
RESEARCH ARTICLES

Malleable Mental Accounting: The Effect of Flexibility on the Justification of Attractive Spending and Consumption Decisions

Amar Cheema

Washington University in St. Louis

Dilip Soman

University of Toronto

Mental accounts are often characterized as self-control devices that consumers employ to prevent excess spending and consumption. However, under certain conditions of ambiguity, the mental accounting process is malleable; that is, consumers have flexibility in assigning expenses to different mental accounts. We demonstrate how consumers flexibly classify expenses, or construct accounts, to justify spending. An expense that can be assigned to more than one account (i.e., an ambiguous expense) is more likely to be incurred than an unambiguous expense that is constrained either by existing budgets or by previously constructed accounts. We explore the justification processes that underlie these results and their implications for mental accounts as self-control devices.

I'm someone who generally subscribes to the austerity-is-a-virtue theory. Lately, though, in the wake of some bankrupting holiday-season financial pressures, I've been tempted to perform a little of the rationalize-any-expense style of budgeting ... Where I live, a basic cable package now runs about \$35 a month. Fortunately, my wife and I never signed on, which over the course of 10 years adds up to an awful lot of money. This discovery comes as a tremendous relief. Not only does it allow us to pay for the vacation we took last June, it's also enough to buy a new sofa for the living room. (Gertner, 2001, p. 25)

Mental accounting is a cognitive form of bookkeeping that individuals practice to keep track of expenses and control consumption (Gourville & Soman, 1998; Prelec & Loewenstein, 1998; Thaler, 1985, 1999). The "mental account" construct is a metaphor applied to spending decisions because of its utility in conceptualizing empirical phenomena. Consumers often use

mental accounts to constrain spending by allocating budget limits in certain categories (Heath & Soll, 1996). In this role, expenses in a category are assigned to an earmarked mental account, and these expenses are monitored to avoid overspending on tempting products. Another role played by mental accounts is transaction-specific, where consumers set up an account for a transaction, debit the expense, and credit the benefit accrued from consumption (Prelec & Loewenstein, 1998). Transaction-specific mental accounts compel individuals to consume products they have purchased and not to abandon them in the face of tempting alternatives (Thaler, 1985).

Mental accounts therefore act as self-regulatory mechanisms. As Thaler (1999) wrote, "Mental accounting procedures have evolved to economize on time and thinking costs, and also to deal with self control problems" (p. 202). Thaler's assertion about the economizing role of mental accounts suggests that these accounting processes include an element of imprecision or ambiguity. How does such ambiguity in the mental accounting process affect consumers?

This research proposes that ambiguity in the mental accounting process presents individuals with opportunities to

Correspondence should be addressed to Amar Cheema, Washington University, St. Louis, John M. Olin School of Business, Campus Box 1133, One Brookings Drive, St. Louis, MO 63130. E-mail: cheema@wustl.edu

engage in creative bookkeeping, allowing them to circumvent established controls and to indulge in the very behavior that they were attempting to avoid. Mark Twain describes one such instance of creative manipulation of rules. Having limited himself to one cigar a day, he started shopping for bigger and bigger cigars until he had each made to such proportions that he “could have used it as a crutch” (Twain, 1897/1989). The opening scenario in this article, in which the author overspent during the holidays, is another instance of creative mental accounting. To alleviate the resulting anxiety, he creatively invoked an “unincurred” cost (not having a cable TV subscription for the past 10 years), against which he wrote off his current excessive expenses.

Although mental accounts are key self-regulation devices, they are also often fallible. The term *malleable mental accounting* describes instances in which the consumer has flexibility either (a) in classifying ambiguous expenses (and, therefore, in assigning them to different mental accounts), or (b) in constructing mental accounts to accommodate unclassified expenses. This flexibility allows consumers to find loopholes and to circumvent the self-control imposed by mental accounts. In this research, therefore, the primary focus is on the budgetary role of mental accounts, and how malleability in the mental accounting process affects this role.

The following manuscript addresses this topic. We first review the literature on individual self-control, mental accounting, and the justification of desirable choices, and discuss the potential effects of malleability on self-control. We then report two experiments that demonstrate how malleability in the mental accounting process allows individuals to do what they want to do rather than what mental accounts constrain them to do.

THEORETICAL BACKGROUND

Self-Control and Mental Accounts

The problem of consumer self-control is not a new one. Decision makers—from the mythical Ulysses who had himself lashed to a mast to safely sail his ship past the Sirens (Elster, 1979), to the modern-day consumer who freezes her credit cards in ice so that she doesn’t use them impulsively (Ainslie, 1992; Rook, 1987)—try to avoid succumbing to temptations. The need to impose self-control arises from a conflict between the short-term and the long-term consequences of consumption. Wertenbroch (1998) defined products that offer short-term benefits (e.g., the taste of eating chocolate cake) but long-term harm (e.g., bad health) as “vices.” Conversely, “virtues” offer benefits in the long term (e.g., good health from eating vitamins) but harm in the short term (e.g., the bitter taste of the pill). However, consumers are often myopic (Hoch & Loewenstein, 1991; Kirby, 1997; O’Donoghue & Rabin, 1999; Strotz, 1956), emphasizing short-term benefits over long-term benefits. In the absence of self-control devices, they may overconsume

vices and underconsume virtues (Baumeister, 2002; Schelling, 1984).

Formal self-control devices often function as personal rules or precommitments (Ainslie, 1992; Baumeister, Heatherton, & Tice, 1994; Becker, 1960; Strotz, 1956; Thaler & Shefrin, 1981). Mental accounts constitute one set of such rules. For instance, Shefrin and Thaler (1988) discussed self-control as deriving from the two selves of a decision maker, the “planner” and the “doer.” The planner is more forward-looking, budgeting for future expenses, whereas the doer is more myopic and prone to incur current expenditures. The planner uses precommitment devices to keep the doer from falling prey to temptation and overspending. Self-control manifests itself as a threshold that has to be overcome by incurring a “psychological cost” to break preset rules, such as using money from a retirement account to finance a vacation (Shefrin & Thaler, 1988).

Mental accounts serve as self-regulatory mechanisms in two specific ways. First, their budgetary role involves the assignment and coding of incomes, expenses, and activities to specific accounts. Expenses are divided into different spending categories (e.g., food, entertainment), and spending in each category is constrained by budgets (Heath & Soll, 1996). This involves earmarking a specific amount of money (a precommitment to a budget) toward a category of expenses and assigning incurred expenses from that category to the designated mental account. In this role, tracking the account expenses vis-à-vis the budget acts as a “tax” on deviant behavior (Thaler & Shefrin, 1981) and prevents consumers from overspending on tempting products in the category that they may otherwise want to buy (but should not). As noted previously, this research focuses on this budgetary role played by mental accounts.¹

Second, transaction-specific accounts allow consumers to set up a mental account for a transaction, debit the payment made for the transaction, and credit it with the benefit achieved from consumption. Tracking these costs and benefits helps the consumer to close the account with an overall gain (Prelec & Loewenstein, 1998). Transaction-specific accounts ensure that consumers do not waste a prepayment by foregoing consumption in favor of a more attractive alternative consumption opportunity (Gourville & Soman, 1998; Thaler, 1985).

In an ideal situation, mental accounts could serve as rigid self-control devices. That is, they prevent consumers from doing what they want to do (e.g., buy a car), forcing them instead to do what they think they should do (e.g., save for retirement; Shefrin & Thaler, 1988). Such precommitment devices are effective in exerting self-control because people do not arbitrarily choose tempting alternatives solely on the basis of their attractiveness. Specifically, prior research suggests that consumers try to maintain a sense of accountability (even to their own selves) and hence succumb to temptation only when they

¹Allocating money to different mental accounts also affects the fungibility of money, with money from some accounts being more readily spent than others (e.g., Thaler & Shefrin, 1981).

can somehow justify that decision (see Kunda, 1990, for a comprehensive review). Therefore, consumers will not knowingly choose tempting options when such a choice contradicts a more justifiable course of action (Hsee, 1996).

Malleability in the Mental Accounting Process

For rules to be effective in controlling behavior, it is important for them to be precise. Evidence suggests that if consumers or firms that are subject to rules are sufficiently motivated to deviate from these rules, they will use any imprecision or ambiguity to find “loopholes,” that is, situations in which they could legitimately indulge in otherwise undesirable behavior.

Examples of such legally illegal behavior—permitted by loopholes in externally-imposed rules—abound across several domains. For instance, corporations often achieve desired accounting outcomes by manipulating ambiguities in accounting conventions (see Burgstahler & Dichev, 1997; Macdonald, 2000; Schipper, 1989) that “leave plenty of wiggle room for those inclined to dupe unsophisticated investors while remaining within the letter of the law” (Kahn, 2000, p. 46). Individuals and firms routinely use loopholes in tax laws to evade substantial tax payments (Holstein, 2002; Outram, 1996). Some presidential candidates use inconsistencies in election laws to generate large campaign contributions (Bolton, 2001; Carney, 1999). And a loophole allowed a California resident to sell land on the moon (Bridges, 2000).

The effectiveness of personal, internally-imposed rules as self-control devices is similarly diminished when the rules are unclear or ambiguous (e.g., Ainslie & Haslam, 1992; Baumeister et al., 1994). With clear classification of expenses and unambiguous definitions of mental accounts, there is little potential to move money between accounts without it being registered as a clear “violation” of the imposed constraints. However, similar to the tax evader who finds a loophole in tax laws to justify his actions, a consumer could also conceivably exploit ambiguities in the mental accounting process to justify giving in to temptation.

Supporting this conjecture, and in contrast to a crisp categorization and demarcation of mental accounts, recent research has identified situations in which the assignment of costs and benefits is not as clear as previously suggested. Soman and Gourville (2000) showed that in situations of price bundling (e.g., paying \$800 for a vacation package comprising airfare, hotel, and sightseeing), the individual typically has flexibility in assigning portions of the total cost to each of the separate benefits. Soman and Cheema (2001) showed that unbudgeted windfalls introduce flexibility into mental accounts, allowing consumers to allocate the gain to a mental account at their discretion and helping them write off sunk costs. Thaler (1985, p. 199) gave the example of a couple returning from a fishing trip whose fish (caught on the trip) are lost by the airline. The couple spends the airline’s compensation on an unusually lavish meal, coding it both as “windfall” and as “food.” Coding this compensation as food

(as opposed to, say, a vacation) allows the couple to justify spending it on the dinner. These examples suggest that ambiguity in the interpretation of costs and benefits allows consumers to allocate money or expenses in different ways to justify a desired course of action.

In this context, ambiguities in interpretation arise from two sources. First, an expense can be assigned to different subjective categories (food, entertainment, etc.). Thus, when an expense can be classified in more than one way, it may be assigned to an account that justifies its occurrence. For example, eating out at a restaurant with friends can be classified as either food or entertainment. In such a case, a consumer might assign it to an account that, on the basis of budget allocations or prior expenses, allows the expenditure rather than to an account that does not. However, the classification of a specific expense (e.g., food delivery) may be less flexible, not being manipulated as easily, and it may be more difficult to circumvent constraints.

Second, there can be flexibility in the construction of mental accounts (Read, Loewenstein, & Rabin, 1999). A mental account can either be specific (e.g., laundry expenses) or general (living expenses), and the balance in one account may differ from that in the other.² Consumers with predefined budgetary accounts might assign a desirable expense to either a general account or a more specific one, depending on the balance in these accounts, and therefore, on which assignment is more likely to justify its occurrence. Furthermore, in the absence of predefined budgetary mental accounts, consumers who consider an attractive expense may construct an account that is “tailor-made” for the expense, and has a positive balance, thus allowing consumers to justify it.

The conditions in which one of these alternative expense-justification processes predominates over the other are not clear a priori. However, each process should be more likely to occur when the classification of an expense is ambiguous than when it is not. In this regard, past research on mental accounting has typically assumed unambiguous categorization and demarcation of expenses and funds, considering expenses occurring in close temporal proximity to be assigned to the same mental account (see Linville & Fischer, 1991), or dividing funds into clear categories such as assets or current income (Shefrin & Thaler, 1988). For instance, “tin can” budgeting (Rainwater, Coleman, & Handel, 1959) and software programs like Quicken allow consumers to allocate budgeted cash amounts into separate tin cans or expense categories. Other than some speculation by Heath and

²In addition to the breadth of an account (specific versus general), the duration of the account may also be varied by the consumer to achieve desired final outcomes. Although this research holds the duration of the accounts fixed (at 1 month), prior research has demonstrated that people are loath to close an account “in the red” (e.g., Prelec & Loewenstein, 1998). One consequence of this loss aversion is demonstrated in the stock market, where investors hold on to “losing” stocks longer than “winning” stocks (e.g., Barber & Odean, 1999).

Soll (1996), however, prior research has not allowed much “wiggle room” for individual motivation to influence the processes and outcomes of mental accounting.

Justifying Choice of Desirable Options

Our conceptualization assumes that when attractive expenditures can be interpreted in multiple ways, consumers are likely to interpret them in a way that allows consumers to justify spending. Hsee (1995, 1996) argued that a decision maker will not choose an option he wants (e.g., a less boring task) over an option that he should choose (e.g., a more boring task that pays more) if he is unable to justify doing so. When the criteria for evaluating an option are ambiguous, however, individuals may often be able to construct a justification, and therefore, are more likely to choose the desirable option.

Research in other domains is consistent with this possibility. In a review of research on motivated reasoning, Kunda (1990, pp. 480, 483) stated the following: “the biasing role of goals is thus constrained by one’s ability to construct a justification for the desired conclusion: people will come to believe what they want to believe only to the extent that reason permits.” Darley and Gross (1983), for example, found that when participants view a film containing ambiguous information about children from different socioeconomic backgrounds, they interpret the film in ways that are consistent with stereotypic judgments they want to make. Lord, Ross, & Lepper (1979) reported similar results. That is, participants gave greater credence to information that was consistent with the position they wanted to reinforce and selectively interpreted information to reach a conclusion that conformed to their prior beliefs.

These different streams of research show that, when given a chance, individuals selectively interpret and manipulate evidence to justify a preferred future choice or judgment. Motivated reasoning is thus different from dissonance reduction, which focuses on how individuals rationalize a decision after it has been made (Cooper & Fazio, 1984; Festinger, 1957). This research focuses on how individuals change their assessments of expenses and of budgetary mental accounts to justify a future spending decision, obtaining further support for these processes in a financial domain.

Participants in two experiments were asked to imagine an attractive consumption opportunity that they wanted to take advantage of but, because of precommitments, should not. Experiment 1 investigated the effects of malleability in the mental accounting process by manipulating the ambiguity of the expense opportunities available and studying the flexible classification of an expense that is ambiguous. Experiment 2 investigated effects of flexibility in the construction of mental accounts. In combination, the experiments demonstrated that in the absence of malleability, consumers are constrained by mental accounts. When the mental accounting process is malleable, however, they manipulate mental accounts to justify spending.

EXPERIMENT 1

Participants in this study imagined a situation in which they had fixed budgets for categories of discretionary expenses (accounts for food, entertainment, and clothing), and were now (at the end of the month) presented with an attractive expense opportunity. The amount of prior spending (affecting the remaining surplus) in each account, and the nature of the current expense (ambiguous–unambiguous), were manipulated. We expected that to justify undertaking the expense, participants would attempt to allocate it to the account with a surplus, and would be successful in doing so when the expense was ambiguous (and thus introduced malleability in the mental accounting process) but not when the expense was unambiguous. The classification of the ambiguous expense was also expected to reflect this manipulation.

Method

Participants and design. A total of 120 students at a Midwestern university were paid for their participation. An equal number of participants were assigned randomly to each cell of a 2 (surplus account: food vs. entertainment) \times 3 (expense opportunity: food delivery vs. music concert vs. restaurant dinner) design.

Procedure. Participants were introduced to the study with instructions stating that the purpose of the study was to understand how individuals behave in many common situations. Differences between discretionary and nondiscretionary expenses were explained, and the participants read the following scenario:

Imagine that you have graduated and have a job that pays approximately \$3,000 a month after taxes. You typically categorize your discretionary expenses under the following broad headings:

Food: This includes expenses related to pizza, snacks, discretionary groceries, etc.

Clothing: This includes expenses related to purchasing clothes and other personal items.

Entertainment: This includes expenses related to entertainment, such as basketball tickets, movies, CDs, etc.

It is the 28th of January, and you have been looking over your discretionary monthly expenses on your personal accounting program.

To provide participants an estimated budget for each expense category, they were told the following:

Several months ago you decided to use a budget to manage your discretionary expenses and since then have managed to maintain a fairly constant budget for each month. The following table is a summary of your

expenses in each of these categories over the past 6 months.

Participants were provided a table that listed an expenditure of approximately \$300 per month each for food and entertainment and \$150 per month for clothing (see Table 1).

They were then given a list of expenses for the current month in each of the three accounts (food, entertainment, and clothing). The amount of prior expenses incurred in specific accounts in the current month was manipulated (between subjects), so that a surplus remained for either the food account or the entertainment account. The amount of prior spending was manipulated so that a participant’s food [entertainment] account was depleted, with the surplus remaining in the entertainment [food] account.

Table 2 shows one such list of expenses. In this table, the participant has ostensibly spent \$255 on food, \$313 on entertainment, and \$148 on clothing. Thus, in this food surplus condition, the food account had a remaining surplus whereas the entertainment account had been exhausted. In a second,

entertainment surplus condition, the expenses in the two accounts were reversed. Expenses on clothing were held constant across conditions.

Participants were then asked to imagine an attractive expense opportunity, the nature of which varied over conditions. In two conditions, the classification of the expense was unambiguous. Participants in the food delivery condition read the following:

You are dreading the thought of cooking dinner at home. One alternative is to have food delivered. You call the local delivery place and they promise to have a tasty and wholesome meal ready and delivered immediately.

In contrast, participants in the music concert condition read the following:

You are dreading the thought of spending the rest of the evening alone. One alternative is to go to a nearby theater that is running a music concert that you wouldn’t mind seeing.

In a third, restaurant dinner condition, the classification of the expense was ambiguous; that is, it could be interpreted as either a food expense or an entertainment expense:

You are planning to spend the rest of the evening at home eating some (not so tasty) leftovers and perhaps catching up on your reading, when your friend calls you. He wants to go for dinner to a nearby restaurant. This restaurant has good food, and live entertainment as well.

All participants were told that this potential expense would cost approximately \$25. They were also provided with an article, ostensibly from the local newspaper, reviewing the food delivery, music concert, or restaurant dinner. The article was written in the style of a typical product review in which the author had sampled the product and described his experience to the reader. The article spoke glowingly of the respective product and strongly recommended it.

Dependent measures. Participants reported the likelihood of incurring the expense along a scale from 1 (*definitely not spend*) to 9 (*definitely spend*). They then rated three expense opportunities: “having food delivered at home,” “going to a theater to watch a music concert,” and “eating out at a restaurant” as being typical food and entertainment expenses, along scales from 1 (*not at all typical*) to 9 (*very typical*).³

³Typicality ratings of the expense opportunity as a clothing expense were also collected for completeness. Not being of theoretical interest, these results are omitted. Participants also provided a few phrases that would describe the considered expense to a friend. As these responses reveal a pattern analogous to that demonstrated by the typicality ratings, these (redundant) analyses are omitted.

TABLE 1
Summary of Category Expenses Over 6 Months—
Experiment 1

Month	Amount Spent in Each Expense Category (\$)		
	Food	Entertainment	Clothing
July	297.37	301.84	148.62
August	295.51	293.65	150.24
September	303.65	298.84	149.67
October	297.15	302.47	151.38
November	302.54	299.61	147.45
December	298.48	298.41	152.64

TABLE 2
Manipulation of Category Expenses—
Experiment 1

Date	Description of Expense	Category	Amount (\$)
January 1st	Trousers	Clothing	54.73
January 3rd	Discretionary grocery expenses	Food	75.90
January 5th	Perfume	Clothing	25.50
January 6th	Movie tickets	Entertainment	20.10
January 10th	Snacks	Food	35.55
January 13th	Pizza delivery	Food	19.60
January 15th	Music concert	Entertainment	75.80
January 16th	Scarf	Clothing	38.64
January 16th	CDs	Entertainment	30.05
January 18th	Discretionary grocery expenses	Food	56.80
January 19th	Soccer game	Entertainment	65.40
January 20th	Snacks	Food	21.47
January 22nd	Play (theater) tickets	Entertainment	65.70
January 23rd	Sweatshirt	Clothing	28.76
January 24th	Dessert	Food	45.80
January 25th	Museum special show	Entertainment	55.60

Results

Participants were expected to be more likely to spend when the expense could be allocated to a budgetary account with a surplus. Therefore, those with a food delivery expense opportunity were expected to spend only when they had a surplus in the food account, whereas those with the opportunity to attend a music concert were expected to spend only when they had a surplus in the entertainment account. In contrast, participants with a restaurant dinner opportunity were expected to classify the expense as food when they had a surplus in the food account and as entertainment when they had a surplus in the entertainment account. Therefore, they were expected to spend regardless of the account in which they had a surplus.

Spending likelihood. We expected that participants would be willing to spend on the food delivery or a music concert only if they had a surplus of money in their food and entertainment accounts, respectively. However, participants were expected to be willing to spend on the restaurant dinner regardless of the account in which they had a surplus. Data bearing on this hypothesis are summarized in Table 3. As expected, participants were more willing to spend money on food delivery if they had a surplus in the food account than if they had a surplus in the entertainment account, but were less willing to pay for the music concert in the former condition. On the other hand, they were willing to spend money for the restaurant dinner regardless of where they had a surplus. The interaction of expense type and surplus account was quite significant, $F(2, 114) = 23.39, p < .01$.

Expense typicality ratings. Our assumptions concerning the accounts to which participants assigned the expenses are indirectly confirmed by the typicality ratings of these expenses. Participants indicated that food delivery was a more typical food expense ($M = 7.28$) than an entertainment expense ($M = 2.33$), $F(1, 119) = 907.66, p < .01$, but that a music concert was a more typical entertainment expense ($M = 7.36$) than a food expense ($M = 1.72$), $F(1, 119) = 1354.35, p < .01$. These (within-subject) differences were evident regardless of the expense that participants were asked to consider. On the other hand, eating at a restaurant was consid-

ered to be typical of both food ($M = 6.14$) and entertainment ($M = 5.93$), $F(1, 119) = 1.24, ns$.

A supplementary analysis of ratings of the typicality of a restaurant dinner involving only conditions in which participants were asked to consider this expense indicated that the expense was considered more typical of a food expense when there was a surplus in the food account ($M = 7.10$) than when there was a surplus in the entertainment account ($M = 5.15$), $F(1, 118) = 24.62, p < .01$, but was considered less typical of an entertainment expense in the former condition ($M = 5.15$) than in the latter ($M = 7.00$), $F(1, 118) = 15.36, p < .01$. Thus, participants adjusted their classification of the restaurant dinner and assigned it to the account with a surplus.

Discussion

The results of this experiment are consistent with the conclusion that when the classification of an attractive expense was ambiguous, participants assigned the expense to mental accounts so as to justify spending. Thus, participants who wanted to go out with a friend to a restaurant classified the restaurant visit as a food expense when they had some surplus money in their food account but as entertainment when they had a surplus in their entertainment account. Therefore, they were willing to spend money on the restaurant visit in both conditions. In contrast, participants were unable to allocate a food delivery or a music concert expense to different accounts, and so they were willing to spend money for these opportunities only if they had a surplus in the particular account to which the expense pertained.

We were concerned that giving participants preconstructed budgetary mental accounts, along with associated budgets, could lead to “demand artifacts.” That is, providing these accounts may have led participants to believe they were expected to use them as bases for their decisions rather than criteria that they might normally apply. Unfortunately, the solution to this problem, one of giving them a list of expenses and asking them to construct accounts, would not have allowed us to place budgetary constraints on the accounts. And the effect of budgetary constraints on flexible allocation of ambiguous expenses was the very purpose of the study. Therefore, we acknowledge this concern, but note that the pattern of decisions, along with the participants’ classification of expenses, is consistent with our conceptualization. Also, we relax these constraints to study the effects of malleability on construction of accounts in Experiment 2.

Another concern was that participants may have changed expense typicality ratings after the spending decision to present an appearance of rationality. We note that the study design prevented this possibility from being ruled out completely. However, prior research has demonstrated motivated reasoning processes before choice. In addition, Experiment 2 examined the construction of accounts before participants reported willingness to spend and found evidence of similar motivated reasoning processes.

TABLE 3
Effect of Surplus Account and Expense
Opportunity on Willingness to Spend—
Experiment 1

Expense Considered	Surplus Account	
	Food	Entertainment
Restaurant dinner	6.70 _a	6.65 _a
Food delivery	5.95 _a	3.40 _b
Music concert	3.40 _b	6.00 _a

Note. Cell means with unlike subscripts differ significantly at $p < .05$.

EXPERIMENT 2

This study focused on how flexibly constructing budgetary accounts affected spending. Participants constructed accounts as part of a personal finance exercise, either after or before considering an expense whose classification was either unambiguous (a food delivery or a movie) or relatively more ambiguous (a restaurant dinner). We expected that participants who constructed mental accounts before considering the expense would feel constrained by these accounts and would be unlikely to spend. In contrast, we expected participants who constructed mental accounts after considering an expense would attempt to construct these accounts in a way that would justify spending. Note, however, that such an attempt should only be successful if the classification of the expense is ambiguous. That is, participants who consider unambiguous expenses should be constrained by the lack of flexibility, and thus should be no more likely to spend when they construct accounts after considering the expense than they are if they construct their accounts beforehand. In addition to evaluating these possibilities, the study also explored construction of accounts and the rated typicality of the expenses.

Method

Participants and design. A total of 226 undergraduate students at a Midwestern university were paid for their participation. An approximately equal number of participants were assigned randomly to cells composing a 3 (expense type: food delivery vs. movie vs. restaurant dinner) × 2 (constructing account before vs. after considering the expense) design. As eight participants did not complete the task, all analyses are for 218 participants.

Account-after conditions. Participants were asked to imagine themselves in a scenario in which they were concerned about their expenditures, and a close friend suggested they read a book on personal finances. It was supposed to have been the 28th of the month, and they were to imagine starting to read the book after a long day. They read the following:

A good starting point for personal financial planning is to identify specific spending categories for your discretionary expenses (i.e., other than what you spend on rent, gasoline, and essential groceries), label them, and then allocate your typical monthly discretionary expenses among these categories. This will help you keep track of the amount spent in each category, and you can then decide on how much you want to spend in a month in each category. To facilitate easy monitoring, the fewer categories you set up, the better. Of course, putting all expenses in one category will not be of much help either.

Participants then read about an attractive expense opportunity for later that evening that cost about \$20. In two conditions, the classification of this expense was unambiguous. Specifically, participants in the food delivery condition read about a highly recommended delivery service that could deliver a tasty and wholesome meal quickly, whereas those in the movie condition read about a local comedy movie show at a nearby theater that has received glowing reviews. In contrast, participants in the third, restaurant dinner condition read that a friend called them to go out to a highly recommended restaurant. Thus, the classification of this expense was relatively more ambiguous, as it could be classified as either food or entertainment.

After learning about the potential expense, however, participants were told to imagine that they put off deciding whether to incur the expense until after they had completed a personal finance exercise. Specifically, they were given a list of 21 discretionary expenses typical of an undergraduate population (see Table 4). They were asked to think of no more than five categories to which they would assign the expenses and to write the names of these categories on their response sheets. They were then asked to assign each expense to a category.

Account-before conditions. The procedure in this condition was identical to the procedure in account-after conditions except that the participants constructed accounts before they learned about the expense (food delivery, a movie, or a restaurant dinner).

Dependent measures. Participants reported how likely they were to spend money on the food delivery (or the

TABLE 4
List of Expenses Provided to Participants for
Constructing Accounts—Experiment 2

Date	Description of Expense	Amount (\$)
1st	Pants	55
3rd	Discretionary grocery expenses	75
5th	Perfume	25
6th	Movie tickets	10
8th	Entertainment park (Six Flags)	35
10th	Snacks	35
12th	Weekend vacation trip	85
13th	Pizza delivery	20
14th	Baseball game	40
15th	Music concert	45
15th	Drinks	35
16th	Scarf	40
16th	CDs	25
18th	Discretionary grocery expenses	65
19th	Soccer game	45
20th	Snacks	30
21st	Shoes	65
22nd	Play (theater) tickets	55
23rd	Sweatshirt	30
24th	Dessert	25
25th	Museum special show	35

movie, or the restaurant dinner) along a scale from 1 (*definitely not spend*) to 9 (*definitely spend*). In addition, participants reported to which category they would assign this expense (we label this the target account). We added up the expenses assigned to the target account to calculate prior spending from this account. Participants also rated the typicality of “eating out at a restaurant,” “going to a theater to watch a movie,” and “having food delivered at home” as both a food expense and an entertainment expense, along scales identical to those employed in Experiment 1.

Results

Spending likelihood. We expected that participants who constructed accounts after considering the ambiguous expense (i.e., the restaurant dinner) would flexibly construct mental accounts or classify the expense in such a way so as to justify incurring it. In contrast, participants who constructed accounts before considering the expense were expected to have fewer opportunities to do so, and to thus be less likely to spend, than the former.

Given the lack of flexibility associated with unambiguous expenses (i.e., a food delivery or a movie), however, we expected that participants would not be able to construct accounts or classify these expenses to justify spending. Thus, participants who constructed accounts after considering an unambiguous expense would be no more likely to spend than those who constructed accounts before considering an unambiguous expense.

Data bearing on this hypothesis are summarized in Table 5. As expected, participants were more likely to spend on the restaurant when they constructed accounts after considering

TABLE 5
Effect of Stage of Account Construction
(After–Before Considering Expense) and Expense
Type on Spending Likelihood

	Stage of Account Construction	
	After Considering Expense	Before Considering Expense
Spending likelihood		
Restaurant dinner	6.53 _a	5.25 _{b,c}
Food delivery	4.16 _{c,d}	5.68 _{a,b}
Movie	3.77 _d	4.80 _{b,d}
Prior expenditure from target account (\$)		
Restaurant dinner	258.89 _{g,h}	295.97 _f
Food delivery	277.50 _{f,g}	237.11 _h
Movie	344.29 _e	327.71 _e
Number of prior expense items in target account		
Restaurant dinner	6.47 _{l,m}	7.14 _k
Food delivery	6.76 _{k,l}	6.16 _m
Movie	8.54 _j	7.97 _j

Note. Cell means with unlike subscripts differ significantly at $p < .05$. Comparisons are made within each dependent measure.

the expense than when they constructed accounts beforehand. In contrast, those who constructed accounts after considering the food expense were less likely to spend than those who constructed accounts before considering it. This was also marginally true of participants who considered the movie expense, $F(1, 212) = 3.24, p < .10$. The expense type \times stage of construction of accounts interaction (*before* versus *after* considering expense) was significant, $F(2, 212) = 7.14, p < .01$.

Prior expenditure from target account. Further support for our conceptualization was obtained from analyses of the actual expenditures allocated to the account to which participants assigned the expense they considered. That is, if participants who constructed accounts after considering the ambiguous restaurant expense assigned prior expenditures to accounts in a way that would justify spending, they should allocate fewer expenses to the account to which they assigned the restaurant expense than participants who were required to use accounts they had already constructed. This was in fact the case. Participants who constructed accounts after considering the restaurant expense allocated a smaller amount of prior expenses to the account to which the restaurant dinner was assigned than those who constructed accounts before considering the restaurant expense. The former participants also allocated fewer (i.e., a smaller number of) expense items to this account than the latter participants did (see Table 5).

Prior spending in accounts associated with unambiguous (food delivery and movie) expenses also suggests why constructing accounts after (versus before) considering these expenses decreased spending likelihood. Constructing accounts after considering these expenses increased the amount of prior expenses assigned to the target account. Having spent more from the target account, these participants were less likely to spend than those who constructed accounts before considering the expense.

Specifically, participants who constructed accounts after considering the food delivery expense allocated a larger amount of their prior expenses to the target account than those who constructed accounts before considering the expense. In addition, the former allocated more (i.e., a larger number of) prior expense items to the target account than the latter (see Table 5).

Participants who constructed accounts after considering the movie expense allocated as much of their prior expenses to the target account as those who constructed accounts before considering the movie expense. However, the former allocated a marginally greater number of items to the target account than the latter $F(1, 212) = 3.60, p < .10$. These effects are confirmed by an interaction of expense type and the stage of construction of accounts in analysis of both the amount of prior expenses assigned to the target account, $F(2, 212) = 7.90, p < .01$, as well as the number of prior expense items assigned to this account, $F(2, 212) = 5.98, p < .01$.

We also explored the number of accounts constructed across different experimental conditions. Participants constructed three (33%, $n = 72$), four (42%, $n = 92$), or five (25%, $n = 54$) accounts. Participants who constructed accounts after considering the ambiguous restaurant expense were more likely to construct five accounts (31%) than those who constructed accounts before seeing the restaurant expense (11%), $\chi^2(1) = 3.84, p = .05$. In contrast, those who constructed accounts after considering the food expense were directionally more likely to construct three accounts (39%) than those who constructed accounts before considering the food expense (21%), $\chi^2(1) = 2.98, p < .10$. The effect of stage of account construction on the number of accounts constructed differed significantly across these two expenses, $\chi^2(1) = 5.89, p < .05$.

Thus, constructing accounts after considering an ambiguous expense may have led to the construction of more specific (and smaller) accounts. In contrast, constructing accounts after considering an unambiguous expense may have led to more general (and larger) accounts. However, the number of accounts does not explain all the variation in the prior expenditure allocated to the target account. The differences between prior expenditure allocated to the target account when constructing the account after versus before considering the expenses remain significant even after controlling for the number of accounts.

We had expected no difference in the construction of accounts between participants who constructed accounts after versus before considering the unambiguous (food delivery or movie) expenses. One, admittedly post hoc, explanation for the observed differences is that greater typicality of these expenses (as food or entertainment expenses) made it easier to construct accounts around them and allocate expenses to this target account.

Expense typicality ratings. We wanted to explore whether, in addition to flexibly constructing accounts, participants also classified the ambiguous expense flexibly. Results suggest this was not the case. Participants who constructed accounts after considering the restaurant expense rated “eating out at a restaurant” to be as typical of a food expense ($M = 7.44$) as those who constructed accounts before considering the expense ($M = 7.33$), $F(1, 212) = 0.06, ns$. The former also rated the expense to be as typical of an entertainment expense ($M = 5.25$) as the latter ($M = 4.53$), $F(1, 212) = 1.48, ns$. Thus, flexible account construction may have made it unnecessary for participants to flexibly classify the ambiguous expense to justify it.

Classification of the food delivery expense was also unchanged. Participants who constructed accounts after considering the food delivery expense rated “food delivered at home” to be as typical of a food expense ($M = 6.92$) as those constructing accounts before considering the delivery expense ($M = 7.11$), $F(1, 212) = 0.12, ns$. The former also rated

the expense to be as typical of an entertainment expense ($M = 2.68$) as the latter ($M = 2.74$), $F(1, 212) = 0.01, ns$.

However, the movie expense was classified flexibly. Participants who constructed accounts after considering the movie expense rated “going out to watch a movie” to be more like a food expense ($M = 3.14$) than those who constructed accounts before considering the movie expense ($M = 1.60$), $F(1, 212) = 12.13, p < .01$. The former also rated the expense to be less like an entertainment expense ($M = 7.40$) than the latter ($M = 8.26$), $F(1, 212) = 4.42, p < .05$.

Discussion

Participants who constructed accounts after considering the ambiguous (restaurant) expense were more likely to spend than those who constructed accounts before considering it, as expected. Malleability in the mental accounting process “liberated” ambiguous expenses by allowing participants in the former conditions to flexibly construct target accounts to have lower prior expenditure, justifying the expense more easily, than participants in the latter conditions. In addition, participants did not change their classification of “eating out at a restaurant” as a food or entertainment expense contingent on whether they constructed accounts after (versus before) considering the ambiguous expense.

In contrast, participants who constructed accounts after considering an unambiguous expense were less likely to spend than those who constructed accounts before considering the expense. This difference was not predicted a priori. The former allocated more prior expenses to the target account, making justification of the expense more difficult, and were thus less likely to spend than the latter. Also, this pattern appeared to be stronger for the food delivery expense than the movie expense. Constructing accounts after (versus before) considering unambiguous expenses appears to “punish” these expenses. Drivers of this result merit additional study.

Participants did not change their classification of “having food delivered at home” as a food or entertainment expense contingent on constructing accounts after versus before considering a food delivery expense. However, participants considering the movie expense did flexibly classify a movie expense as food or entertainment. This may be a reason why the decrease in likelihood of spending, as a function of constructing the account after versus before considering the expense, was smaller for the movie expense than for the food delivery expense.

GENERAL DISCUSSION AND CONCLUSION

Summary of Research

Prior research on mental accounting has often treated mental accounts as self-control devices that are used by consumers to constrain spending. This research demonstrates the conse-

quences of malleability in the mental accounting process, that is, consumers having flexibility in assigning potential expenses to different budgetary accounts. Two experiments study how people exploit malleability to flexibly classify expenses or to construct mental accounts to justify what they want to do versus what they typically constrain themselves to do. Experiment 1 introduced malleability in the mental accounting process through an expense whose classification is ambiguous, and which could be assigned to predefined food or entertainment budgetary accounts. Individuals exploit this flexibility, and classify the expense so as to assign it to the account with a remaining surplus that allows them to justify spending.

Experiment 2 introduced malleability in the mental accounting process by allowing participants to construct budgetary accounts and assign an ambiguous expense to a target account. Constructing accounts after (versus before) considering an ambiguous expense allows individuals to construct the target account in a way that justifies lower prior spending, making spending from it more likely. In contrast, unambiguous expenses are less likely to be incurred when individuals construct accounts after (versus before) considering the expense, with the target account having a greater amount of prior spending assigned to it.

These studies demonstrate how malleability in the mental accounting process allows people to manipulate budgetary mental accounts and justify desirable expenses. Additional analyses revealed that the manipulation involves the flexible classification of the expense (Experiment 1), and the flexible construction of accounts (Experiment 2) for expenses whose classification is ambiguous. In contrast, in the absence of malleability, spending is constrained by existing, or constructed, budgetary accounts.

Implications

This research provides a comprehensive empirical demonstration of how motivation matters in “real” mental accounting processes. The term *real* refers to a description of what people actually do, as opposed to what they precommit to do. Prior research has speculated on the role of motivation in manipulating mental accounts. In discussing the implications of their mental budgeting research, Heath and Soll (1996) wrote the following: “because budgets are inflexible, people may be especially likely to justify their expenses through various ingenious methods of [assigning expenses to accounts]” (p. 51). These results strike the same chord as Heath and Soll’s speculation—that ambiguity can be exploited to justify a desirable choice.

These studies demonstrate processes that individuals use to evade preset rules such as plans, actions, or budgets. Ainslie (1992) also predicted such evasion of self-control rules: “Where a long-term interest has created rules, we should expect to see short-term interests negotiating loopholes” (p. 240). The research presented here also suggests that al-

though individuals do not blatantly violate their mental accounting rules and choose tempting options, they do exploit malleability in the process to justify indulging in an otherwise constrained activity. Consistent with this, Ainslie (1992) wrote the following: “Lapses will occur through loopholes, variously clever and inept, rather than through a global shift of preference in favor of the forbidden activity” (p. 193).

An important prerequisite for motivation to affect choice is the presence of ambiguity in mental accounts. This research joins the small body of research that studies this ambiguity (Soman & Cheema, 2001; Soman & Gourville, 2000). Previously, departures from the mental accounting predictions had been posited due to deficiencies in individuals’ cognitive systems. For instance, Soman (2001) showed that payment mechanisms influence spending behavior because individuals fail to precisely define and update mental accounts. And Soman and Cheema (2002) showed that credulous individuals “mistakenly” use credit as spending money.

However, these results suggest that individuals systematically depart from mental accounting predictions even in the absence of cognitive limitations. This is also consistent with previous research on motivated reasoning, and suggests that the motivation to indulge in a desirable activity may bias the “strategies for accessing, constructing, and evaluating beliefs,” (Kunda, 1990, p. 480). However, the absence of malleability in the mental accounting process constrains consumers, who are unable to construct a justification for doing what they want to do.

This research studies the consequences of motivated reasoning processes for consumer self-control and overspending. Malleable mental accounting is worth understanding for at least two reasons. First, malleable mental accounting has important implications for the effect of motivation on a system of rules. When motivated individuals encounter ambiguity in expense classification or amount definitions, they exploit these loopholes to “short-circuit” rules and to deviate from precommitted courses of action. For instance, a compulsive shopper who makes a rule to never carry a credit card could justify a shopping spree with her card while on vacation by saying that the rule applied only when she was at home.

Second, the need to justify decisions and garb them in the context of a self-imposed system of rules is a pervasive part of individual behavior. One can visualize a friend who treats himself to an expensive dinner after finding a long-lost \$100 bill one week, but who declines to contribute his unexpected bonus to charity because it is earmarked toward a “home improvement” fund. Also, individuals justify lavish lifestyles by expected increases in income and by historic windfall gains that may now be a part of savings (Zelenak, 1999). In these examples, motivated individuals are looking for “rational” ways to behave irrationally.

One possible limitation of this research could be that it uses stimuli where participants are presented with decision

problems and asked to make a hypothetical choice. Although the use of such a methodology is widespread in the individual decision-making literature, it could be argued that the procedure artificially highlights malleability in the mental accounting process, thus driving the results. But this limitation should not invalidate the basic phenomenon posited here, for at least three reasons. First, the stimuli across the two experiments attempt to be as realistic as possible, and the decision situations are ones that consumers often face in reality. Second, malleability is manipulated between subjects, and hence, it seems improbable that it is artificially highlighted. Third, repeating these studies in a real-world context can only increase the ambiguity and hence provide individuals even greater discretion in defining mental accounts.

This research explores one moderator of self-control, namely, ambiguity in the classification of expenses and in the structure of mental accounts. However, there may be several situations where individuals may not exploit such ambiguity. For instance, the manipulation of mental accounts may be lesser when decisions have to be justified to others, when groups versus individuals make decisions, when there are situations of high involvement, or when big-ticket items are being purchased.

Small aberrations in mental accounting can be easily camouflaged by flexible allocation of expenses, but bigger deviations could pose a problem. Both external justification and high involvement situations may bring with them an enhanced sense of stewardship that would dampen the motivation of individuals to manipulate accounts in the presence of malleability.

This is akin to the “accuracy goal” (Kunda, 1990) that leads to more detailed, as opposed to more biased, processing. In this context, it is interesting to note that expenses that belong to only one specific account are less likely to be incurred after increased scrutiny, as demonstrated in Experiment 2. Future research could study the effect of these and other limiting conditions on malleable mental accounting processes.

Finally, we note that in the real world, every mental account is malleable. Although self-help books and household accounting programs serve as guides, individuals are free to define their mental accounts. Even in the absence of ambiguous information, individuals may often “redefine” their mental accounts (by framing them narrowly or broadly, or through temporal reframing) to justify a choice. As individuals are architects of their own mental accounting apparatus, it is not surprising that they leave open loopholes to exploit in the future. Thus, we need to understand better the role of malleability and motivation to conceptualize the architecture of mental accounts and how they control spending.

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