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# The Exception Is the Rule: Underestimating and Overspending on Exceptional Expenses

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Purchases fall along a continuum from ordinary (common or frequent) to exceptional (unusual or infrequent), with many of the largest expenses (e.g., electronics, celebrations) being the most exceptional. Across seven studies, we show that, while people are fairly adept at budgeting and predicting how much they will spend on ordinary items, they both underestimate their spending on exceptional purchases overall and overspend on each individual purchase. Based on the principles of mental accounting and choice bracketing, we show that this discrepancy arises in part because consumers categorize exceptional expenses too narrowly, construing each as a unique occurrence and consequently overspending across a series of discretely exceptional expenses. We conclude by proposing an intervention that diminishes this tendency by helping consumers consider their spending on exceptional items as part of a larger set of purchases.

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Imagine that one of your favorite bands is performing nearby. While the performance costs more than you would ordinarily spend, you have never seen this band live and decide that the experience is well worth the cost. The following week your TV breaks. Although you could buy a replacement relatively cheaply, you only buy a new TV once every several years and so want to spend more on a top-of-the-line model. And the week after that, you are celebrating your tenth wedding anniversary. Since this is a once-in-a-lifetime occurrence, it is clear that the occasion warrants a splurge. In each instance, it seems reasonable to make a budgeting exception given the special nature of the spending and the low likelihood that a similar situation will recur anytime soon.

Like consumers, businesses face exceptional costs such as catastrophe-related repairs or expenses associated with a merger. The US Generally Accepted Accounting Principles define extraordinary items as those “distinguished by their

unusual nature and by the infrequency of their occurrence” (Accounting Principles Board opinion 30). They explicitly instruct businesses to identify these expenses on their income statements to allow for comparability across reporting periods. Toward this end, financial analysts conventionally disregard these expenses when evaluating earnings reports and making projections for future earnings potential. Since these specific expenses fall outside the normal course of business and are unlikely to recur, logical reasoning suggests that they should be largely ignored for forecasts about the future. We propose that consumers intuitively adopt the same accounting principles used by financial analysts, isolating exceptional expenses and giving them special treatment. In each case, people seem to perceive the normative budgeting process as one that excludes exceptional purchases.

However, for both businesses and consumers, a collection of unique events can have aggregate effects that may alter recordkeeping, forecasting, and spending to such an extent that they should be included in the budgeting process. Independently, each of the events described puts a temporary dent in a budget; together, they can have substantial consequences for long-term financial planning. In this article, we investigated mental accounting for exceptional expenses, examining people’s ability to forecast spending and their willingness to pay for exceptional products. We define exceptional items as those that consumers perceive to be special and unusual or purchased infrequently, and we contrast them with ordinary items, which consumers perceive to be common and purchased frequently. In addition to product-specific characteristics (such as size or originality), situa-

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tional factors (such as purchasing an item while traveling or for an important event) could prompt categorization of a purchase as exceptional. Although purchases fall along a continuum from ordinary to exceptional, we dichotomize them here for the purpose of investigation.

In this article, we show that while people are fairly adept at forecasting future costs and determining how much to spend on ordinary items, they both underestimate future spending on exceptional purchases overall and overspend on each individual purchase. We provide evidence that this discrepancy arises in part because consumers categorize exceptional expenses too narrowly. They construe each potential purchase as a relatively rare occurrence, and consequently they overspend across a series of discretely exceptional expenses. We proposed an intervention that diminishes this tendency by helping consumers consider their spending on exceptional items as part of a larger set of purchases.

Understanding how consumers account for exceptional expenses is critical for understanding financial planning and purchasing behavior. Many of the largest consumer expenditures, such as electronics, gifts, and property purchases, are clearly exceptional. Additionally, companies have the ability to tailor purchases, and marketers have the ability to frame them, to be more or less exceptional, which highlights the critical role that this class of products plays in both marketing campaigns and consumer welfare.

## BUDGET FORECASTING

The ability to estimate future spending accurately is an important part of the budgeting process, necessary for planning and determining how much money to allocate for any single purchase as well as across spending and saving categories. Substantial research has investigated planning errors, focusing on nonbudgetary domains but with extensions to financial planning (e.g., Buehler, Griffin, and Ross 1994, 2002; Newby-Clark et al. 2000; Peetz and Buehler 2009). For example, people are notoriously inaccurate when estimating task completion times; they make overly optimistic predictions and underestimate how long it will take to finish a task (e.g., Buehler et al. 1994). One reason for this bias is that people tend to attribute past prediction mistakes to specific situational factors. This overly narrow view of the specific circumstances that caused a prior error prevents people from learning from their mistakes and leads them to ignore prior experiences that may be relevant to future projections. In particular, people tend to create estimates by laying out a plan of action that they think is most likely for completing the task at hand rather than relating the current forecast to similar tasks that have occurred in the past (Kahneman and Lovallo 1993). They assume that the plan will be executed as intended and neglect to incorporate negative surprises, which would be difficult to foresee and which may slow progress and delay completion (Jacoby et al. 1984; Sniezek 1980).

Insights from the research on planning fallacies suggest that people are more likely to form biased predictions when forecasting exceptional rather than ordinary expenses. Con-

sumers should expect to make ordinary purchases when they are initially constructing a spending plan, and they should therefore have little difficulty incorporating these into their forecasts. In contrast, consumers may not easily foresee specific exceptional expenses. Because of the unusual nature of exceptional expenses, a specific exceptional expense may not recur, and it may thus be omitted from future spending estimates entirely, instead appearing as an unforeseen negative surprise. When consumers construe a particular exceptional expense as unique, they are less likely to incorporate similar future exceptional expenses into their budget forecasts, which in turn encourages them to overspend on the present expense. Incorporating prior exceptional expenses as a class of goods into future spending estimates should increase consumers' spending expectations and lead to more accurate predictions.

To some degree, consumers do understand that they need to leave a buffer to account for unforeseen spending when setting budgets or making predictions (Stilley, Inman, and Wakefield 2010; Ulkumen, Thomas, and Morwitz 2008). However, when making spending estimates (especially for the near future), consumers' high degree of confidence in their ability to predict spending can lead them to underestimate the size of the buffer needed and to insufficiently elevate the amount they plan to spend for specific purchases (Ulkumen et al. 2008). Consequently, we expected people to make larger projection errors when anticipating exceptional purchases than when estimating ordinary purchases.

## TRACKING EXPENSES

In addition to making forecasts about the future, consumers keep track of their current spending by recording purchases that they make, either implicitly or explicitly. They do this by grouping expenses into mental accounts, and differences in how these accounts are formed have been shown to influence spending (e.g., Kahneman and Tversky 1984; Thaler 1985; Tversky and Kahneman 1981). As recorded spending in a given category increases, it reduces the likelihood of future spending from the same category (Heath and Soll 1996; Soman 2001; Soman and Lam 2002). Literature on mental budgeting has recognized a distinction within the task of recording expenses between the booking and posting processes (Heath 1995; Heath and Soll 1996). Booking requires consumers to notice expenses and record them in their accounting system generally; posting requires them to assign expenses to a specific account. Both stages are necessary for an expense to affect a person's budget, and failures to execute either step of the process are likely to lead to normative errors such as overconsumption or underconsumption. We propose that exceptional expenses (relative to ordinary expenses) may pose greater challenges for consumers in both the booking and posting processes.

Often ordinary expenses that are small and routine are not booked at all, such as purchasing a daily cup of coffee (Thaler 1999). Failure to book these expenses and acknowledge their aggregate costs may account for the contradictory behavior seen in the pennies-a-day effect, where

consumers are willing to spend more when they consider larger expenses that have been broken down into smaller expenses (Gourville 1998). For example, donors may be more likely to commit to giving \$1 each day for a year than to making a single \$365 contribution to the same cause. Consumers ignore small expenses because they fail to understand how such small expenses could meaningfully affect their budget. However, this failure to book expenses may not be limited to small costs. Given the perception that exceptional expenses are unique, consumers may neglect their importance in the budgeting process as well. Regardless of their potentially large size, if a given expense occurs with very low frequency, consumers may consider it insignificant for budgeting since they do not expect it to recur. Consequently, rather than failing to aggregate across small expenses, as is the case for ordinary items, consumers may actually fail to aggregate across large expenses in the case of exceptional items.

Once an expense is booked, consumers must choose which budget account to post the expense to (e.g., Henderson and Peterson 1992). The harder it is to determine to which category a particular expense belongs, the more likely it is that errors will occur in this part of the mental budgeting process (Cheema and Soman 2006; Heath and Soll 1996). This suggests that the posting process may also be more problematic for exceptional expenses than for ordinary ones, since these expenses may be harder to classify into a single category. In particular, when people are motivated to purchase a particular item, they will take advantage of vagueness in the posting process that allows them to consider the expense as falling within their allotted budget (Cheema and Soman 2006; Poynor and Hawes 2009). For example, Cheema and Soman (2006) presented participants with the opportunity to go to dinner with friends at a restaurant with live music. They showed that people were more likely to classify this expense as part of their food account when they had additional funds in their food account but no additional funds in their entertainment account; this classification reversed when the entertainment account rather than the food account had funds remaining. Such flexibility is hard to accomplish for purchases that fall clearly within a single spending category.

Classification of exceptional expenses could vary based on the specific expense and a person's natural budgeting categories. For example, the purchase of a new suit for a family wedding could fall squarely into the clothing budget or it could be considered midway between a clothing and special occasion budget. Alternatively, the expense could be considered so exceptional that the consumer creates a new category for that expense alone. One open question is how consumers account for items that could fall into an exceptional budget category, such as a category for special occasions. In contrast, ordinary items may be more likely to fall into a single budgeting category; instead of purchasing a new suit for a wedding, purchasing a new sweater for the winter would be easier to classify directly as a clothing expense and would leave less room for interpretation.

## CURRENT RESEARCH

In the current research, we asked how consumers account for exceptional expenses and how this process may differ from accounting for ordinary expenses. Given the special and unusual nature of exceptional expenses by definition, any specific exceptional expense is unlikely to recur. While consumers may acknowledge and record each individual expense, the reasoning that each expense is unique could lead consumers to omit these expenses from future budget predictions, as financial analysts often do when evaluating companies. While it might be rational to expect that these specific events will not recur (as dictated by accounting standards for businesses), this reasoning process could lead consumers to underestimate their budgets in cases where discretely exceptional expenses in one period are replaced with different exceptional expenses in the next period. If consumers broadly framed the individual exceptional expense as one in a series of unique costs, we would expect that they would be more likely to incorporate similar costs into their spending projections. A similar error is unlikely to extend to ordinary products since consumers would anticipate that the expense (e.g., groceries, rent, movie tickets) would recur in each accounting period. Therefore, we expect that:

**H1a:** Consumers will underforecast exceptional expenses.

**H1b:** Consumers will accurately forecast ordinary expenses.

These first hypotheses focus on biases that arise at the planning phase when people consider spending on exceptional purchases. However, since those biases are likely to reflect general psychological processes that apply across a range of contexts, we also expect consumers to show biases at the point of purchasing exceptional goods. Accordingly, we predicted that consumers would spend a higher amount on each exceptional expense when considered one at a time than when making several purchases of exceptional items at once. Consumers may have trouble valuing any exceptional item on its own, in part because they do not purchase any specific item with regularity. While difficulty valuing an item generally could lead to either overspending or underspending, we predict that this will lead to overspending in the case of exceptional expenses where, in isolation, each exceptional expense may seem unique and worthy of additional costs. This could occur either because consumers overvalue the item itself due to their overestimation of how special the item is (e.g., Brock 1968; Franke and Piller 2004; Groth and McDaniel 1993; Lynn 1991; Lynn and Harris 1997; Simonson 2005) or because they believe that they can afford to spend more for a cost that will only occur once. If a purchase is exceptional and rare, and one believes that price brings quality, consumers should spend as much as they can on the purchase to maximize utility over time. When thinking of a good in isolation there is, in effect, no budget constraint being applied to this mental calculation, so one overspends. However, when purchase de-

cisions about a series of exceptional expenses are made simultaneously, the juxtaposition reminds consumers that their budget must be managed across a range of competing expenses. Consumers should acknowledge a connection across items and therefore be willing to pay less for each, considering each one to be less special and to occur with some frequency. We did not anticipate a similar discrepancy in spending for ordinary items since consumers are more likely to recognize each ordinary item as one in a series regardless of whether the items are presented sequentially or simultaneously. Therefore, we expect that:

**H2a:** Consumers will pay more for exceptional items when they are presented sequentially versus simultaneously.

**H2b:** Consumers will pay the same amount for ordinary expenses regardless of whether they are presented sequentially or simultaneously.

Note that in the hypotheses described and throughout this article, we assume that consumers do not face short-term liquidity constraints (i.e., they do have access to money to spend if they choose). One reason consumers might evaluate exceptional expenses differently when several such items are presented independently versus together could be that these items are less likely to be seen as typical members of natural categories. As demonstrated by prior research in mental accounting, lacking an obvious category allows for malleability in the accounting process (Cheema and Soman 2006; Heath and Soll 1996). The absence of a clear category could lead consumers to create new budgeting accounts (see Barsalou 1983) that encourage overly narrow groupings of exceptional expenses, helping perpetuate the idea that the items are scarce or exclusive, which could lead to higher spending (e.g., Groth and McDaniel 1993; Lynn 1991). Once consumers view items as part of a narrower category of goods, they may also be more likely to neglect other expenses when considering their overall budget constraint and therefore be more willing to pay more for the items. Conversely, prompting consumers to consider exceptional items as part of a broader category of goods could lead consumers to pay less for the same items. Therefore, we expect that:

**H3:** Consumers will categorize exceptional expenses more narrowly than they categorize ordinary expenses.

**H4:** Consumers will pay more for the same item if they perceive it as part of a narrower class of goods.

**H5:** Consumers will pay less for an exceptional item when prompted to classify it alongside other exceptional items.

Across seven experiments, we showed, first, that consumers forecasted ordinary expenses accurately but underestimated how much they would spend on exceptional products

(study 1). We then demonstrated that consumers were willing to pay more for exceptional items when they were presented one at a time than when they were presented all at once and that the same spending discrepancy did not extend to willingness to pay for ordinary items (study 2). Further, we examined a potential mechanism underlying this effect—namely, that people group exceptional expenses more narrowly than they group ordinary expenses (studies 3A and 3B). And we showed that attributing an item to a narrower category (regardless of whether the item is exceptional) resulted in increased willingness to pay for the item, even when the item itself was identical (studies 4A and 4B). We concluded by testing an intervention that encouraged participants to consider exceptional expenses as part of a broader class of goods and showed that it effectively reduced the amount that consumers were willing to pay for these items (study 5).

## STUDY 1: FORECASTING EXPENSES

The current research proposed that consumers treat ordinary and exceptional purchases differently for budgeting purposes. Consumers should be better at budgeting for ordinary items, both by making more accurate forecasts and by spending more consistently across contexts. We therefore hypothesized that consumers would underestimate future spending on exceptional items (hypothesis 1a) but that they would be fairly accurate in estimating spending on ordinary ones (hypothesis 1b). In the first study, we tested this hypothesis by asking consumers to predict spending over the next week for each type of expense and then compared this to their recollection of the expenses they had actually incurred.

### Method

*Participants.* Two hundred and eighty-seven undergraduate participants were recruited from New York University in exchange for course credit, and 64 of these participants completed both rounds of the survey. Participants (42% female) ranged in age from 18 to 23 years ( $M = 19.5$ ). This final sample was demographically indistinguishable from the initial sample, suggesting that attrition rates were not tied to participants' age or gender.

*Design and Procedure.* In the first stage of the study, participants were presented with a pen and paper survey. Participants were first given a description of exceptional or ordinary items, in a counterbalanced order. The description of exceptional items read:

Sometimes we purchase items outside the normal course of everyday events. These are often one-time expenses that are not expected to recur, or that occur only infrequently. For example, the cost of going to a nice restaurant to celebrate a special occasion or replacing a broken TV would be considered this type of item.

The description of ordinary expenses read:

Sometimes we purchase items within the normal course of everyday events. These are regular expenses that are expected to recur with some frequency. For example, the cost of eating dinner on a weekday night or paying your monthly cable bill would be considered this type of item.

After reading each description, participants were asked: "How much money do you expect to spend on the type of item described just above over the next week?" Participants then had the option to give their e-mail address to participate in a follow-up study for the chance to win a gift certificate to Amazon.com.

One week after taking the initial study, participants who included their e-mail addresses were contacted with the link to another survey administered online. In some cases, participants (about one-third) received an additional follow-up e-mail to encourage participation. This survey presented them with the same descriptions of special and ordinary items (again in counterbalanced order), but this time participants were asked to recall how much they had spent on each type of item over the previous week. To prompt participants' memory for their purchases, we provided them with a list of common examples of exceptional expenses (e.g., a new computer, airplane tickets, jewelry) and ordinary expenses (e.g., phone bill, rent, groceries) and gave them the opportunity to update their estimates.

## Results and Discussion

We matched individual participant data from the follow-up survey with the survey taken a week earlier to allow for within-subject comparisons. We relied on participants' initial spending estimates and final memory reports when conducting analyses, and thus we included only data from participants who completed both portions of the survey. Additionally, we omitted data from five participants who reported estimates or spending predictions more than three standard deviations from the mean. Note that responses collected in the follow-up survey before the memory prompt were consistent with the findings reported below, as were responses including outliers.

Results supported hypotheses 1a and 1b, that people underestimate how much they will spend on exceptional but not ordinary purchases. For exceptional expenses, 54% of participants reported increases in spending relative to predictions, 25% reported lower spending, and 20% reported no change. For ordinary expenses, 39% reported increased spending, 51% reported decreased spending, and 10% reported no change. A contrast analysis comparing predictions for spending on exceptional items to recalled spending on exceptional items or ordinary items, regardless of whether they were being predicted or recalled, revealed that participants' estimates of spending for exceptional items ( $M = \$39$ , median = \$30) was lower than estimates in the other conditions ( $M = \$78$ , median = \$50;  $F(1, 235) = 15.15$ ,  $p < .001$ ,  $\eta^2 = .06$ ).

A 2 (time: prediction vs. recall) by 2 (item type: exceptional vs. ordinary) within-subject analysis of variance revealed that there was a main effect of type (exceptional  $M$

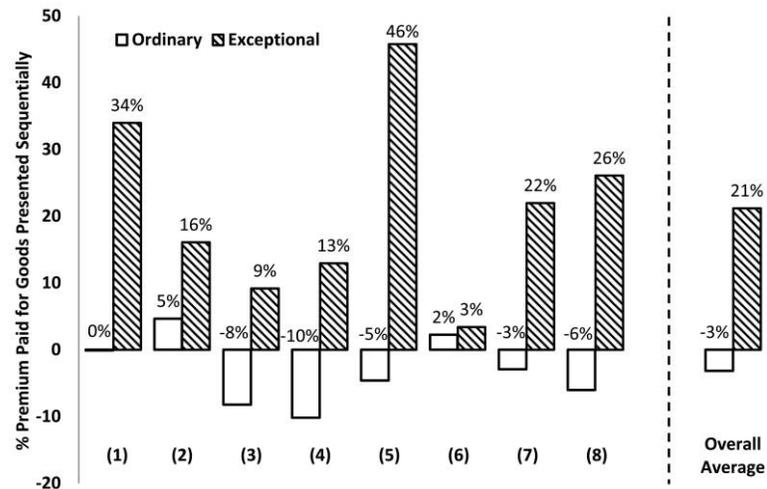
= \$55, median = \$35 vs. ordinary  $M = \$82$ , median = \$60;  $F(1, 58) = 15.15$ ,  $p < .001$ ,  $\eta^2 = .21$ ), but this main effect was qualified by a significant interaction between the time and item type ( $F(1, 58) = 6.76$ ,  $p = .012$ ,  $\eta^2 = .10$ ). Follow-up tests confirmed that participants underestimated the amount that they would spend on exceptional expenses when making spending predictions only 1 week into the future ( $M = \$39$ , median = \$30, for predicted, vs.  $M = \$70$ , median = \$50, for spent;  $F(1, 58) = 9.46$ ,  $p = .003$ ,  $\eta^2 = .14$ ). The same participants were able to predict upcoming ordinary expenses with remarkable accuracy ( $M = \$83$ , median = \$50, for predicted, vs.  $M = \$81$ , median = \$53, for spent;  $F(1, 58) = .035$ ,  $p = .852$ ,  $\eta^2 = .00$ ).

## STUDY 2: SEQUENTIAL PURCHASING ENCOUNTERS

The first study provided evidence that consumers forecast their spending on exceptional items less accurately than their spending on ordinary items. But do they also make poorer decisions about how much to pay for exceptional goods? In the present study, we considered consumers to be making counternormative spending decisions when the amount that they were willing to pay for the same item varied depending on whether they considered the item in isolation or alongside other items. In particular, we examined cases where participants were making decisions about purchasing items that were either ordinary or exceptional and varied the context by presenting the items either sequentially or simultaneously. Difficulty valuing exceptional products could potentially lead to either higher or lower spending when these products are presented sequentially versus simultaneously. However, we predicted that consumers would spend more on each exceptional expense when considered one at a time than when making several purchases at once (hypothesis 2a). If participants naturally consider exceptional purchases to be part of a narrow category of goods, then judging these items independently should have no effect on participants' natural framing. We expected that they would express a high willingness to pay for these items since they would consider them to be unique. This would imply both that they warrant a high price because of their special nature (e.g., Groth and McDaniel 1993; Lynn 1991) and that a single purchase would have a minimal effect on their budget, allowing them to spend more on the one-time purchase. However, presenting multiple exceptional items simultaneously should decrease valuation by reminding participants that these purchases are not unique. Instead, they make exceptional purchases with some frequency, and these items collectively cause more strain on their budget. We did not anticipate a similar discrepancy in spending for ordinary items, which we expected consumers to independently understand to be part of a larger set of purchases, regardless of presentation format (hypothesis 2b). Since the stimuli were the same within the ordinary and exceptional conditions, differences in the items themselves (such as differential utility or hedonic value) would not explain willingness-to-pay differences depending on whether the items were presented sequentially or simultaneously.

FIGURE 1

THE PERCENT PREMIUM PAID WHEN GOODS WERE PRESENTED SEQUENTIALLY RATHER THAN SIMULTANEOUSLY IN STUDY 2, BY ITEM



NOTE.—Pairs of ordinary and exceptional items, respectively from left to right, are (1) ticket to a movie versus ticket to a play, (2) DVD versus entrance fee for a museum, (3) dinner with friends versus dinner on a date, (4) parking at the mall versus parking at an amusement park, (5) a bottle of wine versus a bottle of champagne, (6) a bag of popcorn at the movies versus a bag of popcorn at the state fair, (7) ice cream versus cotton candy, and (8) an apple at the supermarket versus an apple at the orchard.

## Method

**Participants.** We recruited 275 participants online through Amazon.com's Mechanical Turk platform (69% females). Participants ranged in age from 18 to 81 years ( $M = 33.94$ ).

**Design and Procedure.** Participants were randomly assigned to either a simultaneous condition or a sequential condition and to one of two categories of items (food or entertainment) in a between-subjects design. Each category contained four exceptional goods and four ordinary goods. Each exceptional good was yoked to an ordinary good that was matched on similarity, price, and specificity, so the only salient difference between the two goods in each pair was how exceptional they were perceived to be. To establish these relationships, a small sample of participants completed a brief informal pilot test. Participants' responses indicated that the exceptional goods were indeed more exceptional than their ordinary counterparts, whereas the exceptional and ordinary goods were reasonably well matched on the other dimensions. In the food category, exceptional items were a bottle of champagne, cotton candy, a bag of popcorn at the state fair, and an apple at the orchard. Their ordinary item counterparts were a bottle of wine, ice cream, a bag of popcorn at the movies, and an apple at the supermarket. In the entertainment category, special items were a ticket to a play, dinner on a date, the entrance fee for a museum, and parking at an amusement park. Their ordinary item

counterparts were a movie ticket, dinner out with friends, a DVD, and parking at the mall.

Participants were asked their willingness to pay for four items. These items were either all ordinary or all exceptional, and all came from the same category of goods. The instructions read: "Please state the highest amount that you would be willing to pay for each of the following items (in US dollars)." Participants in the simultaneous condition saw all four items at once, presented on the same page, and made all four willingness-to-pay evaluations before proceeding. Participants in the sequential condition were required to state their willingness to pay for each item, presented one to a page, prior to viewing the next item. After completing the willingness-to-pay task, they rated how exceptional they considered each of the four items they had seen, presented sequentially for all participants, on a Likert scale from 1 (not at all special) to 7 (extremely special). The order of questions about willingness to pay and ratings of specialness were counterbalanced.

## Results and Discussion

Prior to analysis, willingness-to-pay responses for each item were converted to Z-scores to allow for comparison across items, but see figure 1 for a report of judgments by item. We omitted data from 11 participants who indicated a willingness to pay for items that was greater than three

standard deviations from the mean response from analysis, although results remain consistent when including these responses. Z-scores were recalculated across all items after eliminating these outliers. Patterns of results were the same across categories of goods (food and entertainment), so we pooled data across participants who were randomly assigned to each category. A manipulation check showed that participants in the exceptional condition rated the items they saw to be more special than participants in the ordinary condition did, as intended by the experiment ( $M = 3.54$  vs.  $M = 3.07$ ;  $t(262) = 3.48$ ,  $p = .001$ ).

To analyze the effects of presentation and item type on willingness to pay, we conducted a 2 (presentation: sequential vs. simultaneous) by 2 (item type: ordinary vs. exceptional) between-subjects analysis of variance. There were no main effects of presentation ( $F(1, 260) = 2.90$ ,  $p = .090$ ,  $\eta^2 = .01$ ) or item type ( $F(1, 260) = .13$ ,  $p = .722$ ,  $\eta^2 = .00$ ) on willingness to pay. However, the analysis confirmed that there was a significant interaction between presentation and item type ( $F(1, 260) = 5.39$ ,  $p = .021$ ,  $\eta^2 = .02$ ). Participants were willing to pay more for exceptional items when these were presented sequentially ( $M = .27$ ) than when they were presented simultaneously ( $M = -.22$ ;  $F(1, 131) = 6.53$ ,  $p = .012$ ,  $\eta^2 = .05$ ). This difference did not extend to participants' willingness to pay for ordinary items, which was the same regardless of whether the items were presented sequentially ( $M = .02$ ) or simultaneously ( $M = -.05$ ;  $F(1, 129) = .25$ ,  $p = .615$ ,  $\eta^2 = .00$ ). Furthermore, a contrast analysis comparing the exceptional items presented sequentially to exceptional items presented simultaneously or ordinary items regardless of their presentation order revealed that participants were willing to pay more for exceptional items given sequential presentation ( $F(1, 262) = 6.38$ ,  $p = .012$ ,  $\eta^2 = .02$ ).

These results suggest that consumers pay more for exceptional goods when they encounter them in isolation because they do not automatically consider other similar expenses they may incur in the future. In contrast, they pay relatively less for exceptional goods that are grouped together because the simultaneous consideration encourages consumers to include these additional purchases in their budgets (hypothesis 2a). These changes in willingness to pay for exceptional items based on presentation order cannot be explained by differences in the items themselves since these were held constant between presentation conditions. Interestingly, findings show that consumers pay the same amount for ordinary goods regardless of how they are presented, presumably because common goods always seem part of a larger set (hypothesis 2b). Considering the purchase of one ordinary good may automatically prompt consumers to consider other similar items they would be likely to purchase, even if these goods are not mentioned simultaneously.

### STUDY 3: CATEGORIZATION

The first two studies suggested that people have different mental accounting processes for exceptional and ordinary expenses. Although capable of forecasting accurately for and spending consistently on ordinary expenses, partici-

pants performed poorly on the same tasks—underestimating and overspending—when evaluating exceptional expenses. We hypothesized that this shortcoming arises in part because exceptional expenses are harder to categorize and thus less likely to fall into natural categories, leading consumers to form overly narrow groupings of these costs and ignore other exceptional costs when considering budgets. This could explain why participants failed to learn from prior purchases when estimating future expenses (study 1) and why they spent more on individual exceptional purchases considered in isolation (study 2).

Prior research on choice bracketing has suggested that broad bracketing (i.e., making a series of choices together) is likely to lead to outcomes with higher utility than narrow bracketing (i.e., making each of a series of choices independently; e.g., Read, Loewenstein, and Rabin 1999). Broad bracketing allows for a global perspective involving a more complete set of information that can minimize myopic decision making. Nonetheless, people often fail to bracket broadly even when they have the opportunity to do so. Consumers seem to bracket exceptional purchases more narrowly than ordinary ones (hypothesis 3). Findings from study 2 suggested that consumers bracketed ordinary purchases broadly, even when presented one at a time, and that their natural tendency is to consider these purchases as part of a large category of goods. In contrast, consumers naturally bracket exceptional expenses narrowly, considering each purchase independently. These narrow groupings could help perpetuate the view that exceptional costs are unique and unlikely to recur, leading consumers to omit them from budget forecasts, as demonstrated in study 1. Narrow bracketing could also make it more difficult to evaluate the worth of each item and harder to factor into a larger budget, leading consumers to believe that the products are worthy of a splurge and that they can afford to spend more on each one, as demonstrated in study 2.

One possible account of the patterns observed in studies 1 and 2 (consistent with narrow bracketing) is that participants desired exceptional items more than ordinary ones and were thus motivated to categorize exceptional items more narrowly to justify spending (e.g., Poynor and Hawes 2009). Studies 3A and 3B departed from spending judgments and instead relied on categorization tasks to examine how consumers bracket exceptional and ordinary items naturally. Since the end goal in these studies was to form groups of items rather than to evaluate spending, it seems unlikely that participants would have been motivated to categorize the items narrowly. While motivation may certainly play some role in leading consumers to pay more for exceptional items, these experiments had the ability to distinguish a pure motivational account from a more natural cognitive account of our findings.

In study 3A, we examined how people naturally categorize items that are either ordinary or exceptional, outside of any spending context. In study 3B, we gave participants a budgeting task where they categorized both ordinary and exceptional expenses and also rated the difficulty of doing so.

Across both experiments, we found that participants categorize exceptional items more narrowly than ordinary items.

### STUDY 3A

To investigate the possibility that the way consumers naturally bracket products differs across item type, we asked participants to divide a series of items that were either exceptional or ordinary into groups. Separating items into more groups (with fewer items in each one) would indicate that participants were bracketing these items more narrowly.

#### Method

*Participants.* We recruited 132 undergraduate participants from New York University in exchange for course credit. Participants (59% female) ranged in age from 18 to 22 years ( $M = 19.10$ ).

*Design and Procedure.* Participants were randomly assigned to the exceptional or ordinary condition. In each case, participants were given 30 cards with one item printed on each card. In pretesting, 30 pairs of items were designed to maximize overall product similarity and price similarity within pairs while also maximizing the difference in how exceptional (vs. ordinary) items were perceived to be. In the exceptional condition, participants saw 30 exceptional items, while in the ordinary condition, participants instead saw the matched items that were perceived as less exceptional. A full list of these items can be found in the appendix. Exceptional cards included parking at an amusement park, apple at an orchard, Nutella, and prescription drug for pain relief, while ordinary cards included parking at the mall, apple at the supermarket, peanut butter, and over-the-counter drug for pain relief. All participants were told:

Your task is to sort these cards into categories so that the cards in each category seem similar enough that they belong together. For example, if you were to receive the cards: (1) golden retriever, (2) poodle, (3) tabby cat, you might group the first two together in a “dog” pile and separate the third into a “cat” pile. Alternatively, you could group all three together as house pets, or separate each of the three into its own pile if you see no overarching connections. There are no correct answers and you should sort the cards as you see fit.

Participants sorted the cards into groups and also marked their divisions on paper.

#### Results and Discussion

Participant groupings supported the hypothesis that consumers consider exceptional items to be members of narrower groups than ordinary items (hypothesis 3). Participants in the exceptional condition sorted the cards into significantly more groups than did participants in the ordinary condition ( $M = 6.92$  vs.  $M = 5.65$ ;  $t(130) = 2.75$ ,  $p = .007$ ,  $\eta^2 = .06$ ). These

results suggest that it is harder to categorize exceptional items for mental budgeting purposes. The difficulty in accounting for exceptional expenses may then be responsible for subsequent errors when consumers budget for exceptional purchases. Narrow categorization could explain forecasting errors, by making each specific prior purchasing experience less generalizable to others, as well as a greater willingness to pay for individual products by making each item seem more exclusive and leading people to believe that they have a higher budget to allocate to each one.

### STUDY 3B

Study 3A demonstrated that people bracket exceptional items more narrowly than broad ones. However, since participants either saw ordinary or exceptional products, but not both, the study lacked ecological validity. Consequently, in study 3B we exposed participants to both ordinary and exceptional products to determine whether the effect persisted in a more naturalistic context. To examine this possibility, we gave participants another opportunity to categorize ordinary and exceptional items. Importantly, we used a more natural budgeting task, and we used a within-subjects design so that the same people would be forming groups of ordinary and exceptional items. Thus, if consumers do actually form a single category for exceptional purchases, participants should do so in this experiment as well.

Furthermore, rather than measuring the total number of groups formed within each item type, we calculated how many items were placed into “unique” categories, defined as groups that contained only a single item. In addition to providing converging evidence for narrow categorization of exceptional items, these one-item categories are particularly likely to be created at the moment of purchase rather than being carefully planned beforehand. Items placed in these ad hoc groups would have the potential to be most problematic for the budgeting process, even if consumers continue to record them.

Additionally, the prior study did not directly examine the difficulty associated with making the judgment. Prior research on mental accounting has demonstrated that when an item’s classification is malleable, consumers will take advantage of the ambiguity to find room for this item in their budget (e.g., Cheema and Soman 2006; Heath and Soll 1996). Therefore, people will be more likely to spend on that purchase. In the ensuing study, we directly examine how difficult participants perceive the categorization of exceptional items to be relative to ordinary items. Difficulty categorizing these items would suggest that the budgeting process around these items is likely to be more malleable, allowing for increased spending.

#### Method

*Participants.* We recruited 108 undergraduate participants from New York University in exchange for course

credit. Participants (48% female) ranged in age from 18 to 23 years ( $M = 19.79$ ).

*Design and Procedure.* Participants were presented with a budgeting task. They were told:

Imagine that you are reviewing your spending and trying to organize purchases by grouping them into categories. You have recently purchased all of the items listed on the following page. For each one, please choose which category the items best belong to, and write that label on the line beside the item.

One-half of the participants were instructed to select the label from a predetermined list of 14 possible categories (clothing, dining, entertainment, everyday needs, food, gifts, groceries, housing, investment, leisure, sports, travel, utilities, and wine). The remaining half of the participants (randomly determined) instead constructed their own category labels, with no specific prompts. In addition, all participants were instructed to write how hard it was for them to categorize each item on a scale from “1 = not at all difficult” to “7 = extremely difficult.” Finally, an instructional manipulation check was included that asked participants to write the word “read” on the top of the cover page to show that they had read the instructions (see Oppenheimer, Meyvis, and Davidenko 2009).

On the following page, participants saw a list of 30 items. Across participants, these items were identical to those used in study 3A. However, in the current study, each participant list consisted of 15 ordinary items and 15 exceptional items, presented in alternating order. These items were counter-balanced across participants so that half of the participants saw one set of independent ordinary and exceptional items and the other half of the participants saw the paired exceptional and ordinary items. Participants entered a category label and difficulty rating for each item before completing demographic questions.

## Results and Discussion

Twenty participants failed the instructional manipulation check, indicating that they had not read the instructions, and they were thus excluded prior to analysis, although results remain consistent if they are included. Overall, participants reported more difficulty categorizing exceptional items than ordinary ones ( $M = 2.20$  vs.  $M = 1.82$ ). A within-subjects analysis of variance revealed that item type had a significant effect on the reported difficulty of the categorization task, after including the specific item list that participants saw and whether they were provided with predetermined categories or came up with their own as covariates ( $F(1, 85) = 4.13, p = .045, \eta^2 = .05$ ). Parallel analysis also revealed that participants placed more exceptional items ( $M = 2.82$ ) than ordinary items ( $M = 2.73$ ) into stand-alone categories ( $F(1, 86) = 11.08, p = .001, \eta^2 = .11$ ).

Together, studies 3A and 3B provided converging evidence for the hypothesis that consumers consider exceptional items to be members of narrower groups than they do ordinary items

(hypothesis 3). This preference for narrow categorization remained when participants categorized lists containing only exceptional items (study 3A) and both exceptional and ordinary items (study 3B). Study 3B also revealed that participants have more difficulty assigning exceptional items to groups, which may partly explain why they categorized exceptional expenses more narrowly. Finally, since we observed narrower categorization of exceptional items through categorization tasks independent of any spending judgment, these experiments also rule out a motivational explanation as the sole cause of our findings, although we do not rule out the possibility that it may accentuate the effects observed in our prior studies.

## STUDY 4: SPENDING ON NARROW CATEGORIES

Could the narrow grouping that participants applied to exceptional goods in study 3 lead to overspending? In the current study, we explicitly tested the hypothesis that consumers will pay more for the same item if they perceive it as part of a narrower class of goods (hypothesis 4). We predicted that narrow bracketing would lead to overspending because it would cause consumers to overestimate how special the item is, thus conveying higher utility (e.g., Brock 1968; Franke and Piller 2004; Groth and McDaniel 1993; Lynn 1991; Lynn and Harris 1997; Simonson 2005), and because consumers may believe that they can afford to spend more for a cost that will occur less frequently.

Additionally, we addressed a possible confound of the earlier studies reported here. Namely, while the exceptional and ordinary stimuli were carefully designed to be paired on important dimensions, exceptional purchases differ from ordinary purchases in a variety of ways that could have led to the observed effects. For example, consumers are likely to experience greater uncertainty when generating substitutes for exceptional items and to have less knowledge about how much exceptional items typically cost. We wanted to ensure that the perceived exceptionality of the purchase, rather than extraneous differences between the ordinary and exceptional items, drove differences in willingness to pay. In this study, we controlled the stimuli more tightly by holding the items themselves constant across conditions while varying only how exceptional participants perceived them to be. Therefore, any differences in evaluations of the items must be due to differences in their categorization.

Since study 3 demonstrated that people group exceptional items into smaller categories than they do ordinary items, we altered perceptions of category size in the following study to mimic exceptional expenses (smaller categories containing fewer items) and ordinary expenses (larger categories containing more items) without changing the target items. In study 4A, we prompted participants to consider an item as part of either a broad or narrow class of goods before eliciting willingness-to-pay estimates. In study 4B, we manipulated how heavily populated participants considered an item's category to be before eliciting the same estimates. In each case, we expected participants

to be willing to pay more for items when considering the item to be part of a smaller class of goods.

### STUDY 4A

Participants considered broad or subordinate narrow categories before indicating their willingness to pay for a specific item that was a member of the narrow category (and therefore also a member of the broad category). This manipulation was intended to make participants consider the item to be part of a broad or narrow class of goods respectively.

#### Method

*Participants.* We recruited 190 participants (62% female) online, through Amazon.com's Mechanical Turk platform, in exchange for payment. Participants ranged in age from 18 to 81 years ( $M = 35.81$ ).

*Design and Procedure.* Participants were randomly assigned to the narrow or broad condition. We first asked participants how frequently they purchased items from a particular category, which was either narrow or broad, such that the narrow category was a subset of the broad category. For example, participants were asked: "How often do you purchase home electronics?" in the narrow condition, and "How often do you purchase items for your home?" in the broad condition. After being prompted to consider either a narrow or broad category, all participants indicated their willingness to pay for a specific item that belonged to both categories (e.g., a TV).

Participants made judgments about two items, which were arbitrarily selected from three different groups (home goods, leisure and recreation, or presents). Each participant saw one item and corresponding questions from the narrow condition and one from the broad condition, presented in a random order.

#### Results and Discussion

Prior to analysis, we converted all willingness-to-pay judgments for individual items to Z-scores to allow for within-subjects comparison across items. Subsequently, we eliminated judgments that fell more than three standard deviations from the mean. This led to the exclusion of 10 data points overall. We then restandardized the willingness-to-pay judgments across items having excluded these outliers. We conducted a 2 (within condition: narrow vs. broad) by 6 (between condition: products evaluated) mixed analysis of variance to examine the effect of condition on the willingness-to-pay estimate. This analysis revealed that participants were willing to pay significantly more for the same item in the narrow condition than in the broad condition ( $Z = .10$  vs.  $Z = -.12$ ;  $F(1, 175) = 5.89$ ,  $p = .016$ ,  $\eta^2 = .03$ ). The particular item being judged did not alter the pattern of results nor was there an interaction between the item and the condition ( $p > .25$ ). This result supported the hypothesis that perceiving an item to be part of a smaller

category of goods leads consumers to pay more for that item. Combined with the results of study 3, which showed that participants were likely to consider exceptional items as part of narrower categories than ordinary items, these findings suggest that considering exceptional items to be part of a narrow category might explain in part why consumers tend to spend more on these items.

### STUDY 4B

While study 4A provided evidence that perceiving an item to be part of a narrower category of goods may increase spending, mentioning different categories may have altered the specific items participants were considering when making their pricing estimates (e.g., two different models of TVs) and influenced the observed pattern of results. Furthermore, differences in willingness to pay estimates could be driven by a numeric anchoring effect. If a narrow category (e.g., "home electronics") evokes thoughts of a different, and more expensive, basket of goods than a broad category (e.g., "items for your home"), then anchoring on these higher-priced goods could explain why people generate higher willingness-to-pay judgments for a given item when primed with the former than the latter. In the present study, we held the category descriptions constant so that participants would be anchored on the same basket of items. Instead, we relied on a manipulation of metacognitive experience across conditions to change participants' perception of the number of items that typically constitute a particular category.

Previous findings on metacognitive priming have shown that the subjective ease of retrieval affects perceptions about the frequency of an event's actual occurrence (Schwarz et al. 1991). Following this reasoning, participants prompted to recall only three items from a given category should have been able to conjure those items with relative ease, leading them to conclude that the category includes many items. In contrast, those prompted to recall 10 items from the same category should have found the task challenging and therefore perceived the category to contain a smaller set of items. We hypothesized that participants would be willing to spend more money on items that they considered part of a smaller set (hypothesis 4). Since the same purchases should seem relatively more exceptional (or part of a smaller set of rare purchases) in the 10-item condition, and relatively more ordinary (or part of a larger set of common purchases) in the three-item condition, we expected participants to be willing to pay more for the same items in the 10-item condition than in the three-item condition.

#### Method

*Participants.* We recruited 271 participants online through Amazon.com's Mechanical Turk platform. Due to a programming oversight, we failed to collect demographic information in study 4B, though participants were drawn from the same population as described in studies 2, 4A, and 5.

*Design and Procedure.* To encourage participants to view categories of items as more or less common, we asked them to recall either three or 10 items that they had recently purchased, randomly selected from one of four categories: home goods, recreation goods, presents, and clothing. After the item-listing task, participants were asked about their willingness to pay for a series of six items, presented sequentially in a random order. Three of these items were from the target category (home goods: toaster, lamp, picture frame; recreation goods: concert ticket, bike, dinner out; presents: Mother's Day present, Valentine's Day present, or best friend's birthday present; clothing: shorts, sweater, shoes) and three were from another category, intended as distractions. As a manipulation check, participants were then asked how challenging it was for them to come up with the examples earlier in the study. Finally, they were asked several questions about their purchasing habits for the target category, including the total amount of money spent and the percentage of their budget that they allocated to the category annually.

## Results and Discussion

Prior to analysis, we converted willingness-to-pay estimates to *Z*-scores for each item to allow for comparisons across items. We excluded 11 participants from the data set for responding with nonsensical answers to the final questions about purchases in the category, for example, by indicating that the amount of their budget allocated to the category was greater than 100%. Additionally, 23 individual data points were identified as outliers for being greater than three standard deviations above the mean response, and these were omitted from analyses.

As a basic manipulation check, an independent samples *t*-test confirmed that participants rated the item-listing task to be significantly more difficult in the 10-item condition than in the three-item condition ( $M = 3.97$  vs.  $M = 2.89$ ;  $t(258) = 4.64$ ,  $p < .001$ , where 1 indicated "very easy" and 7 indicated "very difficult"), as intended by the experiment. Next, an overall willingness-to-pay *Z*-score was created for each participant by averaging standardized willingness-to-pay values for each of the three items from the target category. A 2 (condition: three-item vs. 10-item listing) by 4 (product category: home goods, recreation goods, presents, clothing) between-subjects analysis of variance was conducted to examine the effect of condition on standardized reported willingness to pay. Averaging across items in the target categories, mean willingness-to-pay estimates in the 10-item condition were significantly higher than in the three-item condition (mean  $Z = .11$  vs. mean  $Z = .14$ ;  $F(1, 252) = 4.91$ ,  $p = .028$ ,  $\eta^2 = .02$ ). Furthermore, there was no main effect of category type, or interaction between category type and condition ( $p > .650$ ). These results supported our hypothesis that people are willing to pay more for goods when they consider them to be part of smaller categories (hypothesis 4). Since consumers seem to consider exceptional purchases to be part of smaller categories of goods than ordinary purchases, as shown in study 3, these findings suggest that this categorization could lead to overpaying for

exceptional purchases relative to ordinary ones. Importantly, the specific items that participants judged in studies 4A and 4B were identical. This consistency rules out the possibility that differences in the items themselves (e.g., different hedonic valences) caused the observed differences across exceptional and ordinary conditions. Furthermore, study 4B held the categories themselves constant and altered only the metacognitive ease with which category examples were recalled. This manipulation ruled out the possibility that anchoring on more expensive items within narrow categories was driving observed differences in willingness to pay.

Together, studies 4A and 4B also help explain why consumers might pay more for goods when they are presented sequentially rather than simultaneously, as we found in study 2. In particular, sequential presentation of these goods may encourage participants to consider exceptional purchases as part of a narrow category of goods, containing only a few items, while simultaneous presentation may encourage consideration of these purchases as part of a broad or more densely populated category of goods, thereby reminding consumers of additional expenses. In contrast, consumers may naturally consider ordinary items as part of a broad category of goods containing many items, regardless of whether those items are presented alone or alongside other ordinary items.

## STUDY 5: DEBIASING

The data presented thus far have supported the claim that consumers consider exceptional expenses to be part of an overly narrow category of goods, which compromises their ability to create mental budgets and avoid overspending. Assuming that people overspend on exceptional goods because they consign them to excessively narrow categories, encouraging consumers to categorize exceptional expenses more broadly, thereby considering other similar expenses simultaneously, might encourage them to spend more frugally (hypothesis 5). Reminding participants that a purchase they are about to make is similar to a class of purchases that they have made in the past could help encourage this broad view, and it would be more natural than forcing participants to make multiple spending decisions at the same time, as we did in study 2. In the current study, we tested this approach as a means both to help understand the mechanism underlying counternormative spending and to help reduce the bias. We focused on birthday presents, since many consumers make purchases from this class of items regularly, but continue to regard each purchase as exceptional. We examined whether participants would spend less on birthday presents when reminded of how often this kind of purchase occurs.

### Method

*Participants.* We recruited 242 participants (58% female) online, through Amazon.com's Mechanical Turk platform, in exchange for payment. Participants ranged in age from 18 to 82 years ( $M = 33.17$ ).

*Design and Procedure.* Participants were randomly assigned to one of three conditions: the present debiasing condition, the birthday control condition, or the spending control condition. In each case, participants were asked to list certain items. In the present debiasing condition, participants were instructed: "In the space below, please list the times last year when you gave people presents. For example, a friend's birthday, an anniversary, or a holiday." This prime was intended to subtly remind participants that any one birthday present is part of a larger class of goods (i.e., "presents") and that they do make purchases from this larger category with some frequency. Reminding participants of similar purchases should have helped them value the individual purchase they were considering accurately. We hypothesized that consumers would pay less for a special purchase when prompted to classify it alongside other special purchases and thus that this reminder would lower the amount that the participant is willing to pay on any given present. In the birthday control condition, participants were instructed: "Think about which month the most people you know have birthdays in. In the space below, list the names of the people you know who have birthdays in that month." This condition was intended to encourage participants to think about the same topic (i.e., birthdays) as in the experimental debiasing condition, but without considering spending on presents specifically. In addition to reminding participants of a smaller category of purchases (birthday presents rather than all presents), many of the recalled birthdays were of people who participants do not purchase presents for. Therefore, we did not expect this condition to encourage the same broad framing of spending on these types of items. Finally, the spending control condition instructed participants: "In the space below, please list the times last year when you bought tickets for travel. For example, a train or bus ticket, or tickets for a flight." This condition was intended to encourage participants to think about spending, similar to the experimental debiasing condition, but without considering expenses from the category relevant to the specific purchase being contemplated. Participants were given space to state five items in response to each listing task.

After responding to this listing task, participants were given a distraction task before moving to the final dependent variables of interest, namely, a decision about purchasing a watch for a friend's birthday. They were told: "A friend's birthday is coming up soon, and you've decided to buy a watch for him. Please select which of the following watches you would be most likely to buy." They then chose among six different sports watches, presented in a random order for each participant. The options varied in price (from \$15 to \$75) and quality, as indicated by a short product description (fewer than 10 words).

## Results and Discussion

Twenty participants failed to respond to the experimental prime, and their data were thus excluded prior to analysis. A one-way analysis of variance revealed that condition had a significant main effect on the mean price of the watch selected ( $F(2, 219) = 3.32, p = .038, \eta^2 = .03$ ). Furthermore, Tukey post hoc tests indicated that participants se-

lected watches that were significantly less expensive in the present debiasing condition ( $M = \$37.04$ ) than in either the birthday control condition ( $M = \$43.30, p = .029$ ) or the spending control condition ( $M = \$44.27, p = .027$ ). There was no difference in willingness to spend across the two control conditions ( $p = .76$ ). Participants' birthday present choice was significantly less expensive after a subtle reminder that the specific birthday present is part of a larger group of presents that they purchase with some frequency than in either of the control conditions. These findings supported our hypothesis that consumers will pay less for a special purchase when prompted to classify it alongside other special purchases (hypothesis 5).

Importantly, in addition to reducing the bias for overspending on exceptional purchases, these results helped support broad versus narrow bracketing as a mechanism for explaining the initial result of overspending on exceptional products when they are presented separately rather than together. Reminding people of other similar expenses encouraged them to broadly bracket the specific purchase alongside others that could also be drawing down their budgetary resources, rather than looking at it in isolation. This manipulation therefore improved the quality of participants' purchasing decisions.

## GENERAL DISCUSSION

Across seven experiments, we found that consumers committed normative errors when considering spending on exceptional expenses that they tended not to make for ordinary items, and we concluded by proposing a remedy for this bias. Making spending forecasts, participants underestimated the cost of exceptional expenses but accurately estimated the cost of ordinary ones (study 1). Errors extended to willingness to pay for exceptional items, with participants expressing greater willingness to pay for exceptional items when the products were presented one at a time rather than all at once, a pattern that did not extend to ordinary items (study 2). Results suggested that difficulty categorizing exceptional expenses leads to narrower classification of exceptional goods relative to ordinary ones, making them seem part of a smaller (and thus more exclusive) group, with fewer items causing less budgetary strain (studies 3A and 3B). Furthermore, we showed that considering an item to be part of a smaller group increased willingness to pay for that item (studies 4A and 4B). Finally, we showed that subtly reminding participants that they often purchase similar items (and possibly that their budget would need to be stretched) reduced spending on exceptional goods (study 5).

## Mental Budgeting Errors

Research on mental budgeting has distinguished between booking (i.e., noticing and recording expenses), and posting (i.e., assigning expenses to specific accounts; e.g., Heath 1995; Heath and Soll 1996). Both of these stages are necessary to avoid normative budgeting errors. Studies in this article have shown that people narrowly categorize excep-

tional items and that this narrow bracketing leads to overspending. However, one question that emerged from the biases around exceptional purchases reported here is whether these purchases create challenges for the booking process or the posting process. Although failure to book expenses has primarily been examined in the context of purchases that are too small to warrant attention (Gourville 1998; Thaler 1999), the same type of error may extend to large purchases in cases where they are deemed exceptional.

To examine this possibility, we described purchasing a bottle of wine that was either ordinary (purchased locally) or exceptional (purchased while traveling) to participants online ( $N = 347$ ), using a between-subjects design. To learn about their intuitions regarding this purchase, we then asked participants a series of explicit questions about their perceived mental accounting process. Specifically, we asked participants whether they would make a mental note of the purchase, how much thought and attention they would give to taking note of the purchase relative to others, and their reasons, selected from: (1) I don't make purchases like this often, so there is no need to keep track of it, (2) This is a large purchase, so I need to keep careful track of it (3), I keep track of all purchases I make, (4) I don't keep track of any purchases I make, and (5) I wouldn't be able to enjoy the purchase as much if I kept careful track of the cost.

Participants who were asked about ordinary expenses were more likely to report making a mental note (87%) than those asked about exceptional ones (75%,  $\chi^2(1, N = 349) = 8.49$ ,  $p = .004$ ,  $\Phi = .16$ ). They also reported giving more thought and attention to the ordinary expenses ( $M = 5.02$ , where 1 = "much less than other purchases I make" and 7 = "much more than other purchases I make") than the exceptional ones ( $M = 4.37$ ;  $t(347) = 3.99$ ,  $p < .001$ ). Notably, participants were more likely to cite "This is a large purchase, so I need to keep careful track of it" as their reason for tracking the ordinary wine purchase (45%) than the exceptional one (31%;  $\chi^2(1, N = 349) = 7.36$ ,  $p = .007$ ,  $\Phi = .15$ ). In contrast, they were more likely to use the rare nature of the purchase ("I don't make purchases like this often, so there is no need to keep track of it") as a justification for their accounting of the exceptional wine purchase (27%) than the ordinary one (13%;  $\chi^2(1, N = 349) = 11.47$ ,  $p = .001$ ,  $\Phi = .18$ ). There were no differences across conditions in reports of the other available explanations.

These results suggest that consumers may be actively choosing not to track exceptional purchases more frequently than ordinary ones because they perceive the individual instances to be unique rather than one instance from a broader category of purchases. While these findings provided some evidence that consumers face challenges in booking exceptional expenses, we do not propose that budgeting difficulties are limited to the booking process. Instead, they seem likely to extend to the posting process as well. Understanding both the booking posting processes for tracking exceptional expenses is an important area for future investigation.

## Conclusions and Future Directions

The findings presented in this article demonstrated that people budget differently depending on whether they believe a purchase is exceptional rather than just another purchase in the ordinary course of events. Instead of incorporating an exceptional item into their budget as one in a series of unique purchases, consumers tend to treat each one as though it exists in isolation. Failure to acknowledge similarity to other purchases can lead consumers to neglect exceptional expenses when making budget forecasts, and it encourages them to splurge on purchases that they would view more conservatively if they perceived their budget less myopically.

Interestingly, consumers do not appear to learn through experience when no explicit feedback is provided. For example, since consumers purchase birthday presents with some frequency, one might expect that they would adapt over time to categorize these purchases more broadly, learning to spend less on each purchase. Nonetheless, even in this fairly straightforward case, participants in study 5 persisted in spending more on the birthday present purchase when they were not reminded that they regularly make other similar purchases than when they encountered a simple reminder. Since consumers do not receive feedback on overspending in everyday life, they may not have the opportunity to learn from their errors. This raises the important question of whether consumers learn when they receive feedback, whether there are certain natural contexts in which these spending errors do not occur, and whether other interventions might reduce overspending on exceptional items. For example, there is some evidence that consumers provide more accurate budget estimates when estimating budgets for a longer budget period (e.g., 1 year) versus a shorter budget period (e.g., 1 month; Ulkumen et al. 2008). Consumers might similarly predict their exceptional expenses with greater accuracy across longer time horizons.

In addition to the relatively abstract debiasing procedure presented above to mitigate consumers' overspending on exceptional purchases, alternative methods of tracking expenses could help reduce both spending and forecasting biases. Encouraging consumers to create a separate budget category exclusively for exceptional expenses could facilitate the posting process. Using this category, personal accounting programs could then prompt consumers to enter whether they have made any exceptional purchases, facilitating the booking process as well. Alternatively, consumers could benefit from relaxing existing boundaries to construe categories more broadly. For example, recognizing that a Halloween costume belongs in a clothing account would increase the likelihood of properly tracking the purchase. Once consumers are in the habit of recording expenses, they could use the accurate information about their historical budgets to encourage an outside view of spending on exceptional products and improve budget forecasts.

Exceptional expenses are critical to a consumer's budget, as the most expensive purchases are often classified as exceptional. Consumers, like businesses, separate exceptional expenses from their standard accounting process.

This treatment can cause consequential errors in financial planning, resulting in overspending and undersaving. Marketers have the ability to make individual purchases appear more or less exceptional by influencing branding and sit-

uational factors. Understanding differences in accounting for ordinary and exceptional expenses can help both consumers and businesses, with significant ramifications for consumer spending and welfare.

## APPENDIX

TABLE A1

ITEMS USED FOR CARD-SORTING TASK IN STUDY 3

Pair	Ordinary	Exceptional
1	Monthly rent	A week-long hotel stay
2	Grocery shopping for the week	Grocery shopping for a friend's visit
3	An apple at the supermarket	An apple at the orchard
4	A Hershey's chocolate bar	A Godiva chocolate bar
5	Eggs for an omelet	Eggs for Easter
6	A bag of chips for watching a football game	A bag of chips for watching the Superbowl
7	Parking at the mall	Parking at the amusement park
8	Tuning your car for its regular inspection	Tuning your car for a major road trip
9	A bag of popcorn at the movies	A bag of popcorn at the state fair
10	A coffee mug	Your favorite coffee mug
11	A cell phone bill	A new cell phone
12	Gloves for winter	Gloves for skiing
13	A muffin	A piece of wedding cake
14	White shoelaces	Hot pink shoelaces
15	A man's business suit	A man's tuxedo
16	A monthly bus pass	A bus ticket to visit relatives
17	Monthly supply of contact lenses	New contact lenses
18	Weekly sports massage at the gym	Yearly shiatsu massage at the spa
19	A bottle of Poland Spring water	A bottle of Perrier water
20	A movie ticket	A ticket to a play
21	New light bulbs	Christmas lights
22	A bottle of wine	A bottle of champagne
23	Coffee from Dunkin' Donuts	A mochacino from Starbucks
24	Over the counter drug for pain relief	Prescription drug for pain relief
25	A date on a Saturday night	A date on New Year's Eve
26	A cookie	Cotton candy
27	Peanut butter	Nutella
28	Store-bought chicken soup	Your mom's homemade chicken soup
29	An ice cream cone	A piece of ice cream cake
30	A fork	Chopsticks

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