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## **How the Pain of Payment Can Magnify and Mitigate Choice Overload Effects**

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Using field and lab experiments, we find that pain of payment can moderate choice overload effects. Reducing (increasing) the pain of payment—via payment mode or price—leads to increased (decreased) purchasing in larger choice sets, spending less (more) time on the decision, and higher (lower) satisfaction ratings post-purchase.

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# Pain of Paying: Antecedents and Consequences

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## Paper #1: Paying Less for What You Value More: How Pain of Paying Leads to Preference Inconsistencies

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## Paper #2: The Perception, not the Payment: How Cognitive Appraisal Influences Pain of Paying

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## Paper #3: More of the Same: Higher Pain of Payment Decreases Variety Seeking

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## Paper #4: How the Pain of Payment Can Magnify and Mitigate Choice Overload Effects

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### SESSION OVERVIEW

From a standard economic perspective, one should make a purchase if the benefit a good provides exceeds its cost. However, past literature has documented that pain of paying, or the negative affective response to parting with one's money, may interfere with this utility maximization. (Knutson et al. 2007; Prelec and Loewenstein 1998). To date, research in this area has primarily explored how the payment mechanism influences pain of paying. For example, people experience more pain paying with cash versus credit card (Raghubir and Srivastava 2008, Shah et al. 2015; Prelec and Simester 2001), after versus before consumption (Prelec and Loewenstein 1998), or per use versus as a lump sum (Soman and Gourville 2001). However, this session proposes that drivers of pain of paying are much richer than the payment mechanism. Further, pain of paying can have surprising and important effects on consumer preferences.

The current session seeks to address two fundamental questions: what factors, beyond payment mechanism, contribute to the pain of paying? What are potential downstream consequences on consumer choice? Using a broad range of methodologies including qualitative analysis and experimental design conducted in the lab, field, and online, these four papers cohesively explore the nuanced drivers of pain of paying, and their resulting effects on choice and consumer behavior.

The first two papers explore key drivers of pain of paying. In paper 1, Pomerance examines the impact of control on pain of paying. Interestingly, he finds that this sense of control is fundamental for decreasing pain of paying, even for irresponsible decisions. In paper 2, Friedman, Hauser and Dhar propose that goods may vary in how painful they are to purchase, independent of payment mechanism, and identify goods that are high in pain of paying.

We next explore the downstream consequences on preferences. Friedman et al. find that pain of paying can lead to preference inconsistencies, in which consumers are not willing to pay as much for high pain of paying goods that they otherwise like and value more. In paper 3, Huang, Siddiqui and Ghosh examine how pain of paying affects variety seeking. They demonstrate that higher pain of paying

increases consumer's need to justify their choices, leading them to seek less variety in favor of choosing their preferred options. Finally, in paper 4, Shah, Bettman and Payne explore how pain of paying can moderate choice overload effects. The authors show that when the pain of payment is reduced, consumers do not significantly decrease buying as the choice set increases, spend less time making a decision, and report higher satisfaction ratings.

Taken together, this session cohesively bridges research in consumer behavior, financial decision-making, and public policy to identify the underpinnings of pain of paying and how it affects consumer choice.

## Paying Less for What You Value More: How Pain of Paying Leads to Preference Inconsistencies

### EXTENDED ABSTRACT

Imagine waking up in a hotel room on a hot night feeling extremely thirsty. Although the minibar offers a cold bottle of water for \$5, many people would not be willing to purchase it, even though the value of quenching their thirst in that moment may far outweigh the monetary cost. Furthermore, those same people may have readily spent \$10 for a mediocre glass of wine that evening. While traditional economics suggests that consumers should purchase an item whose consumption utility exceeds its cost, people are often unwilling to pay for goods commensurate with value. In the scenario above, many people would prefer the water to the wine if both options were offered for free, but may be less likely to purchase the water due to the greater pain of paying for water than wine.

We empirically demonstrate that goods vary in their pain of paying, or the degree to which parting with money for the item causes a negative affective response. In contrast to prior research on the pain of paying, which has mainly focused on how the mode (e.g., cash versus credit card; Raghubir and Srivastava 2008, Shah et al. 2015; Prelec and Simester 2001), coupling (e.g., pay-per-use versus one-time cost; Soman and Gourville 2001), or timing of payment (e.g., before versus after consumption; Prelec and Loewenstein 1998) influence pain of paying, we explore how certain properties of the goods themselves and their typical purchase context can also affect pain of paying. We identify goods that people find particularly painful to purchase and explore the downstream consequences that this variation in pain of paying across goods may have on preferences: specifically, consumers may pay less for goods that offer more consumption utility.

We test our hypothesis by measuring preferences among pairs of goods that differ in their pain of paying (PoP). In study 1a, participants read that they checked into a hotel. Half chose whether they would prefer to have WiFi (high PoP) or breakfast (low PoP) included for free. Half indicated their WTP for each good, and we inferred preference based on the higher price listed. We consistently find that the high PoP good is relatively more preferred in free-choice than WTP ( $P_{\text{WiFi-FREE-CHOICE}}=64\%$  vs.  $P_{\text{WiFi-WTP}}=31\%$ ,  $p<.001$ ).

We test this across a variety of goods, casting doubt on alternative explanations for the results. For instance, the pattern holds when market prices are specified (e.g., both the WiFi and breakfast typically cost \$9.95;  $P_{\text{WiFi-FREE-CHOICE}}=67\%$  vs.  $P_{\text{WiFi-WTP}}=24\%$ ,  $p<.001$ ), when the high PoP good is not typically offered for free (e.g., tank of gas vs. lunch for two,  $P_{\text{GAS-FREE-CHOICE}}=64\%$  vs.  $P_{\text{GAS-WTP}}=43\%$ ,  $p=.004$ ), and

when the high PoP good is utilitarian rather than hedonic (O'Donnell and Evers 2018; e.g., parking vs. dessert at a restaurant,  $P_{\text{PARKING-FREE-CHOICE}}=79\%$  vs.  $P_{\text{PARKING-WTP}}=59\%$ ,  $p=.003$ ).

We test this across a variety of goods, casting doubt on alternative explanations. The pattern holds when market prices are specified, making a pure transaction-utility account unlikely (e.g., both goods typically cost \$14.95;  $P_{\text{WIFI-FREE-CHOICE}}=67\%$  vs.  $P_{\text{WIFI-WTP}}=24\%$ ,  $p<.001$ ), as well as when the high PoP good is not typically free (e.g., printer ink vs. fragrance,  $P_{\text{INK-FREE-CHOICE}}=78\%$  vs.  $P_{\text{INK-WTP}}=46\%$ ,  $p<.001$ ), and when the high PoP good is utilitarian (O'Donnell and Evers 2018; e.g., parking vs. dessert,  $P_{\text{PARKING-FREE-CHOICE}}=79\%$  vs.  $P_{\text{PARKING-WTP}}=59\%$ ,  $p=.003$ ).

The subsequent studies compare choice when goods are free to when they both cost the same price, making explanations based on task mode unlikely. For instance, participants were less likely to buy gas over lunch when both cost \$23.99 than when both were offered for free ( $P_{\text{GAS-FREE}}=66\%$  vs.  $P_{\text{GAS-MONEY}}=51\%$ ,  $p=.030$ ). Study 3 extends this result to a consequential choice. Participants in the lab had a 10-minute waiting period during which they could use their phone or get a snack. Attaching a price of \$1 to the decision decreased the proportion of participants choosing to use their phone ( $P_{\text{PHONE-FREE-CHOICE}}=55\%$  vs.  $P_{\text{PHONE-PAID-CHOICE}}=44\%$ ,  $p=.036$ ).

Studies 4 and 5 explore the underlying process and moderators to this effect. If the difference in pain of paying across goods underlies the observed preference inconsistencies, reducing this difference should attenuate the inconsistency. Participants in study 4 chose between hotel WiFi and hotel breakfast. We varied whether they paid with their own money, with loyalty points (to reduce PoP) or for free. Paying with loyalty points increased choice of the hotel WiFi compared with paying with money ( $P_{\text{WIFI-POINTS}}=66\%$  vs.  $P_{\text{WIFI-MONEY}}=33\%$ ,  $p<.001$ ), bringing choice to the same level as free choice ( $P_{\text{WIFI-FREE}}=55\%$ ,  $p>.1$ ). In support of our process, the difference in PoP between the WiFi and the breakfast when paying with money versus points mediated the effect on choice (95% CI [.41, 1.54]). In further support of this process, study 5 shows that preferences are inconsistent when goods differ in their pain of paying (e.g., a guacamole appetizer vs. parking;  $P_{\text{GUACAMOLE-MONEY}}=66\%$  vs.  $P_{\text{GUACAMOLE-FREE}}=41\%$ ,  $p<.001$ ) but are consistent when the goods are similar in their pain of paying (e.g., two appetizers – guacamole vs. spinach-artichoke dip;  $P_{\text{GUACAMOLE-MONEY}}=50\%$  vs.  $P_{\text{GUACAMOLE-FREE}}=52\%$ ,  $ns$ ; interaction:  $p<.001$ ).

Taken together, we show that goods themselves vary in their pain of paying, and that this variation can lead consumers to pay less for goods that they otherwise prefer. Reducing the pain of paying, such as by paying with loyalty points, counteracts this preference inconsistency.

## The Perception, not the Payment: How Cognitive Appraisal Influences Pain of Paying

### EXTENDED ABSTRACT

After making a payment, consumers often (but do not always) attempt to reduce their subsequent spending. What determines the effect of spending on subsequent spending? Better understanding financial self-regulation (the process by which consumers adjust their financial decision making based on changes to their finances) is critical, as “either a sizeable minority or a slim majority of Americans are on thin ice financially” (Gabler 2016).

Emotions play a critical role in self-regulation generally, and they are well researched within financial decision making in the form of the pain of paying. While past work on pain of paying focuses on everything from payment-level factors that exacerbate the pain of

paying (e.g. Raghurir and Srivastava 2008) to its downstream consequences (Shah et al. 2016), existing research has yet to ask how research on emotion might inform consumers' experience of the pain of paying. Perceptions of control are a major influence on emotion (Weiner 1980), yet the relationship between control and emotion is complicated (Thompson 1981). In this work we define control as “an individual's belief that he or she can personally predict, affect, and steer events in the present and future” (Kay et al. 2009). We predict that perceived control decreases pain of paying because control over one's finances decreases stress (Netemeyer et al. 2017), and because people may be motivated to perceive controlled payments as less painful in order to maintain positive views of themselves as consumers. In study 1, we examine the proposed relationship absent overt manipulations of control. We ask online participants ( $n = 100$ ) to look through their email receipts and/or their online bank statements to identify recent purchases. Participants listed four specific purchases, and answered questions about each purchase (perception of control over the purchase, the typicality/ predictability of the purchase, how expensive the purchase felt, the price, and the pain of paying). We find a negative relationship between perceived control and pain of paying ( $\beta = -.31$ ,  $t(382.43) = 4.83$ ,  $p < .001$ ). We note this result holds when controlling for the purchase's unpredictability, price, and subjective expensiveness (all  $ps < .002$ ). Additionally participants felt that the majority of purchases (81%) were under their control. Given that perceptions of control might undermine the pain of paying, the possibility that people perceive most purchases as under their control suggests one reason that consumers have trouble with financial self-regulation.

Study 2 tests whether the negative effect of perceived control on pain of paying persists across typical and atypical purchases. Existing research argues that “novelty detection... can be considered as a gateway to the emotion system” (Ellsworth and Scherer 2003). This suggests that highly typical payments may be less painful, and that the effect of control may be moderated by typicality, as consumers simply attend less to more typical stimuli, diminishing any perception-based effects. Participants ( $n = 200$ ) imagined going out for dinner and a show with friends in one of four conditions (control: high/low; typicality: high/low). High control participants imagined deciding on what to order themselves, as opposed to ordering as a group. Typicality was manipulated by the items ordered and the supposed regularity with which people went out for dinner with friends (Sussman and Alter 2012) with many of the largest expenses (e.g., electronics, celebrations). We find a negative main effect of control ( $\beta = -.48$ ,  $t(262.63) = 3.68$ ,  $p < .001$ ), but no main effect of typicality ( $\beta = -.03$ ,  $t(284.46) = .23$ ,  $p = .82$ ). Further, we find a significant interaction ( $\beta = .59$ ,  $t(304.88) = 2.08$ ,  $p = .038$ ) such that control decreases pain among atypical stimuli ( $\beta = .18$ ,  $t(290.34) = .95$ ,  $p = .343$ ), but has no effect on pain among typical stimuli ( $\beta = .78$ ,  $t(280.39) = 4.04$ ,  $p < .001$ ).

Given the complex relationship between perceived control and emotion, in study 3 we ask whether control might increase pain of paying under certain circumstances. Specifically, we investigate whether control might force people to internalize blame after making an irresponsible purchase, thereby increasing pain. Three studies (total  $n = 999$ ) adapt the paradigm in study 2, and test for an interaction between perceptions of control and whether the purchase is relatively responsible (allowing consumers to “take the credit,” decreasing pain) or relatively irresponsible (forcing consumers to “take the

1 Fractional degrees of freedom come from Satterthwaite estimates in linear mixed effects models (Kuznetsova, Brockhoff, and Christensen 2017).

blame,” increasing pain). All three studies utilize a 2 (control: high/low) by 2 (responsibility: high/low) factorial design using vignettes in which participants imagine going out for a night with friends. We collapse the three studies into an internal meta-analysis here for brevity and power. Combining the data, we predict pain of paying from control (high versus low), responsibility of the purchase (high versus low), their interaction, a random intercept for each study, and a random intercept by participant (one study involved two within-subject sub-scenarios). While we again find that control decreases pain of paying ( $\beta = -.21$ ,  $t(964.14) = 2.17$ ,  $p = .030$ ), we notably do *not* find that the effect of control depends upon whether people view the spending scenario as responsible or irresponsible ( $\beta = -.11$ ,  $t(943.04) = .59$ ,  $p = .56$ ).

In this research, we ask how perceptions of control over a purchase influence pain of paying. It is well known that control influences emotion, and that the relationship between control and emotion is multifaceted and complex. We find that perceived control decreases pain of paying, even in scenarios where it might be expected to do the opposite. Future work will ask whether perceiving control allows purchases to “fly under the radar,” preventing people from adjusting their spending due to its negative effects on the pain of paying.

### More of the Same: Higher Pain of Payment Decreases Variety Seeking

#### EXTENDED ABSTRACT

Retailers offer an increasing number of payment methods to consumers to complete their purchases. The use of different payment methods influences consumers’ experienced pain of payment, the psychological discomfort of parting with money (Prelec and Loewenstein 1998). Past work shows that pain of payment can affect the quantity (Monger and Feinberg 1997; Raghurir and Srivastava 2008) and type of products purchased (Soman 2003; Thomas et al. 2011). We extend this line of work by demonstrating how pain of payment affects consumer choices when they buy multiple items within a product category, while keeping the total number of products purchased and amount spent constant.

We argue that using a more painful payment method increases consumers’ need to justify their choices and affects the amount of variety chosen. Supporting this view, prior work demonstrates that consumers who experience higher pain of payment are more likely to purchase from product categories that are easier to justify, such as essential products (Soman 2003), and avoid product categories that are harder to justify, such as vice products (Thomas et al. 2011). We argue that, in the context of choosing multiple items within one product category, one’s favorite items are easier to justify than one’s less-preferred items, as consuming less-preferred items increases post-purchase regret (Ariely and Levav 2000; Ratner, Kahn, and Kahneman 1999). Consequently, we propose that, when consumers experience high (vs. low) pain of payment, they are more likely to choose their favorite items and avoid less-preferred ones, thereby demonstrating lower variety seeking.

We find support for our argument in five studies. In a pilot study ( $N = 180$ ) we first demonstrate that favorites are easier to justify in a multiple choice context, where consumers often over-predict satiation from repeating favorites (Galak et al. 2011). Participants imagined purchasing five tubs of ice cream using either cash or loyalty points. They saw five different flavors and were told that they can either choose five tubs of their favorite flavor (i.e., low variety seeking) or choose one tub of each of the five flavors (i.e., high variety seeking). We measured participants’ perceived ease of justification for the two options and predicted satiation rate. Participants antici-

pated a faster satiation rate when eating five tubs of their favorite flavor rather than five different flavors ( $M_{\text{favorite}} = 3.86$ ,  $M_{\text{variety}} = 3.09$ ,  $F(178) = 20.06$ ,  $p < .001$ ). Importantly, however, participants found it easier to justify choosing only their favorite flavor than choosing different flavors ( $M_{\text{favorite}} = 5.43$ ,  $M_{\text{variety}} = 4.91$ ,  $F(178) = 6.58$ ,  $p = .011$ ).

In Study 1 ( $N = 108$ ) we demonstrate in a real purchase setting that higher pain of payment decreases variety seeking. We manipulated pain of payment by giving participants either two dollars in cash or in coupons to make a purchase (Shah et al. 2016). Participants purchased five energy drink powders from five flavors. Consistent with our predictions, participants who paid with cash chose a significantly lower variety of flavors than participants who used coupons ( $M_{\text{Highpain}} = 2.71$ ,  $M_{\text{Lowpain}} = 3.15$ ,  $t(106) = 2.25$ ,  $p = .026$ ).

Studies 2 and 3 test the need for justification as the underlying process. In Study 2 ( $N = 206$ ), participants imagined paying with cash or loyalty points and rated their need to justify choices before making a purchase. We find that participants who paid with cash (vs. loyalty points) felt higher pain of payment ( $M_{\text{cash}} = 3.20$ ,  $M_{\text{points}} = 2.31$ ,  $t(204) = 3.62$ ,  $p < .001$ ), and a higher need for justification ( $M_{\text{cash}} = 4.83$ ,  $M_{\text{points}} = 4.34$ ,  $t(204) = 2.07$ ,  $p = .04$ ). A bootstrap analysis confirmed that the effect of payment method on the need for justification was mediated by pain of payment (indirect effect) ( $\beta = .17$ , 95% CI (.08, .30)).

In study 3 ( $N = 301$ ), in a real choice setting similar to study 1, we show that participants who pay with cash (versus coupons) choose fewer flavors of tea ( $M_{\text{cash}} = 2.75$ ,  $M_{\text{coupon}} = 3.14$ ;  $F(1,298) = 5.912$ ,  $p = .016$ ), and this decrease in variety seeking is mediated by a greater need to justify their choices ( $\beta = -.041$ , 95% CI (-.137, -.0001)).

An important assumption behind our predictions is that the choice set includes consumers’ favorites as well as options that are preferred less, allowing consumers to justify their choices by sticking to their favorites. By contrast, when consumers have weak preferences among the choice options and thus no favorites, pain of payment should not affect variety seeking. In the final study ( $N = 602$ ) we manipulated pain of payment as in study 2, and asked participants to choose products from three product categories. We measured participants’ strength of preference between the options in each category. We conducted a mediated moderation analysis for each product category using payment method as the independent variable, pain of payment as the mediator, participants’ preference strength among the product options as the moderator, and variety of products chosen as the dependent variable. The results revealed a significant mediated moderation for each product category (Diet Coke:  $\beta = .102$ , 95% CI (.019, .189); Yogurt:  $\beta = .128$ , 95% CI (.057, .224); Instant Food:  $\beta = .084$ , 95% CI (.031, .148)), indicating that high pain of payment led to less variety seeking, when preference strength among the available options was relatively strong, and this effect was attenuated when consumers had weaker preferences among the available options.

Our theoretical contribution is within the literature on pain of payment. Past work has shown payment methods to affect the quantities (Monger and Feinberg 1997; Raghurir and Srivastava 2008) and type of products purchased (Soman 2003; Thomas et al. 2011). We make an important extension to these findings by showing how payment methods affect the variety of products purchased, while keeping the quantity, amount spent, and type of products constant. Our findings also have significant practical implications. We provide managers with a novel tool for managing demand, as they can increase sales of neglected products by decreasing pain of payment, or promote painful payment methods in order to entice consumers to stick to their favorite brands.

## How the Pain of Payment Can Magnify and Mitigate Choice Overload Effects

### EXTENDED ABSTRACT

There is no denying that consumers today have more products to choose from than ever before. At the same time, the way that individuals pay for purchases has also dramatically shifted with more and more transactions being paid for via credit/debit card or mobile payment (Greene and Schuh, 2017). Thus, while individuals are faced with choosing from a greater product assortment, which can be a potentially difficult and burdensome task, the process of spending has become more convenient and painless than ever before. In this paper, we ask whether the anticipated pain of payment associated with making a purchase from a choice set can affect the likelihood that consumers will experience choice overload effects (i.e., purchase likelihood, decision effort, decision difficulty, post-purchase satisfaction). Across field and lab experiments, we find reducing the anticipated pain of payment—either through paying by ‘plastic’ or by paying less for an item—can serve as a cue to consumers to reduce the likelihood of individuals engaging in a maximization process in order to find the best alternative and instead leads to individuals taking a more satisficing approach. This in turn leads to increased purchasing in larger choice sets, spending less time on the decision, and higher post-purchase satisfaction ratings.

In the first two field experiments, passersby were invited to purchase a black pen for \$1 from a set of alternatives, either being told that they had to purchase using cash (a more painful method of purchase) or ‘plastic’. Experiment 1 (N=200) had a 2 (payment form: cash, student plastic card) X 5 (number of alternatives: 2, 6, 10, 14, 18) between-subjects design. In contrast to Experiment 2, we allowed consumers to purchase as many pens as they wanted. While, there was no difference in buying likelihood in the three smaller-choice conditions between payment method, plastic-paying consumers were significantly more likely to make a purchase than cash-paying consumers in the larger choice conditions (14- and 18-choice sets). Plastic-paying individuals also bought more than one pen more frequently. Thus, in Experiment 2, we used a similar between-subjects design but restricted buying to just one pen. This restriction helped determine whether plastic-paying consumers were less susceptible to choice overload perhaps because they chose to reduce choice conflict/decision-difficulty by buying any pen that met their needs or due to the moderating effect of a less painful payment method on buying in larger choice sets. However, despite restricting individuals to just one pen, paying with plastic still led to significantly more buying in larger choice sets in comparison to when individuals paid with cash. There was no difference in small or medium choice buckets though (2- or 6-choice condition; 10-choice). Thus, once again, there was a significant interaction between payment mode and the quadratic-function of the number of alternatives.

Experiment 3 sought to answer two questions: 1) Is it indeed the pain of payment that drives differences in buying in larger choice sets and 2) From a retailer perspective (and building off previous work that shows that categorization can also moderate choice overload effects, Kahn and Wansink 2004), can the way that a larger assortment is organized/categorized influence whether payment mode always predicts greater buying in larger choice sets? Experiment 3 used a 2 (payment form: cash or plastic) X 3 (assortment structure: one-color category, two-color categories, four-color categories) between-subjects design. All participants (N=120) were given a chance to purchase one pen from a set of sixteen options for \$1.00 using their own money. In the one category condition, participants were given sixteen black pens to choose between. In the two-category con-

dition, the sixteen pens were organized into two-color groups containing eight black pens and eight blue pens. In the four-category condition, the sixteen pens were divided into four black/blue/green/purple color categories. After individuals made the choice whether to buy or not, they were asked follow-up questions, including how painful it was to pay \$1 for the pen (adapted from Shah et al. 2016; 1-7 Likert scale: 1= Not at all painful, 7=Very Painful)? First, we found that there was no significant difference in buying as a function of payment method, when the sixteen pens were broken into two groups of eight black and blue pens each (akin to a medium size choice bucket) or four groups with four pen choices per color (akin to a small choice bucket). However, plastic-paying consumers did in fact buy more than cash-paying consumers when the sixteen pens were all black (akin to a large assortment). In addition, we found that pain of payment significantly mediated the relationship between payment form and buying in this larger assortment condition.

Experiment 4 and 5 tested the process driving these effects more deeply. In Experiment 4, we examined whether reducing the pain of payment through lowering the cost of a given item would moderate the choice overload effect using a 2 (mode of payment: cash, student ‘plastic’ card) X 3 (number of alternatives: 4, 10, 16) X 3 (price per pen: \$0.25, \$1.00, \$2.00) between-subjects design. Regardless of payment method, reducing the price of the pen to \$0.25 led to increased buying at larger choice sets, while increasing the price of the pen to \$2.00 led to decreased buying. In addition, increasing the price led to a maximization process whereby individuals spent more time on the decision, tried more alternatives, and reported lower satisfaction post-purchase. A follow-up online experiment (N=400) was consistent with this maximization theory as paying with cash (versus Venmo) led to a significantly increased desire to want to search to find the best alternative.

This work contributes by better understanding factors influencing the choice overload paradigm. An increasing choice set size alone may not always produce choice overload effects but rather may be due in part to an interaction between the size of the choice set and the (anticipated) pain of payment when purchasing. Thus, pain of payment may serve as a cue of how much one should search or engage in a maximization in order to find the right alternative.

### REFERENCES

- Ariely, Dan, and Jonathan Levav (2000), “Sequential Choice in Group Settings: Taking The Road Less Traveled and Less Enjoyed,” *Journal of Consumer Research*, 27(December), 279-290.
- Ellsworth, Phoebe C. and Klaus R. Scherer (2003), “Appraisal Processes in Emotion,” *Handbook of affective sciences*, 572–95.
- Gabler, Neal (2016), “The Secret Shame of Middle-Class Americans,” *The Atlantic*.
- Galak, Jeff, Justin Kruger, and George Loewenstein (2011), “Is Variety the Spice of Life? It All Depends on the Rate of Consumption.” *Judgment and Decision Making*, 6(April), 230-238.
- Greene, C., & Schuh, S. D. (2017). The 2016 diary of consumer payment choice. *Research Data Reports Paper*, (17-7).
- Kay, Aaron C., Jennifer A. Whitson, Danielle Gaucher, and Adam D. Galinsky (2009), “Compensatory Control: Achieving Order Through the Mind, Our Institutions, and the Heavens,” *Current Directions in Psychological Science*, 18(5), 264–268.
- Knutson, B., Rick, S., Wimmer, G. E., Prelec, D., & Loewenstein, G. (2007). Neural predictors of purchases. *Neuron*, 53(1), 147-156.

- Kuznetsova, Alexandra, Per B. Brockhoff, and Rune Haubo Bojesen Christensen (2017), "LmerTest Package: Tests in Linear Mixed Effects Models," *Journal of Statistical Software*, 82(13).
- Monger, Jodie E., and Richard A. Feinberg (1997), "Mode of Payment and formation of Reference Prices," *Pricing Strategy and Practice*, 5(4), 142-147.
- Netemeyer, Richard G., Dee Warmath, Daniel Fernandes, and John Lynch Jr (2017), "How Am I Doing? Perceived Financial Well-Being, Its Potential Antecedents, and Its Relation to Overall Well-Being," *Journal of Consumer Research*.
- Prelec, Drazen, and George Loewenstein (1998), "The Red and The Black: Mental Accounting of Savings and Debt," *Marketing Science*, 17(1), 4-28.
- 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.
- Raghubir, Priya, and Joydeep Srivastava (2008), "Monopoly Money: The Effect of Payment Coupling and form On Spending Behavior," *Journal of Experimental Psychology: Applied*, 14(September), 213.
- Ratner, Rebecca K., Barbara E. Kahn, and Daniel Kahneman (1999), "Choosing Less-Preferred Experiences for The Sake of Variety," *Journal of Consumer Research*, 26(June), 1-15.
- Shah, Avni M., et al. (2016), "'Paper Or Plastic?': How We Pay Influences Post-Transaction Connection," *Journal of Consumer Research*, 42(February), 688-708.
- Soman, Dilip (2003), "The Effect of Payment Transparency On Consumption: Quasi-Experiments from The Field," *Marketing Letters*, 14(3), 173-183.
- Soman, D., & Gourville, J. T. (2001). Transaction decoupling: How price bundling affects the decision to consume. *Journal of Marketing Research*, 38(1), 30-44.
- Sussman, Abigail B. and Adam L. Alter (2012), "The Exception Is the Rule: Underestimating and Overspending on Exceptional Expenses," *Journal of Consumer Research*, 39(4), 800-814.
- Thomas, Manoj, Kalpesh Kaushik Desai, and Satheeshkumar Seenivasan (2011), "How Credit Card Payments Increase Unhealthy Food Purchases: Visceral Regulation of Vices," *Journal of Consumer Research*, 38(June), 126-139.
- Thompson, Suzanne C. (1981), "Will It Hurt Less If I Can Control It? A Complex Answer to a Simple Question," *Psychological Bulletin*, 90(1), 89-101.
- Weiner, Bernard (1980), "A Cognitive (Attribution)-Emotion-Action Model of Motivated Behavior: An Analysis of Judgments of Help-Giving.," *Journal of Personality and Social Psychology*, 39(2), 186.