



# ASSOCIATION FOR CONSUMER RESEARCH

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## **The Effect of Stress on Consumer Saving and Spending**

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Little is known about how stress influences consumer behavior. Seven studies show that stress leads consumers to allocate resources strategically. Stressed consumers show increased saving behavior, but increased spending on products the consumer perceives as necessities. These behaviors occur as a means to gain control in an otherwise uncontrollable environment.

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# No Pain, No Gain: How Pain and Constraint Influence Consumer Financial Decision-Making

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## Paper #1: Is Cash Almighty? Effects of Hard vs. Soft Money on Saving/Investment Behavior

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## Paper #2: Keep Your Money Close: Psychological Distance Influences the Perceived Value of Money

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## Paper #3: Regaining Control by Ditching the Plastic: Why Abundance Increases Consumers' Aversion to Credit Cards under Conditions of Low Control

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## Paper #4: The Effect of Stress on Consumer Saving and Spending

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### SESSION OVERVIEW

Consumer welfare is strongly affected by savings and spending decisions. Consumers must make choices of how much to save for tomorrow, where to invest, and how to spend responsibly. The goal of this session is to investigate some of the external and internal factors driving these important decisions. We address: 1) How and why do external factors, such as the payment medium used and the pain of payment, impact savings and spending decisions? and, 2) Whether internal factors, such as feelings of low control and stress, can impact spending habits?

One of the most interesting aspects in the psychology of money literature is how payment mechanism affects consumer-spending patterns. Prior research has touted cash as more painful, leading to consumers to curb or avoid their spending altogether. However there are times when parting with money is necessary to save for the future. **Duclos and Khamitov** find that using cash may sometimes backfire in comparison to a less painful method of payment. In three experiments, they suggest that using painful forms of money can lead consumers to save less and/or forego future savings. **Shah, Maglio, and Wilson** dig deeper at why this cash backfiring effect may occur: consumers may be driven by a concrete bias. Cash is a psychologically closer and more concrete form, leading consumers to think of more concrete uses (versus card). This curbs spending both when it is financially prudent (a gamble with negative expected value) and financially irrational (a gamble with positive expected value).

Next we focus on how internal factors, such as perceived loss of control or stress affect subsequent savings decisions and spending habits? **Brannon and Samper** argue that when personal control is threatened, one way consumers may attempt to restore control was through the payment form that they chose to pay with. Across three experiments, they find that individuals who feel a low sense of control prefer making a purchase with a more effortful and tangible form of payment, such as cash, perceiving the payment experience as more empowering than if they used a card. In addition to payment preferences, **Durante and Laran** look at how subsequent saving and

spending is affected by low control. They find that consumers under stress strategically use money and make financial decisions in two key ways: consumers will save money because doing so guarantees that these resources will be available when needed; and consumers will spend money on necessities (vs. nonnecessities), which provides a sense of control.

Taken together, these four papers advance our understanding of how external and internal factors can influence consumer spending. Using a diverse set of methodologies these papers have incredible implications for policy and societal well-being, as well as basic scientific understandings of the psychology of money and financial decision-making. This session will appeal to researchers interested in the consumer welfare, judgment and decision-making, financial management, as well as those interested in policy or managerial decision-making. Thus, we expect that a diverse set of scientists, policymakers, and scholars will find value in the session.

## Is Cash Almighty? Effects of Hard vs. Soft Money on Saving/Investment Behavior

### EXTENDED ABSTRACT

Research on spending behavior suggests that paying in cash is more painful psychologically than paying via dematerialized money (e.g., credit cards). This holds true even after holding expenses constant (Prelec and Loewenstein 1998; Prelec and Simester 2001; Raghurir and Srivastava 2008; Soman 2003; Thomas, Desai, and Seenivasan 2011). A derivative of these important findings is the now-popular “cash diet”. To help curb spending, reduce debt, and improve saving rates, TV shows, newspapers, and blogs recommend consumers to operate on a cash basis. Indeed, since cash creates psychological barriers to spending (compared to softer, dematerialized forms of money), using cash makes consumers better savers and budgeters.

We readily agree that paying in cash is effective at curbing expenses. But focusing on saving/investment behavior (rather than *spending* behavior), we show cash may not be almighty. Indeed, extending the “pain of paying” paradigm to saving/investment situations, we find hard money (i.e., cash) may sometimes backfire (compared to soft/dematerialized money) and cause consumers to save less and/or forego lucrative investment opportunities they should seize.

To test our theorizing, experiment 1 recruited participants for a 10-minute study in exchange of \$5. Subjects were randomly assigned to one of two conditions (cash vs. card). Participants in the cash condition completed a filler task before receiving their pay, a \$5 bill. Counterparts in the card condition completed the same filler task before being offered a \$5-credit on their student card (student cards function like debit cards; they can be used to pay at any establishment on and around campus).

Just before processing their payment, however, we offered participants the following deal: (1) collecting their \$5 right away, or (2) collecting \$7 in a week. In essence, we turned our lab into a financial institution. Leaving money with us for a week guaranteed an incremental gain of \$2 (annualized, the rate of return of the \$7 option exceeds 2000%), thereby allowing us to assess participants' saving/investment behavior. As expected, participants in the cash condition

(49%) were less likely than counterparts in the card condition (78%;  $p < .03$ ) to leave their money in the lab's vault for a week.

Experiment 2 sought to extend these findings by examining which consumers are more/less likely to follow this behavioral pattern. To this end, we considered subjects' *prevention* orientation. "Prevention focus" is defined as a mindset or personality dimension that relates to goal pursuit (Higgins 1997; Kruglanski, Pierro, and Higgins 2007; Lee and Aaker 2004). A prevention focus heightens concerns for safety, responsibility, and security. People with a chronic disposition toward prevention approach life with the goal of avoiding losses/negative events (this contrasts from a *promotion* focus whereby people approach life having in mind the pursuit of hopes, accomplishments, and general advancement).

While prevention orientation may be measured as an individual difference, we opted to manipulate it experimentally. Accordingly, experiment 2 followed a 2 (Money format: cash vs. dematerialized) by 2 (Prevention focus: baseline vs. high) between-subjects design. The procedure resembled study 1's with the addition of a writing task to manipulate prevention focus. The DV remained unchanged; participants chose between collecting \$5 right away or \$7 a week later.

Mirroring the results of study 1, a main effect of money format emerged. On average, participants compensated with cash saved/invested less than counterparts paid with dematerialized money. Importantly, this main effect was moderated by our prevention-focus manipulation (interaction term:  $p = .031$ ). In the control condition (i.e., when subjects' prevention focus was at baseline), being compensated in cash (dematerialized money) led participants to save/invest less (more;  $p = .001$ ). In contrast, when prevention focus was heightened, participants exhibited similar saving/investment behavior whether they were paid with cash or dematerialized money (NS). No main effect of prevention focus emerged.

Experiment 3 aimed to test the process underlying our findings. To this end, we adopted study 2's design and procedure but added a series of measures related to the "pain of parting from money". Once again, money format produced a main effect. On average, participants compensated with cash saved/invested less than counterparts paid with dematerialized money. As expected, however, this main effect was moderated by our prevention-focus manipulation (interaction term:  $p = .047$ ). At baseline levels of prevention focus, being compensated with cash (dematerialized money) led participants to save/invest less (more;  $p = .003$ ). In contrast, when prevention focus was high, participants' decision to save/invest remained equivalent regardless of money's form (NS). As in study 2, prevention focus had no main effect. Moderated-mediation analyses (Model 7 of the PROCESS macro; Hayes 2013) supported our theorizing. Parting from cash was more painful psychologically than parting from dematerialized money, which in turn caused subjects to save less/forego lucrative investment opportunities.

*Theoretical & societal contributions:* Theoretically, our findings contribute to the literature in at least two ways. First, unlike prior research, our mechanism based on the "pain of parting from money" (rather than "pain of paying" per se) is able to explain not only (i) why cash helps consumers in spending situations, but also (ii) why it paradoxically hurts them in saving/investment decisions. Second, by documenting the interactive effects of money-format and prevention-focus on saving/investment behavior, our results shed light on a personality dimension with great potential to foster/hinder consumers' financial welfare.

From a societal standpoint, understanding the factors that increase/decrease consumer savings is of great interest to government agencies, policymakers, financial-services firms, and consumers themselves. Our findings could thus offer significant insights for

retirement planning, a major issue across the world today. Indeed, with life expectancy ever increasing, citizens will undergo a fierce decrease in quality of life if/when they outlive their savings. This is particularly true for lower-income households who are, in fact, more likely to be paid in cash throughout their working lives (e.g. construction workers, service staff in hotels/restaurants).

### **Keep Your Money Close: Psychological Distance Influences the Perceived Value of Money**

#### **EXTENDED ABSTRACT**

Judgments related to money have become as varied as they are ubiquitous. The modern economy presents innumerable options for the storage and exchange of money, and payment options now include cash as well as checks, credit/debit cards, check cards, and gift certificates. Moreover, money is no longer confined to a wallet or a cookie jar. Especially with the advent of the Internet, money can be stored at different locations (local bank branches or offshore holdings) and for different purposes (e-banking accounts, stock portfolios, PayPal). Ultimately, now more than ever, people face the issue of having multiple forms of money stored in a number of different locations. Rational decision models would predict invariance in the appraisal of each store of money, but mounting evidence suggests that this standard is often violated.

For example, recent research has demonstrated systemic psychological and behavioral biases in the way individuals evaluate the value of money based on the payment form (e.g., Raghurir and Srivastava 2008; Soman 2001). Paying with debit card (vs. cash) increases the propensity to evaluate products more favorably and to buy more unhealthy products (e.g., Chatterjee and Rose 2011; Thomas, Desai, and Seenivasan 2011). Research has argued that these differences are due to the amount of pain individuals feel when parting with money. However, could a concrete bias be at play? Could the psychological closeness of money lead to differences in perceived value and purchasing power, subsequently creating differences in spending?

Appraisal and fluctuations in monetary construal begin with the valuation of currency. Perceived valuation – or purchasing power – of a given unit of currency should be insensitive to contextual variations and, as such, evince dynamic consistency. However, a large body of research on this topic has uncovered the tendency of individuals to use heuristics to simplify valuation judgments (Tversky and Kahneman 1974). Building off of construal level theory, we argue that as a target becomes removed from a person's immediate experience, its concrete features become less salient and therefore comes to be represented more abstractly. This abstraction can influence the perceived uses of money—as money becomes more abstract, its perceived fungibility decreases as does its perceived purchasing power. We argue that this is effectively a concrete bias—more psychologically closer representations of money increase its perceived value. Across four studies, we manipulate the psychological closeness of money and investigate its impact on consumer spending behavior.

In Study 1, we develop preliminary evidence for this effect. We inform participants (N=200) that they spend \$20 on a pair of headphones, manipulating whether the payment was made via cash or by card. We then ask what else they could have purchased with the money as a measure of perceived fungibility. Participants listed significantly more items with cash than with card, suggesting that individuals believe that more concrete representations of money are more fungible.

According to CLT, concreteness can also be manipulated by physical distance. Thus, in Study 2 we investigated a boundary condition to test our theory. Participants located in New York City were

randomly assigned to condition in a 2 (cash or certificate) x 2 (NYC or LA) factorial design. Participants were asked to imagine that they had transferred all of their assets to an online bank, which stored their assets at the company's central bank either in NYC or Los Angeles, with the latter representing a physically more distant location. Participants were then presented with a list of 8 items, ranging from inexpensive to rather expensive. They were asked to indicate, in dollars and cents, how much of their assets they would be willing to spend on each of the items. Participants were willing to spend marginally less ( $p = .10$ ) using funds stored as cash than they were to spend using cash-equivalent certificates. They were also willing to spend significantly less using funds stored in a near bank than in a far bank. These effects were qualified by a significant interaction between form of currency and location. Participants spent more freely from funds stored in an abstract (non-cash) form and when drawing from geographically far bank accounts.

Study 3 and 4 employed the use of field experiments to determine whether this concrete bias could impact financial decision-making and risk-taking behavior. In Study 3 we gave participants a chance to play as many gambles as they desired out of a set of gambles, using their own money. We varied the form of payment they gambled with (cash or 'plastic' student card). For each of the gambles, we also manipulated the buy-in amount in order to play the gamble (\$0.50 or \$1), the probability of winning (10%-90%), and the amount earned if the participant won such that the expected value of all gambles was equal to -\$0.50, meaning it was more financially prudent not to play. In Study 4, we used the same method except now the expected value of all gambles was equal to +\$0.50, meaning it was more financially savvy to play. In Study 3, we found that a more concrete form of money decreased the likelihood of gambling and decreased the number of gambles played. However, when the expected value was positive, people playing with cash were still less likely to gamble, despite it being more financially responsible. Thus, consistent with our hypothesis, individuals exhibited a concrete bias, subsequently affecting financial decision-making and potential earnings.

The present investigation provides support for the hypothesized comparability of abstract form and psychological distance in judgments involving mental construal of money. Psychologically closer representations of money, either through form or distance, lead individuals to perceive more fungibility and purchasing power of money. We also show evidence that this concrete bias can substantially influence spending decisions, regardless of whether spending money is financially prudent or not.

### **Regaining Control by Ditching the Plastic: Why Abundance Increases Consumers' Aversion to Credit Cards under Conditions of Low Control**

#### **EXTENDED ABSTRACT**

What drives upper and middle income consumers to end their love affair with plastic in times of trouble? A recent report released by the Federal Reserve revealed a fascinating consumer trend following the 2007 recession. The report showed that, between 2007 and 2009, consumers shed credit cards and decreased debt by 7.8%. Surprisingly, this trend was most pronounced among upper-middle income consumers. Among lower income consumers, the report found no changes in credit card usage. We ask how threats to consumers' control caused by such events influences the way they pay for products and services.

When personal control is threatened, consumers experience discomfort and seek to restore control (Cutright 2012; Kay et al. 2008). One way to restore control is through effortful tasks (Olivola and

Shafir 2013). Consistent with this notion, consumers avoid low effort products when they experience low control (Cutright and Samper 2014). In this research, we propose that perceptions of effort associated with the way that consumers pay for products and services also influence preferences under low control. Specifically, we propose that because credit cards are perceived as a painless, low effort way to make a purchase (Prelec and Loewenstein 1998), consumers will have a decreased preference to use them under conditions of low (vs. high) control. Further, we predict that this behavior will only occur among consumers with abundant (vs. scarce) financial resources, as consumers with scarce resources are more debt-averse (Callender and Jackson 2005) and less likely to view credit cards payments as painless or low effort. Finally, we predict that our results will be mediated by feelings of empowerment associated with the payment. Specifically, among consumers with abundant (vs. scarce) resources, low pain of payment associated with using a credit card should decrease feelings of empowerment associated with making a purchase under low control.

#### **Study 1**

We conducted a 2 (control: high vs. low, between) x 2 (payment method: cash vs. card, between) x (financial resources, continuous) experiment. We measured financial resources using a 5-item measure from Sharma and Alter (2012). Next, we manipulated control by asking people to write about a time when they felt they had high (vs. low) control over a situation (Kay et al. 2008). We then presented participants with a \$50 clothing item from the university bookstore and randomly assigned them to imagine that the vendor only accepted credit card (vs. cash). We next asked them if they would purchase the item (1=yes; 2=no). We found a significant 3-way interaction on purchase intentions ( $\chi^2=6.99, p=.01$ ). Among participants with abundant resources, those who imagined that the vendor accepted credit cards were significantly less likely to purchase the item under conditions of low (vs. high) control ( $\chi^2=5.51, p=.02$ ). However, low (vs. high) control did not affect intentions when the vendor accepted cash only ( $p=ns$ ). Among participants with scarce resources, there was no effect of low (vs. high) control on intentions when paying with credit card ( $p=ns$ ) or cash ( $p=ns$ ).

#### **Study 2**

We conducted a 2 (financial resources: scarce vs. abundant, between) x 2 (control: high vs. low, between) x 2 (payment method: cash vs. card, between) analysis on participants' satisfaction with a purchase. We manipulated financial resources by asking participants to describe 3-4 episodes where resources were abundant (vs. scarce) (Roux, Goldsmith, and Bonezzi 2015). We manipulated control by asking people to write about a time when they felt they had high (vs. low) control over a situation (Kay et al. 2008). We then randomly assigned participants to imagine that they were purchasing an identity-related product costing at least \$100 with either cash or credit card (Berger and Heath 2007). To measure purchase satisfaction, participants responded to an 8-item subscale of purchase emotions (Richins 1997), which measures feelings of joy, excitement, and contentment associated with making the purchase. We found a significant 3-way interaction ( $F(1,390)=3.88, p=.05$ ). Among participants with abundant resources, those who imagined paying with credit card reported marginally lower satisfaction under conditions of low (vs. high) control ( $t(390)=1.79, p=.07$ ). However, low (vs. high) control did not affect satisfaction when participants imagined paying in cash ( $p=ns$ ). Among participants with scarce resources, there was no effect of low (vs. high) control on purchase satisfaction in either the credit card ( $p=ns$ ) or cash ( $p=ns$ ) conditions.

### Study 3

We sought to replicate study 2 using another continuous measure of financial resources. We conducted a (financial resources, continuous)  $\times$  2 (control: high vs. low, between)  $\times$  2 (payment method: cash vs. card, between) analysis on participants' 1) purchase satisfaction 2) spending aversion. We measured financial resources by asking participants to indicate their weekly spending budget (1=\$0; 7=\$250+). We used the same control and payment method manipulations as in study 2. In addition to measuring purchase satisfaction, we also included a 3-item measure of spending aversion (Soster, Gershoff, and Bearden 2014). Next, participants responded to a 7-item scale indicating how empowered they would feel when making the purchase (Cutright and Samper 2014). We found a significant 3-way interaction on purchase satisfaction ( $F(1,188)=6.37$ ,  $p=.01$ ). Similar to study 1, among participants with abundant resources, those who imagined paying with credit card reported significantly lower satisfaction under conditions of low (vs. high) control ( $t(188)=4.73$ ,  $p<.001$ ). However, low (vs. high) control did not affect satisfaction when participants imagined paying in cash ( $p=ns$ ). Among participants with scarce resources, there was no effect of low (vs. high) control on satisfaction when paying with credit card ( $p=ns$ ) or cash ( $p=ns$ ). Empowerment mediated this effect (95% CI [.03 to .80]) and contrasts revealed a similar pattern as purchase satisfaction. We found a similar 3-way interaction and mediation by empowerment on our spending aversion measure ( $F(1,188)=5.49$ ,  $p=.02$ ).

We find that feelings of low (vs high) control decrease the desire to pay with a credit card among consumers with abundant (vs. scarce) financial resources. This effect is driven by the fact that, among consumers with abundant (vs. scarce) financial resources, low (vs high) control individuals perceived paying with credit card as less empowering.

### The Effect of Stress on Consumer Saving and Spending

#### EXTENDED ABSTRACT

Stress is ubiquitous, yet we know little about the impact of feeling stressed on consumer behavior. Some research suggests that stress decreases consumption (Torres and Nowson 2007). Other findings suggest that stress may also lead to impulsive spending (Burrighs and Rindfleisch 2002).

We propose that certain behaviors are negatively influenced by stress, whereas other behaviors are positively influenced. One characteristic of stress is that it leads people to perceive that they currently lack control over their environment (Cohen 1988). Thus, we predict that consumers may use their monetary resources strategically in order to restore control in situations of stress and do so in two ways: (1) consumers will save money because doing so guarantees that these resources will be available when needed; and (2) consumers will spend money on necessities (vs. nonnecessities), which provides a sense of control.

A pilot investigation asked participants to write about the things that stress them out in life right now, their typical day, or things that make them sad in life right now and were asked about saving money. Participants in the stress condition indicated that they wanted to save more money ( $ps < .05$ ).

Experiment 1 tested the effect of stress on saving, and the role played by control. Half of the participants went through a stressful situation (believing they were going to give a speech). Some participants, however, restored their sense of control after the stress manipulation by writing about something that happened to them because they had control over it. Participants were then asked to imagine that

they had \$300 and indicated how much they would save vs. spend on products. There was an interaction ( $p = .03$ ). Participants in the high stress condition saved more money ( $p = .01$ ). However, when control was restored, stress did not impact saving ( $F < 1$ ).

Experiment 2 sought to examine the influence of current stress (measured) on willingness to spend on necessities. Participants were asked: "Right now, how important do you feel it is to acquire necessities (i.e., things you need on a day-to-day basis)?" (7pt scale). They also completed an established measures of current stress (Lovibond and Lovibond 1995) and perceived control (Cutright et al. 2013). There was an interaction ( $p = .04$ ). Stressed participants indicated that acquiring necessities was marginally more important when they perceived they currently had low control than when they perceived they currently had high control ( $p = .09$ ). There was no difference at low levels of stress ( $p = .37$ ).

Experiment 3 allowed people to have control (vs. not) over the outcome of the stressful situation. The stress manipulation involved a speech. However, to manipulate low control, half were told they would get extra credit for the speech, but receiving the credit depended on the average performance of all participants. In the high control condition, participants were told that getting an extra credit would depend only on their performance. Participants then indicated how much out of \$250 they would save. There was an interaction ( $p = .03$ ). Under low control, participants in the high stress condition were willing to save more ( $p = .05$ ). Under high control, there was no difference ( $p > .26$ ). In the high stress condition, participants saved more in the low control condition ( $p < .01$ ).

Experiment 4 examined whether acquiring necessities is perceived as a way to restore control, and whether this drives the effect of stress on spending on necessities. The stress manipulation was identical to Experiment 3. Participants indicated how much (out of \$250) they were willing to spend on necessities and some participants did this for nonnecessities. We also measured the extent to which their spending behavior occurred as a means to restore control. There was an interaction ( $p < .01$ ). Participants in the high stress condition were willing to spend more on necessities ( $p = .04$ ) and less on nonnecessities ( $p = .04$ ). Under high stress, those asked about necessities were willing to spend more than those asked about nonnecessities ( $p < .01$ ). Spending as a means to restore control mediated the effect of stress in the necessities condition (CI: .32 to 12.52).

Experiment 5 sought to demonstrate that the nature of the stressor may shift perceptions of which products represent necessities. We predicted that stress related to starting a new job would lead to increased spending on nice clothing. The study involved people who were or were not starting a new job. Half of the participants wrote about stress related to their new job (vs. current job) and half wrote about a typical day at work. Participants reported how much out of \$300 they would spend on nicer, more expensive clothes and reported whether clothing is a necessity. There was an interaction ( $p < .01$ ). We replicated our previous results in the current job condition. In the new job condition, however, participants in the high stress condition indicated that they would spend more money on nicer, expensive clothes ( $p < .01$ ). For people starting a new job, perceptions that clothing is a necessity mediated the effect in the stress condition (CI: 2.16 to 15.57).

Experiment 6 tested whether a reversal of the effect of stress on saving would occur when people believe that attempts to restore control will fail. After writing about a stressor (vs. typical day), half of the participants read an article designed to diminish beliefs that one can restore control. Participants were then asked "Right now, how important do you think it is to save your money vs. spending it on products?" (9pt scale). There was an interaction ( $p < .01$ ). Par-

ticipants in the high stress condition indicated that saving money was marginally more important ( $p = .07$ ). But, when they were led to believe control couldn't be restored, participants in the high stress condition indicated that saving money was less important ( $p = .02$ ).

These findings demonstrate that stress can have a multi-faceted impact on consumer behavior. Stress can lead consumers to prefer to save, but spend strategically on necessities as a means to restore control.

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