

If there is one thing behavioral research has taught us, it is that human behavior is not always rational. Our judgment and decision making skills are fallible, and based on context, can fluctuate. Take, for example, how our brain understands money.

Mental accounting, which plays an instrumental role in helping us make financial decisions, explains how we treat money differently (place it under different categories) depending upon its source and its intended use. A classic explanation of the concept uses the example of movie tickets:

"Imagine you just arrived at a theater and as you reach into your pocket to pull out the \$10 ticket you purchased in advance, you discover that it's missing. Would you fork over another \$10 to see the movie? Compare that to a second scenario in which you did not buy the ticket in advance, but when you arrive at the theater, you discover you had lost a \$10 bill on the way. Would you still buy a movie ticket? "

Kahneman & Tversky (1983) used this hypothetical in their research, and although in both cases the amount of money lost equals \$10, more people (88%) were willing to buy a ticket in the latter case, compared to the former. The 44% who were willing to replace the missing ticket in the first scenario felt the cost of watching the movie had doubled, since it was drawing from the money (mentally) allocated for movies, which was not the case with the lost cash.

Mental accounting also explains why small windfall gains, like a \$50 lottery win, or gift cash from a friend, are more likely to be spent easily, as they are considered unexpected gains, rather than regular income. By creating mental accounts, we essentially ignore the fact that money is fungible, i.e. that all money is the same, and interchangeable.

The phenomenon also helps us understand why we tend to treat credit card payments differently from cash payments. First, credit cards "decouple" the purchase from the payment, by separating the two and delaying the payment to a later point in time. Second, they make individual costs less salient; a \$50 purchase on a \$1000 bill has less impact than a \$50 purchase by itself. This has its basis in *loss aversion* – that is, in our mind, losses are

more salient than gains, and we usually seek ways to make them less noticeable, which is why credit cards are useful.

Mental accounting is just the tip of the iceberg; there are several other forces shaping our financial decisions. One key game-changer in the psychology of money is the mode of payment. In this article, we will explore two common forms of payments – cash and credit cards. We will also look at how concepts like opportunity cost, pain of paying, and others, factor into our decisions under the two contexts.

Spending with Cash vs Credit Card

Researchers at MIT (Prelec & Simester, 2001) studied willingness to pay (WTP) when using both credit cards and cash. They set up an auction for tickets to sporting events, and restricted the form of payment to either cash or card for each participant. Interestingly, participants using credit cards were prepared to pay almost twice more than those who were paying cash were willing to. That is, their WTP was almost double. These results have been corroborated in a number of studies (Raghubir & Srivastava, 2008; Finkelstein, 2009); put simply, we are ready to spend more when using credit cards. This spending behavior can be explained by the *pain of paying* – the moral tax (emotional distress) we experience when money is spent. Using a combination of brain imaging techniques, priming, and placebos in a series of experiments, Nina Mazar and colleagues (2016) found that pain of paying is not merely a metaphorical concept, but individuals truly experience psychological pain when making monetary purchases. They found evidence that anticipating paying with money (making the decision to purchase) did indeed activate pain processing regions in the brain, albeit those were associated with higher-order, affective pain, and not somatosensory (i.e., physical) pain. When participants were primed for affective pain, their WTP decreased, further confirming the affective nature of pain of paying.

Credit cards encourage spending because they reduce the pain of paying (this is linked to loss aversion). When we hand over a ten dollar bill at a store, we *see* the money going away.

Such transparency of payment is absent in credit cards. For one, we do not observe the money disappearing. Moreover, credit cards are always returned to the owner, further reinforcing the notion that we are not losing money. When researchers (Shah, Eisenkraft, Bettman, & Chartrand, 2015) attenuated the pain of paying, they observed a decrease in loss aversion, and increase in risky financial decisions. By making money less tangible, cards reduce the pain of paying, thus encouraging spending.

The potential future opportunities we forgo (the cost) when we expend a resource (money or time) is known as *opportunity cost*. We don't always consider opportunity costs when it is crucial to do so (like when we are saving to buy a car, but spend money on an expensive handbag instead), but sooner or later, these alternate realities become apparent. Cash transactions prompt us to contemplate the consequences of financial decisions. When you only have \$10 in your wallet, the decision to make one purchase would significantly affect the ability to make another purchase, making the opportunity cost of your purchase more salient. Credit cards don't make opportunity costs prominent, hence increasing the tendency to spend without sufficiently weighing the upshots.

Psychological Factors of Spending

Although at a glance, cash may appear to be the best form of payment for responsible spending, there are other psychological factors that must be considered.

Previous research has established that we tend to overvalue our own possessions – a bias called the endowment effect. It appears that the mode of payment when purchasing can influence how much we value an item. In a study examining how “connected” we are to items bought using different modes of payment, participants, after purchasing a discounted coffee mug, were asked to quote a price to sell it back (Shah, Eisenkraft, Bettman, & Chartrand, 2015). Those who had paid with cash demanded almost \$3 more than those who used credit, suggesting that we place more value (endowment effect), and are more connected, to purchases made with cash.

In a study yielding somewhat surprising results (Bagchi & Block, 2011), researchers studied whether pain of paying had any effect on impulse buying for immediate consumption. They manipulated payment mechanisms, difficulty of earning money, and level of “indulgence” (calories) in food items in a series of experiments. When the pain of payment was higher (i.e., when they used cash), participants indulged more, suggesting an attempt to offset the imputed cost of paying with cash.

Such studies provide insights into the complexities behind financial decision-making, beyond simple behavioral economic principles.

Decision Making

Behavioral research has worked to uncover the different ways in which we think about money. This knowledge can be used to ‘hack’ our behaviors to bring about financial and mental well-being.

Mental Accounting:

The World Bank ran a study in Kenya to increase savings for health expenses, in which they provided residents with lockable metal boxes, a key, and a passbook to record saving goals and deposits. They found that, besides goal setting and increased security, the act of *labeling* the money for a specific use inhibited using the money towards any other purpose – coined the labeling effect. By exploiting mental accounting, where money belonging to different categories are perceived differently, the researchers succeeded in increasing savings. Similarly, partitioning money for different, specific purposes can motivate saving behavior.

Pain of Payment:

Pain of payment varies with mode and time of payment. By manipulating these factors, depending upon the context, we can maximize financial well-being and satisfaction. In a

survey estimating enjoyment of visiting a health club when comparing a monthly fixed fee to hourly payments, respondents judged that the monthly fixed fee would lead to higher enjoyment (Prelec, 2009). Pre-payment for a continued experience can reduce repeated reminders of the cost, which isn't the case in a pay-as-you-go system. Payment by credit card would further reduce the pain of paying in this scenario. For general spending with credit cards, setting up text notifications with information on amount spent and remaining balance can make the pain of paying and opportunity cost more salient, thus facilitating better financial decisions.

Friction Costs:

Simply put, friction costs are the effects of barriers to decision making. For example, although we want to save money, once the cash is in hand, it is difficult to calculate opportunity costs (financial trade-offs, i.e., choosing between a coffee at Starbucks, vs. one at Dunkin' Donuts, or a homemade one), thus posing a difficult barrier to saving, as the temptation to spend is greater than the mental energy required to save. Friction costs can be reduced by setting up automatic savings *before* receiving the money (pre-commitment). This can almost double savings (Beasley, De La Rosa, & Berman, 2017), because you've never seen the money in the first place, hence reducing temptation, and the loss aversion associated with having to allocate this newly-received cash to a distant outcome (i.e., money saved in the future). On the other hand, escalating friction costs can also increase account deposits. During a study with Latino Community Credit Union members (Beasley et al., 2017), those seeking to cash their paychecks were required to fill out a check cashing slip, which included a suggestion about depositing some amount of the check into an account (introducing friction into the process). This small message resulted in an average deposit of \$167, which has far-reaching implications for long term account deposits.

Fahima Mohideen

Fahima is a graduate student in Applied Psychology at Pondicherry University, India. Her research interests span the areas of group dynamics, moral decision making, and behavioral economics.

References

Ariely, D. (2009, August 5). The trouble with cold hard cash [Blog Post]. Retrieved from <https://danariely.com/2009/08/05/the-trouble-with-cold-hard-cash/>

Bagchi, R., & Block, L. (2011). Chocolate cake please!: Why do we indulge more when it feels more expensive? *Journal of Public Policy & Marketing*, 30(2), 294-306.

Beasley, M., De La Rosa, W., & Berman, K. (2017). Choosing nurture, not nature, to improve financial decision-making in America. *Stanford Social Innovation Review*. Retrieved from https://ssir.org/articles/entry/choosing_nurture_not_nature_to_improve_financial_decision_making_in_america

Finkelstein, A. (2009). E-ztax: Tax salience and tax rates*. *Quarterly Journal of Economics*, 124(3), 969-1010.

Mazar, N., Plassmann, H., Robitaille, N., & Lindner, A. (2016). Pain of paying? — A metaphor gone literal: evidence from neural and behavioral science (Rotman School of Management Working Paper No. 2901808; INSEAD Working Paper No. 2017/06/MKT). Retrieved from the Social Science Research Network website: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2901808

Prelec, D., & Simester, D. (2001). Always leave home without it: A further investigation of the credit-card effect on willingness to pay. *Marketing Letters*, 12(1), 5-12.

Prelec, D. (2009). Consumer behavior and the future of consumer payments. In R. E. Litan & M. N. Baily (Eds.), *Moving Money: The Future of Consumer Payment* (pp. 91-115). Washington, D.C.: Brookings Institution Press.

Raghubir, P., & Srivastava, J. (2008). Monopoly money: The effect of payment coupling and form on spending behavior. *Journal of Experimental Psychology: Applied*, 14(3).

Shah, A., Bettman, J., & Payne. J. (2014). Psychological tangibility of money influences loss aversion and propensity for gambling, in *NA – Advances in Consumer Research Volume 42*, eds. June Cotte and Stacy Wood, Duluth, MN: Association for Consumer Research, Pages: 184-188.

Shah, A., Eisenkraft, N., Bettman, J. R., & Chartrand, T. L. (2015). “Paper or plastic?”: How we pay influences post-transaction connection. *Journal of Consumer Research*, 42(5), 688-708.

World Bank Group. (2015). *World Development Report 2015: Mind, Society, and Behavior*. Retrieved from <https://openknowledge.worldbank.org/handle/10986/20597>