The Influence of Categorical Framing on Budgeting

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Consumers set a higher overall budget and consequently spend more when they explicitly set budgets for component categories (“categorical framing”) than when they simply set an overall budget (“overall framing”). These effects arise because categorical (versus overall) framing makes individuals think more about what they want to spend on.

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Advances in Mental Accounting
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Paper #1: A Price-Purchase Paradox
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Paper #2: The Influence of Categorical Framing on Budgeting
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Paper #3: Spending or Stockpiling: Consumers’ Decisions to Redeem Loyalty Program Points
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Paper #4: Mental Accounting of Guilt: Decoupling Guilt from Consumption
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SESSION OVERVIEW

Mental accounting, or the way in which consumers catalog, analyze, and recall their spending, has important consequences for happiness and financial health. Research in this domain has uncovered several features that affect both spending and satisfaction, such as categorization, representation in different currencies, and purchase timing. The goal of this session is to present novel and complementary insights on the rich dynamics of mental accounting through examining these features.

This series of four papers explores how consumers’ methods of mentally and emotionally tracking their purchases and consumption decisions influence their subsequent choices and satisfaction. We collectively demonstrate that this mental tracking can influence the amount consumers spend, what they spend on, and how they feel about those expenses across different resources (money, loyalty points, and self-control).

In the first paper, Zhang, Hsee, and Sussman show how price promotions can reduce purchasing. The authors show that consumers may view the quantity at which the price increases in such a promotion (e.g. after reaching unit X under a promotional discount on the first X units) as a stopping point in their purchase decisions; this cue shifts mental budgeting, which can reduce the quantity purchased.

The second paper extends the focus from single-item mental budgeting into category-wide financial budgeting. Jia, Li, and Lee establish that consumers set higher budgets when they budget for multiple component subcategories rather than creating a single overarching budget. Consumers tend not to naturally consider more indulgent expenses, but actively estimating expenses in component subcategories fosters greater elaboration on these non-essential purchases. Actual shopping decisions reveal that this elaboration can lead consumers to spend more overall.

Next, Chun and Hamilton compare consumers’ willingness to spend loyalty points and money when they have equivalent budgets in both currencies. The authors show that the design characteristics of loyalty point programs, such as the numerosity of points awarded, systematically influence consumers’ choices between spending cash and spending points. Although use of non-cash currencies can reduce the pain of paying, especially for indulgences, making loyalty points more fungible can undermine this benefit.

The final paper extends mental accounting to the emotional pain that accompanies indulgence. Duke and Amir demonstrate that consumers can emotionally “pre-pay” their guilt by mentally budgeting in advance for an indulgence, which boosts net utility at the point of consumption. This is accomplished by decoupling the guilt associated with choosing from the guilt stemming from consuming indulgence, and allowing the former to depreciate in the period preceding consumption.

Collectively, these four papers provide a fresh understanding of methods consumers use to mentally track their resources and purchases. Counterintuitively, we find that price discounts can encourage consumers to buy less, that budgeting with more careful thought and elaboration – especially on indulgences – can encourage consumers to buy more, and that making loyalty points easier to use can lower consumer satisfaction. We believe this session will have a broad appeal, drawing researchers investigating financial decision-making, pricing, context effects, hedonic consumption, and self-control, as well as judgment and decision-making.

A Price-Purchase Paradox

EXTENDED ABSTRACT

We investigated how changes in the price of a product influence consumers’ purchasing and consumption behaviors. Specifically, we examined cases where the first few units are discounted or free. Intuitively, offering discounts or free samples should boost sales. However, we propose that there are situations when consumers purchase fewer units of a product when a discount or free sample is present versus absent, a pattern contrary to economic price sensitivity. Further, we find that this pattern is moderated by the number of products available for purchase at a discounted price. Consumers may take the quantity at which the price increase occurs as a stopping point in their purchase decisions, but only if the quantity is within a reasonable range of their initial preference. We tested our hypotheses across 5 studies in a variety of domains ranging from food to consumer products to energy consumption.

In Study 1, we told college students that they could eat as few or as many M&M’s as they wanted over a 5-minute period. Participants received either 1 M&M or 5 M&Ms as free samples. Each additional piece would cost 1 cent and the cost would be deducted from their final payment. We found that participants ate significantly fewer chocolates when the first five pieces were free than when only the first piece was free (M = 8 vs. 16; p < .05), despite the fact that participants in the former case on average paid a lower unit price for each of the chocolates they consumed (0.38 vs. 0.94 cents). Further testing revealed that participants ate fewer chocolates when they received five free samples than when there was no free sample present (M = 8 vs. 17; p < .05), suggesting that, contrary to normative predictions, consumers may purchase fewer units of a product when more units of that product are discounted.

We replicated the basic effect in the next two studies, with other forms of price increases than price discounts and free samples. In Study 2, we asked MTurk workers to imagine that they were buying an espresso machine. We manipulated the price increase in the form of a sales tax. Participants were told that the sales tax varied in their state from 2% to 8%. In the no-increase condition, the sales tax was always 8%. In the other condition, the sales tax was 2% for items...
under $50 and 8% for each dollar spent above $50. We found that participants opted to purchase a significantly less expensive espresso machine when the sales tax was initially low but would increase beyond $50 than when the sales tax was always high (Ms = $71 vs. $64; p < .01).

In Study 3, we manipulated the unit price of household electricity consumption in a hypothetical scenario, and found that participants chose to consume less energy per month if the unit price of electricity started to increase at a relatively high household consumption level than if it increased at an extremely low level.

We further looked into the mechanism underlying these effects in Studies 4-6 and tested boundary effects as well as possible mediators. We propose that consumers are not only sensitive to prices, but also sensitive to price increases. They take the quantity at which the unit price increases as a stopping point in their purchasing decisions, but they do so only if the quantity is within a reasonable range, a range that is close to their initial preference. For example, if consumers are offered a 10ml free sample of yogurt and they initially prefer eating around 50ml, they may still purchase 40ml or more after trying the free sample since 10ml is too little to satiate their appetite. However, if consumers are offered a 30ml free sample, then they might be sufficiently satiated and prefer not buying any more since the price of the next 20ml is higher. Here, in our definition, 30ml would be within the reasonable range of their initial preference, but 10ml would not be.

To test the relevance of the reasonable range, we ran Study 4 with two parts. In a pretest, we elicited participants’ perceptions of a reasonable range for the price of a new keyboard (i.e. the minimum and maximum prices they would spend on a keyboard) as well as their preferred price. Based on the pretest, we manipulated price increases in the form of a sales tax. In the central experiment, we told participants that a 9% sales tax applied to items above a preset cost. The cost varied in terms of where it fell in the pre-tested range of reasonable keyboard prices. We found that participants were willing to spend significantly less on a keyboard if the tax applied to a keyboard at a reasonably low price but not if the tax applied at an unreasonably low price. However, we also found that participants were willing to spend significantly more if the tax applied at a high price, irrespective of whether it was reasonably or unreasonably high.

We manipulated the reasonable price range and price increase in Study 5, in which participants reported their willingness to pay for a sofa set. Participants were told that they would pay for the sofa with two credit cards, one with a high interest rate and the other with a low interest rate. The low-rate card had a spending limit of $100 (vs. $400). We replicated the basic effect in the narrow range conditions (i.e., the higher card suggested that the sofa should cost around $500 to $1,000), but found the opposite in the wide range conditions (i.e., purchase should cost $100 to $1,300). We tested perceived reasonability of certain prices as possible mediators of the effect in Study 6.

In summary, we found that 1) consumers may purchase fewer units of a product if the unit price of the product is discounted (or free) up to a certain quantity than if there is no discount; 2) this basic effect is moderated by how close that quantity is to the quantity that consumers initially preferred.

The Influence of Categorical Framing on Budgeting

EXTENDED ABSTRACT

Consumers frequently set budgets for various types of consumption. The budget that they set for various mental accounts can have a significant impact on their subsequent spending behavior (Cheema and Soman 2008). In this work, we investigate how different ways of setting budgets affect the size of the budget that consumers set and, in turn, their actual spending.

Specifically, we test two methods that consumers typically use in personal-finance budgeting. First, consumers can set budgets for different constituent categories in order to derive an overall budget (“categorical framing”). Alternatively, they may set an overall budget with or without considering its constituent categories or components (“overall framing”). We propose that consumers set a higher overall budget when they do so under categorical framing than under overall framing.

Our reasoning consists of two steps. First, categorical (versus overall) framing increases elaboration of the constituent subcategories during budgeting. Prior research on numeric judgment has revealed that unpacking an overall category into its subcategories increases elaboration of each subcategory (e.g., Kruger and Evans 2004; Tversky and Koehler 1994). Second, increased elaboration makes individuals think more about the items that they want and desire. Overall framing limits elaboration, hence individuals are more likely to consider only the expenses that are salient in their minds, which, in most cases, are the necessities; categorical framing leads to increased elaboration, hence individuals are more likely to consider the items that they want and desire besides the necessities. Therefore, categorical framing leads individuals to set a higher overall budget than overall framing.

Study 1 was conducted to test this hypothesis. Participants (N = 117) were randomly assigned to one of three conditions. In the categorical condition, participants were asked to set individual budgets for their next-month spending in six major consumption domains (i.e., accommodation or rent, food and drinks, transportation, entertainment, clothing, and other expenses). The budgets set for the six categories were then summed to derive their overall budget for the month. In the overall-with-reminders condition, participants were asked to set an overall budget for their next-month spending, with the six aforementioned consumption domains provided as examples. Finally, in the overall-without-reminders condition, participants were asked to set an overall budget without being reminded of the consumption domains.

An ANOVA revealed a significant effect of budget framing on participants’ set budgets (F(2, 114) = 10.07, p < .01). Contrast analysis further indicated that participants set a larger budget under categorical framing (M = $785.39, SD = $537.20) than either overall-with-reminders framing (M = $478.27, SD = $321.06; p = .003) or overall-without-reminders framing (M = $387.24, SD = $329.49; p < .001). There was no significant difference in budget between the two overall-framing conditions (p = .22).

Since study 1 did not reveal a significant budget difference between the two overall-framing conditions, we included only the overall-with-reminders condition in the studies reported later as a more conservative test: Compared with overall-without-reminders framing, overall-with-reminders framing provides individuals the same amount of information about constituent subcategories as categorical framing does.

Study 2 was conducted to test whether the effect of categorical framing on set budget is due to greater consideration of wants and desires that categorical (vs. overall) framing induces. The procedure of study 2 was similar to study 1 with two exceptions. First, we asked participants (N = 96) to set budgets for next-week spending. Second, we added a process measure. Specifically, we asked participants to indicate the extent to which they agreed with the following statements on a 7-point scale: “I focused on the items that are desirable;” “I focused on the items that I would love to spend on;” “I focused
on what I want to buy” (These three items were averaged to derive a want-focus index, α = .76).

Replicating the results of study 1, participants set a larger budget under categorical framing (M = $170.41, SD = $111.12) than overall framing (M = $127.00, SD = $81.50; F(1, 94) = 4.84, p = .03). As expected, categorical framing (M = 4.80, SD = 1.22) made participants focus more on what they wanted than overall framing (M = 4.34, SD = 1.35; F(1, 94) = 3.04, p = .08). Furthermore, mediation analysis (Preacher and Hayes 2008) revealed that categorical framing had a marginally significant effect on want focus (β = .46, p = .08), and that controlling for categorical framing, want focus had a significant effect on set budget (β = 18.92, p = .01). Because the 95% confidence interval ([.26 to 27.56]) for the indirect effect did not include 0, the mediation was significant.

Study 3 was conducted to test whether categorical (vs. overall) framing increases individuals’ spending. At a department store entrance, shoppers (N = 230) were approached to complete a short survey in exchange for a free-gift coupon. Embedded in the survey was the framing manipulation. In the categorical condition, shoppers were asked to estimate how much they would spend in each of the nine product categories sold by the department store. In the overall condition, they were asked to estimate how much they would spend in the store overall with the nine product categories provided as examples. After participants had finished their shopping, we collected shoppers’ receipts when shoppers redeemed their coupons.

Replicating the results of studies 1 and 2, shoppers set a larger spending budget under categorical framing (M = $197.36, SD = $171.91) than overall framing (M = $80.17, SD = $50.64; F(1, 228) = 50.25, p < .001). More importantly, using actual spending as the dependent variable, an ANOVA revealed that shoppers spent more under categorical framing (M = $81.70, SD = $89.10) than under overall framing (M = $61.62, SD = $66.21; F(1, 228) = 3.79, p = .05).

In conclusion, we demonstrate across three studies that categorical (vs. overall) framing leads individuals to set a higher budget and also spend more. This framing effect is due to categorical (vs. overall) framing leading individuals to think more about what they want.

**Spending or Stockpiling: Consumers’ Decisions to Redeem Loyalty Program Points**

**EXTENDED ABSTRACT**

Loyalty programs are designed to reward customers for buying more or buying more frequently from a firm. Typically, customers earn points for the dollar value of the purchases they make (e.g., United Airlines’ Mileage Plus program awards points for each dollar spent) or the number of purchases they make (e.g., My Starbucks Rewards customers initially earn points for each transaction), which can then be exchanged for products and services. In a sense, these loyalty program points function as a currency that consumers can spend on products and services instead of spending money.

Over the past several years, many loyalty programs have tried to make the points earned by their members more valuable by making them more fungible (e.g., allowing members to redeem points on other ecommerce sites and to pay with a combination of points and money; Dreze and Nunes 2004). However, we argue that there are key differences in the way consumers spend points compared with money. For example, consumers may feel more justified in spending loyalty points than cash on indulgences (Kivetz and Simonov 2002), and using currencies other than cash reduces the pain of paying (Prelec and Loewenstein 1998). Moreover, research suggests that consumers may derive value from “stockpiling” rather than spending loyalty program points, even when the points are easy to redeem and the points have no value outside the loyalty program (Stourn et al. 2015).

We examine differences in the way consumers think about loyalty program points as compared to money, and how they choose whether to make a purchase with loyalty program points or money. We find that consumers’ choices to use loyalty program points or money for a specific purchase are systematically shaped by the design characteristics of the loyalty program. For example, loyalty programs vary in the number of points they award per dollar spent. Some programs, like My Starbucks Rewards, give customers very few points per dollar: one star is awarded per multiple dollar transaction. Other programs, like United Airlines’ Mileage Plus, give customers many times more points than the dollars they spend: for non-elite members, five points are awarded per dollar spent. Recent research on numerosity effects suggests that the conversion ratio between loyalty program points and the currency consumers typically use can lead to systematic overspending or underspending when redeeming loyalty program points (Raghubir and Srivastava 2002; Wertebroch et al. 2007). Raghubir and Srivastava (2002) show that when the nominal value of a new currency is a multiple of the home currency (e.g., points in the Mileage Plus program), consumers tend to spend less, but when the nominal value of a new currency is a fraction of the home currency (e.g., stars in My Starbucks Rewards), consumers tend to spend more. Thus, loyalty program design characteristics, such as the number of points awarded per transaction or per dollar spent, can shift consumers’ preferences for using loyalty points or money when purchasing goods and services.

In a series of studies, we show that consumers’ willingness to spend points vs. money is systematically influenced by several loyalty program design characteristics that influence the perceived conversion rate between points and money. In our first study, 358 participants imagined that they were purchasing airline tickets for a series of five trips they would take over the next year. For each trip, they were given a budget in both points and dollars, and they decided whether to redeem their points or pay in dollars and save the points for other trips. We varied between subjects whether participants received training to help them understand the conversion between dollars and points, the ease of mentally converting points to dollars, and the numerosity of loyalty program points. We also varied the price level of the flights within subjects. Consistent with past research (Stourn et al. 2015), we find that participants tend to “stockpile” loyalty points even though points have no value outside the decision context. We also find significant effects of training, numerosity and price level on participants’ willingness to redeem points. These manipulations influence the perceived conversion ratio between loyalty program points and money, such that points seemed more valuable relative to money in some decision contexts than in others. However, one limitation of our first study is that we do not know whether these results are due to the specific nature of loyalty program points or whether they are more general to spending in an unfamiliar currency.

In our second study, we addressed this limitation by comparing consumers’ choices between spending loyalty program points vs. money to their choices between spending in a familiar vs. unfamiliar currency. We asked 386 participants to imagine they would be visiting friends in three different cities. In one condition, participants chose whether to spend loyalty program points vs. dollars, and in another condition, they chose whether to spend foreign currency vs. dollars. The foreign currency we chose for this study has been used in previous work examining numerosity (Wertebroch et al. 2007). Using this hypothetical currency allowed us to manipulate the numerosity and stability of the exchange rate for the loyalty program.
points and foreign currency in exactly the same way, providing a relatively clean test of the generalizability of our results across multiple currencies.

Across these two studies, we see quite clearly that the design characteristics of loyalty programs – such as the numerosity of loyalty program points, the stability of points prices, and the price level of the items that can be purchased with points – have systematic and significant effects on consumers’ willingness to spend loyalty program points instead of stockpiling them. Because these design factors influence the perceived value of loyalty program points, they are critical to consider when thinking about how to motivate consumers to join loyalty programs and earn points as well as when thinking about how to engage members as they stockpile and redeem their points.

**Mental Accounting of Guilt: Decoupling Guilt from Consumption**

**EXTENDED ABSTRACT**

Indulging, or consuming a vice, elicits two separable outcomes: intrinsic enjoyment and guilt (Ramanathan and Williams 2007; Chen and Sengupta 2014). We propose that the timing of a decision to indulge in relation to the indulgence episode itself can alter consumers’ overall utility during consumption by decoupling the guilt associated with the choice from that associated with consumption. In particular, we demonstrate that “precommitting” or planning in advance to consume a vice reduces guilt, but does not affect intrinsic enjoyment, providing higher net utility at the time of consumption.

Failure at self-regulation is one common source of consumer guilt (Dahl, Honea, and Manchanda 2003), an unpleasant emotional state characterized by feeling one has fallen short of his/her internal standards of conduct (Baumeister, Stillwell, and Heatherton 1994). This self-conscious emotion can emerge quickly (Ramanathan and Williams 2007) and decays over time (Kivetz and Keinan 2006). We propose that consumption of a vice elicits guilt associated separately with the choice to indulge and with the experience of indulgence. Reaching the decision to indulge brings about the former, which can then decay in the period leading up to the actual indulgence experience. As a result, the net guilt felt at the point of consumption will be lower.

The result of this decoupling process aligns with that of Prelec and Loewenstein (1998), who find that the awareness of having to pay for an experience reduces utility during the experience itself. For example, going on a cruise vacation and knowing one must pay for it later can reduce enjoyment of the vacation in the moment. However, pre-paying for the vacation before it begins can prevent this attenuation effect. In a similar fashion, we show that consumers can mentally pre-pay for the “sin” of consuming a vice and increase utility from consumption.

In study 1, participants who recounted a time in which they precommitted to indulge (vs. those who recounted a time in which they made the decision in the spur of the moment) indicated feeling less guilty (\(t(200) = 4.55, p < .001\)) and regretting the indulgence less (\(t(208) = 2.98, p < .01\)). In turn, these participants also indicated higher overall enjoyment of the indulgence (\(t(208) = 2.44, p = .02\)), and felt happier about having indulged (\(t(206) = 3.57, p < .001\)). According to our theorizing, decision timing should affect net enjoyment through its influence on negative self-conscious emotions, but should not affect the intrinsic pleasure the experience itself provides. As expected, after controlling for feelings of guilt and regret, the effects of condition on enjoyment and net happiness were no longer significant.

In study 2, we sought to directly control for any differences due to the types of indulgent experiences to which participants may choose to precommit. Participants read three scenarios in which two focal actors both indulged in the same experience. However, in each scenario, one actor reached the decision to indulge with more time before the indulging episode. As predicted, across all scenarios, this actor was expected to feel less guilt (\(p’s < .001\)), to experience less regret (\(p’s < .001\)), and to feel happier about having indulged (\(p’s < .01\)).

In study 3, we directly induced indulgence guilt in a controlled laboratory setting. At the beginning of the experiment, half of participants (“precommiters”) were told they would be taking part in a taste test later in the session and could choose between \(\frac{1}{2}\) of a Krispy Kreme glazed donut and 3 baby carrots. They made their selections and then proceeded to a filler task. The other half of participants began the filler task immediately upon entering the laboratory. One-by-one, each participant in this “immediate” condition was taken to a separate room, learned about the taste test, chose a food option, and immediately consumed the selected food. After eating, each participant was interviewed by research assistants about his/her food choice and the thought process that led to its selection. After each participant in the immediate condition had completed the taste test and the interview, the precommitters individually consumed their preselected items and were interviewed. The percentage of participants choosing the indulgent food (the donut) over the virtue food (carrots) did not differ by condition (precommitters: 61.1%; immediate condition: 60.0%; \(\chi^2(1) = 0.01, p = .9\)).

The vocal responses of participants who had selected the indulgent food (the donut) were analyzed using Layered Voice Analysis software to identify several emotions (Nemesysco 2009). These emotions loaded onto 3 factors (1: energetic, excited, angry, and concentrated; 2: upset, stressed, uncertain, and embarrassed; and 3: content). Responses differed by condition only on factor two: precommiters expressed significantly less stress, uncertainty, embarrassment, and upsetness in the interview than did immediate participants (\(M_{\text{precommit}} = -0.17\) vs. \(M_{\text{immediate}} = 0.18, t(121) = -2.03, p < .05\)). Thus, precommitting to indulge lowered the negative emotions participants experienced during an indulgence episode.

In study 4, we will show that precommitting to vices changes consumers’ actions and intentions following consumption. Existing research suggests that guilt induces a motivation to atone for transgressions and engage in reparative behaviors (e.g. Tangney et al 1996; Lindsay-Hartz, De Rivera, and Mascolo 1995). As precommitting to consume a vice results in less guilt at the time of consumption, it should produce less motivation to engage in reparative actions thereafter.

In four studies, we find that separating the decision to consume from a consumption episode can reduce the amount of guilt experienced during consumption, increasing net utility at the point of consuming. This work suggests an additional benefit of a decision to “precommit to an indulgence.” Kivetz and Simonson (2002) propose that consumers may select an indulgent reward (rather than cash) to receive in the future as a means to precommit to treating themselves to pleasurable products and experiences, which they otherwise might forgo for more utilitarian necessities. We build on this work to suggest that, not only will consumers experience more indulgences by precommitting to consume them, but they will also appreciate those indulgences more.
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