



Advances in Research on Mental Accounting and Reason-Based Choice

RAN KIVETZ¹

Graduate School of Business, Stanford University

Abstract

Research extending over twenty years in behavioral decision theory has led to the development of two important research streams—mental accounting and reason-based choice. This paper explores recent research on the role of mental accounting and reason-based choice in the construction of consumer preferences. Evidence suggests that the principles of mental accounting often regulate the purchase and consumption of luxuries and that reasons may play an important part in this process. In particular, buying and consuming luxury goods tends to call for reasons and justification and can evoke intra-personal conflict that might be resolved with the aid of mental accounting. Moreover, reasons can serve as important building blocks in the formation and grouping of mental accounts. The current paper also discusses the construction of preferences as a process where, in certain cases, consumers choose reasons rather than options. Among other things, focusing on reasons can lead to discrepancies between decisions and consumption experiences, preference intransitivity, and unconventional choices. Directions for future research are discussed.

Key words: Behavioral decision theory, consumer choice, mental accounting, reason-based choice, self-control

Introduction

FIFTY REASONS TO STEAL \$2,000 FROM YOURSELF.

Advertisement Slogan by Discover Brokerage (1999)

A current newspaper ad by Discover Brokerage, featuring the slogan above, urges consumers to open an investment account with a minimum installment of \$2,000 (San Jose Mercury News, 2/1999). The slogan relates to two important research streams in behavioral decision theory (BDT): *mental accounting* and *reason-based choice*. This paper examines current developments in these areas, the links between them, and research questions that merit further study.

While the brokerage firm's advertisement clearly recognizes the impact that reasons may have on choice by actually listing 50 reasons to open an account, its slogan seems to reflect a curious twist of mental accounting. Specifically, if a consumer transfers \$2,000 from a checking to an investment account, why should this be labeled as "stealing from oneself?" One reason may be due to mental accounting, a cognitive process whereby people treat

resources differently depending on how they are labeled and grouped, which consequently leads to violations of the normative economic principle of *fungibility* (Thaler, 1999). Money in one mental account is not a perfect substitute for money in another account. Thus, a consumer might be more inclined to spend \$2,000 on hedonic, luxury goods when the money comes out of a checking rather than an investment account (even when controlling for liquidity constraints and transaction costs).

This example clearly violates fungibility in that funds from a checking account are treated with less thriftiness than investment money, the spending of which may be considered a “vice.” Such behavior illustrates the operation of mental accounting, a wide range of cognitive processes that describe how consumers analyze and treat the results of transactions and other financial events (Kahneman and Tversky, 1984; Thaler, 1980, 1985, 1999). There are three interrelated components to mental accounting (Thaler, 1999) which are described next.

The first component captures how outcomes are framed and experienced. For instance, compared to money earned through hard work, an equivalent amount that is won in a lottery may be perceived as unexpected, less serious, and costless (e.g., O’Curry, 1999). The second component of mental accounting involves the assignment of activities to mental accounts. Specifically, consumers tend to label both resources and consumption, and group them into accounts such as regular income versus windfall gains and necessary consumption (e.g., paying utility bills) versus hedonic (e.g., a cruise vacation). Moreover, consumers have systematic preferences for matching certain mental accounts, such as when they prefer to pay for luxurious consumption with “windfall gains” (e.g., Thaler, 1985). Finally, the third component concerns the frequency with which mental accounts are evaluated (e.g., daily, weekly, yearly) and whether they are defined narrowly or broadly. This might suggest, for example, that consumers who “balance” their accounts every week, as opposed to once a month, are more likely to spend lottery winnings on luxuries during the same week the money was won than a week later.

The tendency to psychologically match the purchase of luxuries with unexpected and windfall monetary resources may suggest that, relative to necessary consumption, buying luxuries is harder to explain. Accordingly, consumers who feel they need to provide reasons or justifications (to themselves or to others) for their purchase decisions may spend regular income more conservatively. It is inherently easier to justify why you purchased an essential good or service that you cannot do without (e.g., a living room sofa), than to defend your decision to buy an extravagant water-bed. This highlights the second theme of the paper, namely that reasons interact with consumer choice through a process that is often iterative. More specifically, *reasons* and *principles* may function as antecedents of consumer choice (e.g., “never purchase the cheapest brand”), as consequences of choice (e.g., dissonance and self-perception), or even as the targets of choice (e.g., choosing the most defensible reason rather than the best option). In the case of frivolous consumption, a good rule of thumb (reason) can be to constrain it to “windfall” accounts. Thus, reason-based choice and mental accounting may work together, as when reasons help determine the matching of different mental accounts.

The main goal of this article is to review current advances in mental accounting and reason-based choice, building on presentations at the HEC Choice Symposium and other

research, and to stimulate further investigations. The rest of this paper is organized as follows. First, it is proposed that mental accounts and reasons interact in the regulation of hedonic consumption. Second, several new applications of mental accounting in the domain of finance are reviewed. Third, the paper advances the notion that, in certain cases, consumer decision-making can be characterized as focusing on choosing the best reasons rather than the most optimal option. Finally, directions for future research are discussed, including greater integration between mental accounting and reason-based choice.

1. Mental accounting and reason-based choice as regulators of hedonic consumption

Prelec and Loewenstein (1998) point out that when consumers make purchases they often experience an immediate *pain of paying*, which can weaken the pleasure derived from consumption or even prevent it altogether. The pain of paying, no doubt, has an important role in consumer self-control. For example, it counteracts biases in the assessment of costs and benefits at the time of purchase, biases that otherwise might lead to habitual overspending (Prelec, 1991; Prelec and Loewenstein, 1998).

The pain of paying might be most acute for spending on luxuries, which are often difficult to justify, because by definition such expenditures are not essential. This proposition is supported by the *reason-based choice* conception which seeks to explain consumer preferences based on reasons that are constructed to justify decisions (Shafir, Simonson, and Tversky, 1993). This framework considers how the reasons that enter into people's thinking about a choice influence their decisions. Such a process can be termed as *implicit reasoning*, because under this analysis "reasons" describe the factors and motives that affect decisions, whether or not they can be articulated or recognized by the decision-maker.

It seems plausible that a need for justification will tend to shift choices in favor of necessities at the expense of frivolous items, and to the extent that consumer choice is based on implicit reasons, hedonic options might be at a disadvantage. Specifically, consumers who tend to make decisions based on inner deliberations and "silent" reasons (provided to themselves) may be more likely to choose necessities because there is a more compelling reason for purchasing such products (i.e., they are simply needed) than for buying luxury goods (which may be perceived as a waste). The notion that implicit reasoning increases necessary consumption, vis-à-vis frivolous purchases, can be empirically tested in further research. Future studies may also examine whether consumers indeed find it harder to justify the purchase of luxuries, for example, by recording respondents' explanation avoidance and latency times. Finally, notice that explicit reasoning—explaining one's choices to others—might operate in a different direction than implicit reasoning. That is, consumers might find it easier to choose luxuries when they are given the opportunity to *explicitly* defend their purchases with written or verbal reasons. Given that purchasing luxuries may be criticized and calls for justifications, consumers are less likely to buy such products without the opportunity to explicitly explain their choice.

Research on mental accounting (e.g., Thaler, 1985) and mental budgeting (e.g., Heath and Soll, 1996) indeed suggests that people may underconsume hedonic, luxury goods.

Thaler (1985) argues that hedonically pleasurable luxuries are often underconsumed for self-control reasons (which is why they are attractive gifts). Accordingly, Heath and Soll (1996) find that mental budgets cause people to underconsume in categories such as entertainment and apparel. However, over time consumers may come to recognize that such expenditures (within a reasonable range) can enhance their quality of life, in many cases without significantly affecting their ability to fulfill their essential needs. Moreover, in some instances consumers can anticipate in advance their inability to wisely balance resources between hedonic and necessary consumption (Kivetz and Simonson, 1999a). In such cases, it is interesting whether consumers will use the principles of mental accounting to alleviate the pain of paying and increase hedonic consumption.

1.1. Decoupling of payment and consumption

Research by Shafir and Thaler (1999) suggests that mental accounting can indeed attenuate the deleterious effects of pain of paying on the enjoyment and likelihood of hedonic consumption. They investigate how expert wine collectors value wine which they originally bought (e.g., for \$20) with the intention of storing for many years. This wine now sells at auctions for a substantially higher price (e.g., \$75). Surprisingly, more than half of the participants in their experiments report that drinking the bottle “now” feels as if it costs nothing or actually saves them money (i.e., drinking a \$75 bottle for which they only paid \$20). However, given that the bottle of wine can be sold (for \$75) at auctions, it should be regarded as an opportunity (replacement) rather than an irrelevant sunk cost.

Note that this neglect of opportunity costs, whereby people feel as if a good is free although it can be sold on the market, contradicts the spirit of classical economic theory. Nevertheless, such perceptions can make people happier by liberating them from a tendency to be overly frugal. In Shafir and Thaler’s (1999) study, for example, wine connoisseurs, who are familiar with markets and auctions for wine, end up consuming a (tradable) \$75 wine bottle for which they would never pay \$75 out of the pocket. The initial purchase is perceived and reasoned as a (wise) investment, and therefore, is probably not subject to intense pain of paying. Indeed, Thaler (1999) suggests that transaction costs may not be treated as painful losses but rather as a cost of doing business. Similarly, it may be easier to support with reasons a decision to buy a luxury item (e.g., a Picasso) when the purchase is framed as an investment rather than as consumption (e.g., purchasing the same Picasso just because you like it).

The wine connoisseurs, then, appear to construe the initial expense as a long-term investment, thus lowering the pain of payment, while drinking the wine subsequently feels free because it doesn’t require any further payment. This form of prepayment “decouples” the expense from the consumption and in doing so reduces the perceived cost of the activity (Gourville and Soman, 1998; Prelec and Loewenstein, 1998). As time passes, the psychological impact of the initial out-of-pocket (\$20) expense may *depreciate* (Gourville and Soman, 1998), while the current opportunity costs are neglected. Again, reasons may play a seductive role in supporting the consumption of the bottle at a later time. These reasons may even *appear* rational, e.g., “I paid for the bottle a long time ago, therefore its

cost is sunk and irrelevant, and it's OK to drink it now." Thus, the mental decoupling of payment and consumption increases the likelihood that wine connoisseurs will allow themselves to drink an expensive bottle.

Decoupling is an intriguing aspect of mental accounting. Prelec and Loewenstein (1998) point out a number of factors, in addition to prepayment, that determine decoupling (see also Thaler, 1999). First, different methods of payment, such as credit cards, are especially conducive to decoupling while others are not (e.g., cash). Second, decoupling is facilitated when one expense is related to many benefits (or vice versa) because it is harder to link a specific benefit (expense) to a specific fee (activity). Decoupling is less likely when a one-to-one relationship exists between payment and consumption. Third, decoupling may depend on individual differences, for example, relative to spendthrifts, tightwads are less likely to decouple payments and consumption.

The decoupling phenomenon demonstrates the rewards to be reaped from a dynamic, intertemporal analysis of mental accounting (e.g., Gourville and Soman, 1998; Prelec and Loewenstein, 1998). Future studies might examine whether the frequency with which mental accounts are "balanced" (e.g., weekly or monthly) interacts with the temporal separation between financial events. This interaction may determine how strongly different financial transactions and mental budgets are grouped or coupled together. Consider Figure 1, which illustrates a simple case of two payments (P_X and P_Y) and two consumption benefits (C_A and C_B) depicted as solid lines pointing downward (disutility) and upward (positive utility), respectively. The x -axis represents time, and two possible accounting frequencies are shown—a weekly "balancing" of mental accounts (denoted with the upper, small rectangles) and a monthly "balancing" (denoted with the lower, wide rectangles). Thus, a number of hypotheses can be derived, including that a consumer who evaluates his accounts every week will be more likely to couple events within the same week (i.e., P_X with C_A in week 1 and P_Y with C_B in week 4) than a consumer who balances his accounts only once a month. Accordingly, the latter consumer might be more

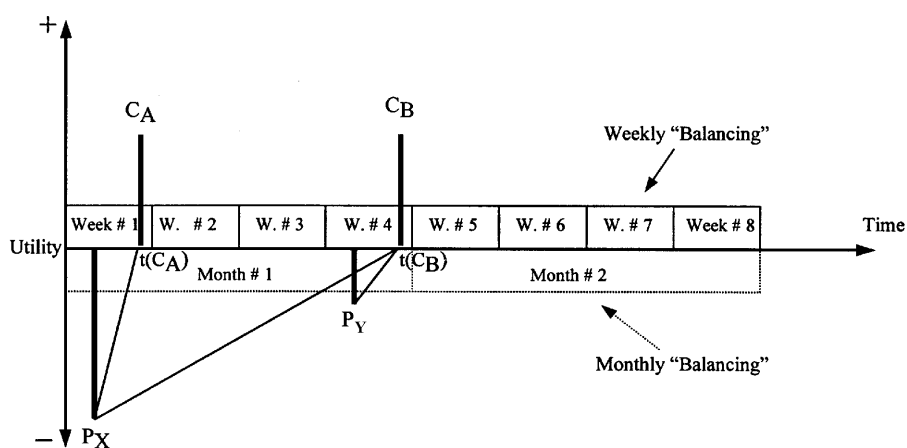


Figure 1. Dynamic Mental Accounting.

likely to couple events from different weeks (e.g., P_X from week 1 with C_B from week 4) than the former consumer.

Figure 1 is also convenient for illustrating a phenomenon termed *payment depreciation*, whereby consumers adapt over time to historic costs, thereby decreasing their sunk-cost impact on the consumption of pending benefits (Gourville and Soman, 1998; see also Thaler, 1985). The psychological sunk-cost pressure may be governed by the following hyperbola:

$$\Psi_{ijn} = \frac{k_n * |P_i|}{[t(C_j) - t(P_i)]} \quad (1)$$

The sunk-cost impact (i.e., Ψ_{ijn}) is proportional to the absolute payment magnitude (i.e., $|P_i|$) divided by the time-delay of the consumption benefit (i.e., $t(C_j) - t(P_i)$). The constant of proportionality, k_n , is a parameter specific to particular forms of payment or consumption, hence its subscript. That is, some payment methods (e.g., cash) and certain types of consumption (e.g., luxurious) might evoke stronger sunk-cost pressures.

In Figure 1, the sunk-cost pressure of a payment on a pending consumption benefit at time t is proportional to the slope of the diagonal line stretching between the payment (e.g., P_X) and the x -axis at the arrival time of the prepaid consumption benefit (e.g., $t(C_A)$). For example, the slope of the line $P_X - t(C_A)$ is steeper than the slope of $P_X - t(C_B)$, which reflects the finding that the same prepayment will induce decreasing sunk-cost pressures as its associated consumption benefit is delayed (Gourville and Soman, 1998). The slopes also capture the notion that the magnitude of the sunk cost effect increases monotonically with the size of the prepayment (e.g., Thaler, 1985). Thus, the slope of the line $P_X - t(C_A)$ is steeper than the slope of $P_Y - t(C_B)$, even though the time-delay between the payment and the consumption benefit is the same in both cases (i.e., $[t(C_A) - t(P_X)] = [t(C_B) - t(P_Y)]$).

Equation 1 characterizes the psychological sunk-cost pressure as: (1) vanishing as the time-delay between payment and consumption goes to infinity, (2) decreasing in a diminishing manner, e.g., postponing immediate consumption by a week decreases sunk-cost pressure more than postponing the same consumption by a week after it has already been delayed 6 months, and (3) infinite when consumption is instantaneous with payment. The theoretical questions raised by the third limiting property are deferred here by introducing the constraint: $t(C_j) \geq t(P_i) + 1$, i.e., consumption must *proceed* payment by at least 1 unit of time.

As Gourville and Soman (1998) conjecture, a parallel psychological process to payment depreciation may take place with respect to benefits that are consumed prior to payments. Thus, future studies could empirically test the fit of Equation 1 to cases where the *rewarding memory* of a past consumption benefit monotonically increases with the size of the benefit, but decays as time passes. Furthermore, different products judged at the initial time of consumption as producing identical subjective utilities may later induce different degrees of pleasant memories due to such factors as differential vividness (e.g., luxuries versus necessities). This hypothesis, which parallels the finding that people exhibit

different time-discount rates across different domains (Prelec and Loewenstein, 1998), can be accommodated with the product specific constant of proportionality, k_n .

1.2. Mental accounts and hedonic self-regulation

Shafir and Thaler's (1999) "wine study" is consistent with the notion that a consumer who subscribes to mental accounting walks a thin line between the psychologically beneficial and the economically erroneous. Field and laboratory experiments by Leclerc and Thaler (1999) support this assertion, showing that consumers are more likely to redeem \$1 coupon (when purchasing an Ocean Spray bottle) when this \$1 can be saved on *any item in the store* than when the \$1 can be saved *only on the Ocean Spray*. Notice that in both cases the consumer is required to purchase the Ocean Spray in order to save the \$1, and that the same dollar amount is saved. Thus, although both coupons are economically identical, each affects consumer behavior quite differently.

Leclerc and Thaler (1999) conjecture that coupon savings are considered frivolous income sources that consumers would like to spend on luxuries, in essence giving themselves gifts. This suggests that consumers use the "dollar off any item in the store" coupon to "subsidize" the purchase of some hedonic good (e.g., ice cream) as opposed to a utilitarian good (e.g., toothpaste). This account appears to be linked to reason-based choice in that the "dollar off any item" coupon can be assigned to the item that requires more justification for its purchase (i.e., a frivolous good). A different interpretation of the results is based on an *illusion of control* (Langer, 1975), whereby consumers mistakenly perceive the "dollar off any item in the store" as providing more freedom of choice. More research is necessary to discern these two explanations.

In addition, future research might look at the types of splurges that evoke more intrapersonal conflict, and thus, may be especially responsive to promotions similar to the "dollar off any item" coupon. For instance, switching from standard to a high-end items in utilitarian categories (e.g., upgrading from store to national brand in flour) may require more justification than similar switching in hedonic categories (e.g., switching from Dreyer's premium to Häagen-Dazs superpremium ice cream) because hedonic categories seem more compatible with "going all the way."

Kivetz and Simonson (1999a) also investigated a version of mental accounting where certain resources are more easily allocated towards hedonic consumption. Building on Thaler's (1985) discussion of in-kind versus cash gifts, Kivetz and Simonson propose that consumers often voluntarily exercise hedonic self-control, whereby they attempt to avoid default forms of spending on necessities in favor of luxury, hedonic purchases. For example, consumers may pre-commit to go on a Caribbean cruise in order to ensure that money and time are set aside for that purpose, as opposed to devoting resources to a "general fund" (i.e., routine, necessary spending and activities). A series of studies, in which respondents were required to choose between a cash amount and an equally, or *lower*, valued luxury, hedonic item (e.g., a home theater system), indicated that substantial proportions of consumers (between 12% and 28% in the various conditions) actively try to

force themselves to allocate money to hedonic experiences by precommitting to luxurious goods and services (Kivetz and Simonson, 1999a).

To examine potential rival accounts, respondents in some conditions were asked to provide written explanations for their choices. These reasons tended to confirm the hedonic self-control conception but not the alternative interpretations. Specifically, many of those choosing a luxurious in-kind over a cash amount of equal monetary value explained their preference as a pre-commitment to hedonic consumption. Examples of such reasons include, "I would choose the cruise because I would be guaranteed to enjoy myself, whereas if I won the money I would probably spend it on bills" and "With the cruise, I would be forced to take the time off from work to enjoy the prize, but with the cash I would just pay bills." Interestingly, when the luxurious in-kind was of *lower* monetary value than the cash amount, thus clearly being dominated, more respondents explained choosing it with a pre-commitment rationale. Indeed, in this condition there is a greater need for thinking about reasons and justifications for choosing the (lower valued) in-kind, and thus, in-kind choosers may generate subtler and more insightful reasons.

When respondents were asked to anticipate potential uses of both choice options, an overwhelming majority predicted that they would use the cash for necessary consumption. This result clearly detects the presence of mental accounting: Cash that otherwise would be spent on necessities is converted, by virtue of a pre-committing choice, to hedonic consumption. Notice that the usage-anticipation manipulation highlights people's thriftiness because they predict spending the cash, which (more than) suffices to purchase the in-kind, on necessities. Yet surprisingly, although (or more precisely *because*) consumers realize that they will rather spend the cash on necessities, the usage-anticipation manipulation significantly increases the choice share of luxurious in-kinds. This suggests that consumers reason that the cash would be put into a "general account" that is used for routine, necessary spending and is harder to match with luxurious consumption. Thus, they prefer to pre-designate the prize as a luxury. This paradox, again, supports the notion that the interaction between reasoning and mental accounting can help counteract the pain of paying and a tendency to underconsume luxuries.

1.3. Extending the scope of mental accounting: applications in finance

Researchers working in the area of mental accounting have extended its scope far beyond the set of questions it originally set out to answer (Thaler, 1999; cf. Thaler, 1985). One important application domain is in finance, where investigators have recently embarked on an effort to *empirically* examine some predictions derived from mental accounting regarding both individual investment decisions and firm behavior (e.g., Degeorge et al., 1999; Odean, 1998).

As an example of the type of recent empirical work in this field, consider the notion that mental accounting favors selling stocks that have increased in value (Shefrin and Statman, 1987), while a rational analysis prescribes selling those stocks that have decreased (e.g., due to tax considerations). Odean (1998) finds strong support for the mental accounting prediction, which is also called the *disposition effect*. Using stock transaction data from a

brokerage house, he finds that investors were more likely to sell one of their winning stocks than one of their losing stocks. A related result is that of Dhar and Simonson (1999) who demonstrate that investors try to break-even on a previous capital loss (e.g., on a Donna Karan stock) when offered a choice between the same stock and a risk-free money market account (i.e., by purchasing additional Donna Karan shares). Conversely, when offered a choice between another stock (with the same risk characteristics) and the risk-free option, investors cease trying to break-even and prefer the risk-free account. This finding indicates that stock investors seem to define their mental accounts rather narrowly according to specific stocks.

It is noteworthy that the disposition effect may reflect the impact of reason-based choice on investor decision-making. Specifically, when investors realize capital gains (losses), they often have to provide (painful and difficult) reasons for their performance to their clients, partners, or even themselves. Thus, a stock in the black (red) provides a prominent reason to sell (hold). For brevity's sake, a comprehensive review of current progress relating to mental accounting in finance is not provided here. The interested reader is directed to Thaler (1999) for a discussion of the application of mental accounting in the realms of saving, investment, and financial accounting (see also Hsee and Kunreuther (1999) for mental accounting in insurance decisions). We are likely to experience more growth in behavioral finance with future research combining multiple methods, including survey research, laboratory computer simulations, and analysis of real-world databases.

2. The interaction between reasons and choice

Previous research indicates that in many cases choice can be depicted as a search for the option that is supported by the best overall reasons (Shafir, Simonson, and Tversky, 1993). This perspective of choice is especially valid when an automatic, easy choice is unavailable and consumers face a decision that is hard to resolve and cannot be avoided (cf. Dhar, 1997). In such instances, people may search for a compelling rationale for preferring one option over another. Relatedly, Prelec and Herrnstein (1991) describe choice as "a search for a unique principle that covers the decision at hand and is not dominated by another more powerful principle." They explain that such principle- or rule-based choice replaces a case-by-case cost-benefit calculation that trades-off among the competing dimensions of the possible options.

It has been shown that when people think about reasons for their decisions, the choices they eventually make can be different from when they make choices without thinking about reasons (e.g., Shafir, Simonson, and Tversky, 1993; Wilson and Schooler, 1991). Specifically, some reasons are more salient, plausible, and easier to verbalize than others and, therefore, may receive more weight in the choice process when the decision-maker is required to reason outloud or on paper before making a choice. Moreover, it seems logical that reasons would loom larger in the choice process than in the consumption experience (Hsee and Shafir, 1999). Consequently, the reasons or rationales that guided a consumer's choice may become irrelevant or even regretful at the time of the actual consumption.

2.1. Choosing reasons versus consuming products

Hsee and Shafir (1999) theorize that when making decisions, people are concerned with reasons, objective rules, and “rationales.” However, during the consumption phase people tend to focus on feelings and subjective experiences. Indeed, it seems as if people have two different scales on which they value options: One is a *pre-hoc* scale used for choice, and the other is a *post-hoc* scale used for assessing the experience in real-time or in retrospect².

The apparent existence of separate valuation scales for choosing and for assessing experiences leads to what Hsee and Shafir (1999) term as *decision/consumption inconsistency*. This “within-person” inconsistency relates to two main types of BDT phenomena. The first group consists of prediction errors, for instance, when the decision-maker’s reasoning miscalculates the changing tastes of the consumer. Empathy gaps (Loewenstein, 1996), both “cold-hot” and “hot-cold,” can be viewed as manifestations of prediction errors. In the former case, the decision-maker is influenced by “cold” reasoning (e.g., “it’s productive to wake up early”) while the consumer is affected by “hot” sensations (e.g., sleepiness). Conversely, in the latter kind of empathy gaps, the decision-maker’s reasoning is affected by a “hot” state (e.g., intense hunger) while the consumer later “chills down” (e.g., after eating a bit). In both cases, the choice is focused on rationales, which are sensitive to the decision-maker’s present state, and therefore, might be inappropriate for future activities and consumption. Thus, people sometimes set alarm clocks to hours at which they cannot wake up, or purchase food they subsequently waste.

The second cluster of BDT findings that relate to the decision/consumption discrepancy are task and context effects (e.g., Hsee, 1996; Huber, Payne, and Puto, 1982; Nowlis and Simonson, 1997; Simonson and Tversky, 1992). For example, consumers may decide which product to purchase based on an *implicit* decision rule, such as “Avoid extremes and opt for compromise choices which are easier to defend” (Simonson and Tversky, 1992). This reasoning, called *extremeness aversion*, has been shown to increase the choice likelihood of a middle option regardless of its particular identity. However, notice that the non-chosen alternatives are likely to be salient and influential at the original choice, but not during consumption. Thus, a decision/consumption inconsistency may arise. Future research could examine the conditions under which the decision-maker’s choices are better aligned with the *consumer’s* satisfaction. For example, reasons that are independent of the local context and of the specific task (i.e., thinking globally) may eliminate the decision/consumption discrepancy. One technique might be to select and tradeoff the relevant guiding rationales in a category before considering the specific task and set of options. A different method of mitigating the decision/consumption discrepancy may be to recall—during the consumption phase—the reasons that previously affected the choice.

The decision/consumption inconsistency framework suggests that a mentality difference separates the decision-maker from the consumer. The decision-maker’s task is acceptance or rejection of options knowing that his decisions might be challenged by others or even by himself (the consuming self). On the other hand, the consumer isn’t concerned with criticism because his task is simply to consume and experience whatever alternative was already chosen. People debate about decisions and choices, but “*de gustibus non est disputandum*.”

Reasons are more prevalent in the pre-consumption decision phase because they are used as both input for the choice and as anticipated justifications for it. Since preferences are often *constructed on the fly* rather than retrieved from memory (e.g., Payne, Bettman, and Johnson, 1992), people use reasons to form these preferences and justify them to themselves and others. Furthermore, reasons may occasionally operate as insurance for the decision-maker from uncertain preferences. That is, if one is about to make a risky decision (e.g., deciding on a medical treatment), constructing a sound reason can later help one live with the consequences of her choice. In a sense, people may sometimes *choose reasons and not options*. In other words, there might be little deliberation on which option to prefer or reject (e.g., "I know I want to avoid an operation"), but rather on which reasons will optimize future feelings.

2.2. Product dimensions as reasons

Dimensional (i.e., within attribute) processing can also be construed as an example of choosing reasons rather than options. Specifically, people often process product information by attribute rather than by brand or by alternative (e.g., Bettman, Johnson, and Payne, 1991). Consequently, consumers may focus their cognitive efforts on deciding which product attributes should receive the highest weight in their decisions and then automatically choose the option that performs best on these attributes. Notice that under such a meta-strategy the attribute-weighting scheme completely determines the actual product choice. To the extent that one can equate product attributes with reasons, the allocation of decision weights in dimensional processing can be likened to choosing reasons.

Research by Slovic and MacPhillamy (1974) and by Kivetz and Simonson (1999b) demonstrates that people often favor attributes that serve as prominent reasons for choice. Specifically, when product information is incomplete consumers appear to overweigh (common) attributes that allow them to make direct comparisons between considered options at the expense of (unique) attributes that are unavailable for some of the options. Common attributes seem more diagnostic for choice than unique attributes, and consequently, provide a ready justification or reason for a product choice. In fact, Kivetz and Simonson demonstrated that a systematic manipulation of missing attribute information could lead to preference intransitivity, a clear violation of value maximization. Consider the following example:

| | <u>Portable PC A</u> | <u>Portable PC B</u> | <u>Portable PC C</u> |
|---|---------------------------|---------------------------|---------------------------|
| <u>Speed</u> (range: 85 to 200MHz) | 100MHz | (Information Unavailable) | 166Mhz |
| <u>Memory</u> (range: 4 to 32MB Ram) | 24MB Ram | 12MB Ram | (Information Unavailable) |
| <u>Battery Life</u> (range: 1 to 11 hours) | (Information Unavailable) | 8 hours | 3 hours |

Figure 2. Portable PCs Described with Missing Information.

In one study, respondents were asked to choose between each pair of options (A & B, B & C, and C & A). The results indicated that 28% of the respondents preferred A to B, B to C, and C to A, exhibiting preference intransitivity. Analyses of verbal protocols and respondents' written explanations indicated that respondents tended to use common attributes as a reason for choosing the alternative superior on the common attribute. Moreover, the overweighing of common attributes persisted also in subsequent choices with full information, such that these choices were biased in favor of previously common attributes. Thus, in the calculus of reasons a common attribute counts more than a unique one.

The reasons that respondents provided for their choices revealed that, rather than ignore missing values (e.g., the "Information Unavailable" for Portable PC A's battery life), they appear to adjust the weights of unique attributes in a manner that supports choices based on the common attributes. Specifically, consumers tend to dismiss the significance of a missing value of their favored option, the one that is superior on the common attribute, while emphasizing the importance of the missing dimensions of other considered options. For example, when choosing between portable PCs A and B in the preceding example, where A is superior on the common attribute, consumers tend to indicate that now knowing the battery life of portable PC A is not of great concern to them and does not materially affect the attractiveness of that option. Conversely, consumers who consider portable PCs A and C, where A is inferior on the common dimension, tend to point to the (same) missing battery life information of PC A as a reason against that option that supports rejecting it. An interesting question that cannot be easily investigated is whether such use of missing values is a strategy for rationalizing decisions that have already been made, or whether it precedes the final choice.

This differential use of missing information demonstrates a process that can be described as a search for dominance, which provides a compelling reason for choice (Montgomery, 1989). Montgomery proposed that decision-makers try to construct a dominance structure, such that selected options can be perceived as dominating other options even when their values are not superior on all dimensions. The intuitive notion of a search of de facto dominance is related to the idea that consumers often focus on constructing compelling reasons rather than on making value-maximizing choices.

Following a suggestion by Robyn Dawes, Kivetz and Simonson (1999b) tested to see what would happen if respondents infer the midpoint of each unique attribute's range for the missing values. Interestingly, if subjects indeed replace missing values with the mid-range, then the option that is superior on the common dimension is inferior on the other two dimensions (due to the manner in which the binary sets used in the tests of intransitivity were designed). Prior research indicates that consumers often use the *majority of confirming incidents* decision rule, whereby they select the option that is superior on the majority of dimensions (e.g., Bettman, Johnson, and Payne, 1991). If such a rule is indeed employed, then substituting the attribute mid-range for missing values is likely to reverse the direction of intransitivity (i.e., respondents will consistently select the option that is inferior on the "common" attribute and is superior on the two other attributes).

For example, in the portable PC category presented earlier, the missing values were replaced with meaningful values that were close to the midpoint of each unique attribute's

| | <u>Portable PC A</u> | <u>Portable PC B</u> | <u>Portable PC C</u> |
|---|----------------------|----------------------|----------------------|
| <u>Speed</u> (range: 85 to 200MHz) | 100MHz | <u>140MHz</u> | 166Mhz |
| <u>Memory</u> (range: 4 to 32MB Ram) | 24MB Ram | 12MB Ram | <u>16MB Ram</u> |
| <u>Battery Life</u> (range: 1 to 11 hours) | <u>6 hours</u> | 8 hours | 3 hours |

Figure 3. PC Problem with Substitution of Attribute Mid-Ranges for Missing Values.

range (shown with underlines in Figure 3). Preference intransitivity was again observed, but this time the direction of the effect was reversed: PC C was preferred to PC B, B was preferred to A, but A was preferred to C. It seems that respondents use the *majority of confirming incidents* rule as a strong reason for choosing and rejecting options. Clearly, then, in the calculus of reasons two attributes count more than one. The fact that this can lead to preference intransitivity suggests that consumers have strong preferences towards the decision rule, but may construct weak and inconsistent preferences regarding the options. Future research can explore factors that impact the balance between reason- and option-based choice. Possible moderators may be the type of product category (e.g., hedonic versus utilitarian), social conditions (e.g., accountability), individual differences (e.g., need for cognition), time (e.g., delayed versus pending consumption), task variables (e.g., time pressure, choice complexity and conflict), and the degree to which consumer tastes are well-formed.

2.3. The interplay between unconventional reasons and choice

Research by Simonson and Nowlis (1999) suggests that people, who explain their decisions without being concerned about criticism, tend to favor unconventional reasons, and consequently, are more likely to make unconventional choices. For example, consumers who are required to explicitly explain their decisions are less likely to choose compromise options and are less likely to change their preferences in response to advertising puffery. This tendency was found to be most pronounced among individuals who have a high need for uniqueness (Synder and Formkin, 1977).

Simonson and Nowlis posit that people may use unconventional reasons as expressions of their uniqueness and autonomy and as an opportunity to display superior intellect. Furthermore, the ability to explain makes it easier to select (unconventional) options that call for explanations. Simonson and Nowlis also explore a number of boundary conditions under which reasons do *not* produce unconventional choices, including (1) identifying consumers and informing them that their choices may be evaluated, (2) providing consumers with precise information about the preferences of others in the same situation, and (3) providing negative feedback on previous decisions.

Finally, analyzing and providing reasons may influence not only unconventional and hedonic choices as discussed earlier, but also decisions that have a large affective component (Wilson and Schooler, 1991). When consumers form attitudes through a process that involves emotions or toward products that have an affective component (e.g., luxuries), providing reasons may emphasize cognition and obscure affect, consequently, shifting choices. In addition, decisions that were made based on feelings may be subsequently rationalized based on cognitive criteria by shifting tastes (i.e., attribute importance) to support the earlier choices.

3. Summary and research directions

Both mental accounting and reason-based choice continue to be active research areas that provide insights into consumer choice. Yet, many questions remain unanswered and await future exploration. For example, more research is required to understand the moderators and consequences of coupling and decoupling of mental accounts. One step in that direction is a study by Soman and Gourville (1998) that suggests that decoupling can be motivationally driven. In particular, they found that when consumers were motivated to avoid consumption due to the unattractiveness of an activity (e.g., skiing in *poor* conditions), consumers appeared to strategically *decouple* transaction costs from consumption activity, so as to experience low levels of sunk-cost pressure. Conversely, when consumers were motivated to consume due to the attractiveness of an activity (e.g., skiing in *ideal* conditions), they appeared to strategically *couple* costs and consumption, so as to experience high levels of sunk-cost pressure and thus increase the likelihood of consumption (Soman and Gourville, 1998).

While decoupling has received much attention (e.g., Gourville and Soman, 1998; Prelec and Loewenstein, 1998), further work may study the conditions that induce coupling versus decoupling. If the mental accounting process can be flexible and self-serving, as suggested by some of the research reviewed in this article, then people may in fact strategically organize their own mental accounts to fit their more hedonic, yet frivolous desires. Indeed, research by Snell, Gibbs, and Varey (1995) suggests that consumers may have an intuitive grasp of some mental accounting principles. In particular, consumers can predict the future hedonic impact of Weber's law (e.g., the hedonic impact of winning \$100 in a lottery is greater when a person earns \$20,000/yr. rather than \$40,000/yr.). Thus, consumers' lay beliefs about mental accounting and consequent hedonic states suggest that they might be able to intentionally use mental accounting to resolve inner struggles to balance luxury and necessary consumption (see also Gibbs, 1999 for evidence on consumers' self-manipulation of tastes). For instance, some business-people find it easier to spend time and money on vacations when they can bundle them with doing business³. Thus, pleasurable luxuries that are *over-controlled* and that require reasons and justifications might benefit from coupling with more "virtuous accounts" like work. Indeed, Strahilevitz and Myers (1998) show that promised donations to charity are more effective in promoting frivolous luxuries than in promoting practical necessities, presumably because charitable giving reduces the guilt associated with hedonic consumption.

Moreover, consumers may prefer to decouple consumption from payment when the consumption is perceived or framed as hedonic (relatively “viceful”). Conversely, when the consumption activity is perceived as utilitarian (relatively “virtuous”), consumers may favor coupling of consumption and payment to increase the economic efficiency of their decisions. New technologies (e.g., smart cards), with fuzzy links between payments and consumption, might facilitate the manipulation of mental (de)coupling processes.

Reasons can play an important role in such mental (de)coupling that borders on self-deception. On the one hand, hedonic consumption, which might benefit from grouping with virtuous activities and decoupling from payment, calls for explanations and reasons. On the other hand, reasons may serve as important building blocks in the process of motivationally driven (de)coupling. Thus, people may use reasons like “that business meeting is really important” in order to couple a hedonic excursion with a more justifiable goal. The contribution of reasons to the construction and association of mental accounts leaves much room for further research.

Choice often involves an intertemporal tussle between what one *should* do (long-term interests) and what one is tempted or *wants* to do (see Bazerman et al., 1998). As revealed in the analysis of self-control problems, mental accounting and reason-based choice may interact in resolving this intra-personal conflict. Both have been dealt with extensively in the literature as important elements in the battle against myopic tendencies. Moral reasons such as, *prudential* rules and principles, have been discussed as rigid forms of self-management that help individuals resist short-term temptations (e.g., Prelec and Herrnstein, 1991). Indeed, thinking about what one *should* do appears like a process of *reasoning*. Mental accounting, too, has often been applied to the analysis of self-control devices (e.g., Christmas Clubs) that promote long-term interests (e.g., Thaler, 1980, 1999; Thaler and Shefrin, 1981; Wertenbroch, 1998). Furthermore, mental accounting and reasons can operate jointly in the construction of virtuous pre-commitment devices. For example, consumers may follow rules like “always buy sinful products in small packages,” or “one must have whole life insurance,” even when this leads to economically suboptimal behavior (Thaler, 1980; Wertenbroch, 1998). Such rules lead to the formation and conservation of accounts that guarantee long-term interests.

The current article proposes that reasons and mental accounting can also help consumers realize their hedonic *wants* when these are underserved. Thus, people may use reasons to (re)label consumption to make it seem less indulgent, for instance, defining eating out as “food” rather than “entertainment”. Or, they may utilize reasons to rationalize an exception to a thrifty rule: “Never eat out more than twice a week.” Consumers may also pre-commit certain funds, (e.g., sweepstakes winnings) to hedonic consumption, as when they prefer a Hawaiian vacation over a cash amount of equal (or greater) monetary value (Kivetz and Simonson, 1999a). Reasons are conducive to this hedonic self-control because they provide the consumer with rationales for the pre-commitment, such as “Otherwise I would never enjoy the prize” or “It’s OK to spend frivolous sweepstakes funds on frivolous activities.”

Throughout this article I have used the terms “reasons,” “rules,” and “principles” interchangeably. But all reasons were not created equal; that is, there might be a hierarchy of reasons where some are at a higher level than others. For example, *principles* seem to

refer to deeper, more universal guidelines for action, that require further elaboration before they can be utilized in a particular case. *Rules*, on the other hand, are rigid and relatively unambiguous, and thus can be applied quite automatically (e.g., Prelec and Herrnstein, 1991). Then again, every rule has its *exception*, which may be determined and defended based on *reasons* that are frequently pliable. Further down the “reason food-chain” are *heuristics* (rules-of-thumb), which the decision-maker often uses with barely any deliberation or awareness at all. Curiously, because heuristics are more automatic than other types of reasons they may actually have a larger impact on every-day choice behavior.

Finally, note that in certain choices consumers may need to trade-off between the quality and quantity of reasons. Specifically, certain options may be supported by numerous reasons, while other options may be supported by few, yet powerful considerations. The Discover Brokerage firm appears to incorporate this intuition in their ad which seeks to influence consumers’ mental accounting with reasons. Indeed, it might take as many as 50 *reasons* to overrule a universal moral *principle*, “Thou shalt not steal.”

Notes

1. This paper is based upon the discussions in the Session on BDT Research at the 1998 Choice Symposium at H.E.C. France. The participants in the track were: Robyn Dawes (*Carnegie-Mellon University*), Francois Degeorge (*Group H.E.C.*), Ravi Dhar (*Yale University*), Christopher K. Hsee (*University of Chicago*), Ran Kivetz (*Stanford University*), France Leclerc (*University of Chicago*), Drazen Prelec (*MIT*), Eldar Shafir (*Princeton University*), Itamar Simonson (co-chair) (*Stanford University*), Jack B. Soll (*INSEAD*), and Richard H. Thaler (co-chair) (*University of Chicago*). The paper benefited from comments made on earlier drafts by session members, the editor, five anonymous reviewers, Agnish Chakravarti, Susan Chiu, and Brian Gibbs. The usual disclaimer applies.
2. This conceptualization is akin to the work of Kahneman and his colleagues (e.g., Kahneman and Snell, 1990; Kahneman and Varey, 1991) on experience utility, decision utility, and predicted utility.
3. A recent Cahners Research Survey concluded that the corporate world likes to mix business and pleasure. Three-quarters of the 501 business travelers questioned had made at least one hybrid trip over the last year, combining a business engagement with a partial vacation (San Jose Mercury News, 3/1999).

References

- Bazerman, Max H., Ann E. Tenbrunsel, and Kimberly Wade-Benzoni. (1998). “Negotiating With Yourself and Losing: Making Decisions With Competing Internal Preferences,” Northwestern University working paper.
- Bettman, James R., Eric J. Johnson, and John W. Payne (1991), “Consumer Decision Making,” in Thomas S. Robertson and Harold H. Kassarian (eds.), *Handbook of Consumer Behavior*, Chapter 2, 50–84, Prentice Hall.
- Degeorge, Francois, Jay Patel, and Richard Zeckhauser. (1999). “Earnings Management to Exceed Thresholds,” *Journal of Business*, (January).
- Dhar, Ravi. (1997). “Consumer Preference for a No-Choice Option,” *Journal of Consumer Research*, 24(2), 215–231.
- and Itamar Simonson. (1999). “Mental Accounting in Investor Decision Making,” Stanford University working paper.
- Gibbs, Brian J. (1999). “Direction Theory: Inward Versus Outward Decision Making, Chameleonic Consumers, and the Self-Manipulation of Tastes,” working paper, Owen Graduate School of Management, Vanderbilt University, Nashville, TN 37203.

- Gourville, John T. and Dilip Soman. (1998). "Payment Depreciation: The Effects of Temporally Separating Payments from Consumption," *Journal of Consumer Research*, 25(2), 160–174.
- Heath, Chip and Jack B. Soll. (1996). "Mental Budgeting and Consumer Decisions," *Journal of Consumer Research*, 23 (June), 40–52.
- Huber, Joel, John W. Payne, and Christopher Puto. (1982). "Adding Asymmetrically Dominated Alternatives: Violations of Regularity and the Similarity Hypothesis," *Journal of Consumer Research*, 9 (June), 90–98.
- Hsee, Christopher K. (1996). "The Evaluability Hypothesis: An Explanation for Preference Reversals Between Joint and Separate Evaluations of Alternatives," *Organizational Behavior and Human Decision Processes*, 67(3), 247–257.
- and H. Kunreuther. (1999). "Insurance Purchase as an Expression of Feelings," Paper in preparation, the University of Chicago.
- and Eldar Shafir. (1999). "Inconsistencies Between Decision and Consumption Experience," Paper in preparation. Center for Decision Research. The University of Chicago.
- Kahneman, Daniel and Amos Tversky. (1984). "Choices, Values, and Frames," *The American Psychologist*, 39, 341–350.
- Kivetz, Ran and Itamar Simonson. (1999a). "The Joyless Consumer: Using Self-Control Strategies to Increase Hedonic Consumption," Stanford University working paper.
- and Itamar Simonson. (1999b). "The Effects of Incomplete Information on Consumer Choice," Stanford University working paper.
- Langer, Ellen J. (1975). "The Illusion of Control," *Journal of Personality and Social Psychology*, 32, 311–328.
- Leclerc, France and Richard H. Thaler. (1999). "When a Dollar Off is Worth More Than a Dollar," University of Chicago working paper.
- Loewenstein, George. (1996). "Out of Control: Visceral Influences on Behavior," *Organizational Behavior and Human Decision Processes*, 65(3), 272–292.
- Montgomery, Henry (1989), "From Cognition to Action: The Search for Dominance in Decision Making," in H. Montgomery and O. Svenson (eds.), *Process and Structure in Human Decision Making*, Chapter 2, 23–49, John Wiley & Sons.
- Nowlis, Stephen M. and Itamar Simonson (1997), "Attribute-Task Compatibility as a Determinant of Consumer Preference Reversals," *Journal of Marketing Research*, 34 (May), 205–218.
- O'Curry, Suzanne. (1999). "Income Source Effects," unpublished working paper, DePaul University.
- Odean, Terrace. (1998). "Are Investors Reluctant to Realize Their Losses?" *Journal of Finance*, (October).
- Payne, John W., James R. Bettman, and Eric J. Johnson. (1992). "Behavioral Decision Research: A Constructive Processing Perspective," *Annual Review of Psychology*, 43, 87–131.
- Prelec, Drazen. (1991). "Values and Principles: Some Limitations on Traditional Economic Analysis," in A. Etzioni & P. Lawrence (eds.), *Socioeconomics: Toward a New Synthesis*. New York: M.E. Sharpe.
- and Richard J. Herrnstein. (1991). "Preferences or Principles: Alternative Guidelines for Choice," in Richard J. Zeckhauser (eds.), *Strategy and Choice*. Cambridge, Mass.: MIT Press, pp. 319–340.
- and George Loewenstein. (1998). "The Red and the Black: Mental Accounting of Savings and Debt," *Marketing Science*, 17 (1), 4–28.
- Shafir, Eldar, Itamar Simonson, and Amos Tversky. (1993). "Reason-Based Choice," *Cognition*, 49 (1–2) (October–November), 11–36.
- and Richard H. Thaler. (1999). "Invest Now, Drink Later, Spend Never: The Mental accounting of Advanced Purchases," University of Chicago working paper.
- Shefrin, Hersch M. and Meir Statman. (1987). "The Disposition to Sell Winners Too Early and Ride Losers Too Long," *Journal of Finance*, 1987, 40, 777–790.
- Simonson, Itamar and Stephan Nowlis. (1999). "Constructive Decision Making in a Social Context: Unconventional Choices Based on Reasons," Stanford University working paper.
- and Amos Tversky. (1992). "Choice in Context: Tradeoff Contrast and Extremeness Aversion," *Journal of Marketing Research*, 29 (August), 281–295.
- Slovic, Paul and David MacPhillamy. (1974). "Dimensional Commensurability and Cue Utilization in Comparative Judgment," *Organizational Behavior and Human Performance*, 11, 172–, 194.

- Snell, Jackie, Brian J. Gibbs, and Carol Varey. (1995). "Intuitive Hedonics: Consumer Beliefs About the Dynamics of Liking," *Journal of Consumer Psychology*, 4(1), 33–60.
- Snyder, C. R. and Howard L. Fromkin. (1977). "Abnormality as a positive characteristic: The development and validation of a scale measuring need for uniqueness," *Journal of Abnormal Psychology*, 86(5) (Oct.), 518–527.
- Soman, Dilip and John T. Gourville. (1998). "Transaction Decoupling: The Effects of Price Bundling on the Decision to Consume," Marketing Science Institute working paper # 98–131, Cambridge, MA.
- Thaler, Richard H. (1980). "Toward a Positive Theory of Consumer Choice," *Journal of Economic Behavior and Organization*, 1, 39–60.
- .(1985). "Mental Accounting and Consumer Choice," *Marketing Science*, 4 (Summer), 199–214.
- .(1999). "Mental Accounting Matters," forthcoming in Daniel Kahneman and Amos Tversky (eds.), *Choices, Values, and Frames*. Cambridge University Press.
- and Hersch M. Shefrin. (1981). "An Economic Theory of Self-Control," *Journal of Political Economy*, 89, 392–410.
- Wertenbroch, Klaus. (1998). "Consumption Self-Control by Rationing Purchase Quantities of Virtue and Vice," *Marketing Science*, 17(4), 317–337.
- Wilson, Timothy D. and Jonathan W. Schooler. (1991). "Thinking Too Much: Introspection Can Reduce the Quality of Preferences and Decisions," *Journal of Personality and Social Psychology*, 60 (2) (February), 181–192.