgets as more like personal-budgets, and thus more budget-minimizing.

In contrast, gift-exchange with distant others is often considered less important and could result in fewer involvement (Komter and Vollebergh 1997). Then, we could expect consumers to minimize their spending within the budget. Oppositely, gifts for distant others are more transactional and can carry a greater meaning of social obligation (Goodwin, Smith, and Spiggle 1990; Ward and Broniarczyk 2016). Thus, gift-purchasers who are buying for distant others might maximize their budgets more for distant others to maintain social relationship. We tested whether consumers will max out the gift budget more for close vs. distant others.

Method

We recruited 304 participants on Mturk (50.3% female, M_{age} = 39.34, SD = 12.33) for a small monetary reward. We randomly assigned participants to one of three experimental conditions that vary in social distance. Participants imagined that they were making a personal-purchase for themselves vs. a purchase for a distant other as a gift vs. a purchase for a close other as a gift.

We told participants in the personal-purchase condition that they were getting married soon and were moving into a new house. Participants imagined that they decided set aside $100 to buy something for their new kitchen. In contrast, we told participants in the gift-purchase condition that their distant vs. close relative was getting married soon and was moving into a new house, depending on the social distance condition. Participants imagined that they decide set aside $100 to buy something for a wedding gift. Participants in all three conditions imagined that they decided to buy a coffee maker. Next, participants were told that the coffee maker at the store was priced at $80, and we asked their WTP to add a pair of coffee mugs to buy along with the coffee maker on a slider scale with dollar values from $0 to $30.

Results

We compared the WTP for the mugs among the three experimental conditions (personal vs. gift for a distant other vs. gift for a close other). Consistent with our prediction, the WTP for the mugs was higher among the participants who were buying for a close other ($M_{close\text{-}other}$ = \$15.40, SD = 6.56) than participants who were buying for the self (M_{self} = \$10.92, SD = 7.42), $t(301) = 4.62$, $p < .001$, $d = .639$. Similarly, the WTP for the mugs was higher among the participants who were buying for a distant-other ($M_{distant\text{-}other}$ = \$14.24, SD = 6.66) than those who were buying for the self, $t(301) = 3.42$, $p < .001$, $d = .471$. Finally, the WTP for the mugs did not

differ between the gift-for-close-other and the gift-for-distant-other conditions, $t(301) = 1.20$, $p = .231$, $d = .175$. This concludes that while gift-purchasers wish to max out the budget than self-purchasers, this effect does not differ as a function of how distant vs. close the giver-recipient distance is.