

Monopoly Money: The Effect of Payment Coupling and Form on Spending Behavior

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This article examines consumer spending as a function of payment mode both when the modes differ in terms of payment coupling (association between purchase decision and actual parting of money) and physical form as well as when the modes differ only in terms of form. Study 1 demonstrates that consumers are willing to spend more when a credit card logo is present versus absent. Study 2 shows that the credit card effect can be attenuated when people estimate their expenses using a decomposition strategy (vs. a holistic one). Noting that credit card and cash payments differ in terms of payment coupling *and* form, Studies 3 and 4 examine consumer spending when the payment mode differs only in physical form. Study 3 demonstrates that consumers spend more when they are spending scrip (a form of stored value certificate) versus cash of the same face value. Study 4 shows that the difference in spending across payment modes (cash and gift certificates) is attenuated by altering the salience of parting with money through contextual manipulations of the differences between cash and gift certificates.

Keywords: money illusion, gift certificates, credit cards, subjective value of money, economic psychology

With the proliferation of different payment modes in recent years, consumers have a wide array of payment options to choose from in making their purchases. Typically, consumers have the option to purchase with cash, a check, or a credit or a debit card. However, other payment modes such as bank drafts, money orders, traveler's checks, gift certificates, gift cards, coupons at fairs, chips at gaming houses, stored value cards such as those used in mass transit and tolls, and so forth are quite common in the marketplace. Some types of gift cards are almost identical to debit cards, such as the American Express or the Visa gift card. Further, the advent of Internet commerce has spurred the growth of new payment modes such as Paypal. Despite the proliferation of these diverse payment modes, and that the mode of payment is an important contextual element in any transaction, research on the influence of payment mode on consumer spending decisions and behavior is relatively sparse (for a review see

Raghbir, 2006). Do consumers spend differently when using one payment mode relative to another mode? For example, do consumers spend more when they receive \$50 in the form of a gift card than in the form of cash? If indeed they do, then why? This research addresses these issues.

Although a growing body of literature demonstrates that the normative principle of descriptive invariance, which holds that preferences should not vary when the same objective stimuli are represented differently, is commonly violated in the domain of money (e.g., Gourville, 1998; Raghbir & Srivastava, 2002; Shafir, Diamond, & Tversky, 1997; Shefrin & Thaler, 1988; 1985), relatively few studies have investigated differences in spending behavior as a function of the mode of payment. The few studies that exist demonstrate that consumers tend to spend more when paying with a credit card than when paying by cash or check, after controlling for other factors (Cole, 1998; Feinberg, 1986; Hirschman, 1979; Prelec & Loewenstein, 1998; Prelec & Simester, 2001; Soman, 2001). Tokunaga (1993) argued that a credit card is a convenient payment mode that allows people to defer and spread out payments and, thus, consumers differ in how they treat credit card and cash purchases. Review of the previous research on the effect of payment mode on spending behavior suggests that the focus has been primarily on the difference between credit card and cash payments. Further, the phenomenon of higher spending when paying with a credit card than with cash has been attributed to the temporal separation of the purchase decision and the actual payment in the case of credit card payments (Prelec & Loewenstein, 1998). We refer to this specific feature of payment mode as payment coupling.

In this article we argue that payment mode can be differentiated in at least two ways: payment coupling and payment form. Payment coupling refers to the extent to which the decision to purchase (or spend) is temporally associated with the actual parting of money (Loewenstein & Prelec, 1992; Prelec & Loewenstein, 1998; Thaler, 1999) whereas payment form refers to differences between

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two monetary instruments that are identical in coupling and face value but different in terms of physical appearance (e.g., \$50 legal tender and a \$50 gift certificate that can be used anywhere). Although the emphasis of previous research has been on the effect of payment mode when the modes differ in coupling, relatively little research focuses on differences in spending as a function of payment form. Noting that a credit card differs from cash in coupling as well as form, this research examines consumer spending as a function of payment mode both when the mode differs in coupling and form (e.g., credit card vs. cash) and when the mode differs only in form, holding constant payment coupling (e.g., gift certificate and cash of equivalent value).

The conceptual underpinning of our research is that payment modes differ in transparency or the vividness with which individuals can feel the outflow of money, with cash being the most transparent payment mode. We argue that the more transparent the payment outflow, the greater the aversion to spending or higher the "pain of paying" (Prelec & Loewenstein, 1998), leading to less transparent payment modes such as credit cards and gift cards (vs. cash) being more easily spent or treated as play or "monopoly money." Further, to the extent that the transparency of paying underlies differences in spending behavior, altering the salience of parting with money should attenuate the difference across payment modes.

In a series of four studies, this article examines consumer spending decisions as a function of payment mode. Studies 1 and 2 examine whether consumers are willing to spend more when the payment mode is a credit card versus when it is cash (payment mode differs in coupling and form). Holding payment coupling constant, Studies 3 and 4 examine spending decisions when an equivalent amount is given either in the form of a gift certificate or cash (payment mode differs only in form). Exploring conditions under which payment modes lead to differences in spending decisions, Studies 2 and 4 examine the extent to which the spending differences across payment modes can be eliminated or attenuated by altering the salience of parting with money in the case of credit cards and gift certificates, respectively.

Conceptual Background

Research on the cognitive psychology of financial behavior suggests that people organize their finances around mental accounts (Thaler, 1985, 1999). Thaler (1999) described mental accounting as the "set of cognitive operations used by individuals and households to organize, evaluate, and keep track of financial activities." Analogous to accounting and budgeting systems used by companies, individuals are modeled as creating separate source-based expense and income ledgers in their mind. Shefrin and Thaler (1988) suggested that people tend to categorize income into different mental accounts that then affects the propensity to spend (see also Henderson & Peterson, 1992). For example, people group and label expense accounts separately such as food and entertainment, and spending is driven by the available surplus or deficit in each account. Since people treat money differently depending on how it is labeled, money in one mental account is not a perfect substitute for money in another account thereby violating the normative principle of fungibility. In general, mental accounts serve to simplify financial decision making and aid in making trade-offs between different types of spending.

At the specific transaction level, a mental account is opened, and the decision to purchase or not is based on an evaluation of the

perceived benefits of consumption and the costs of payment in this account (Prelec & Loewenstein, 1998; Thaler, 1999). Prelec and Loewenstein (1998) suggested that when people make purchases, there is an immediate pain of paying which can reduce the pleasure of consumption or even prevent it altogether. In balancing the pleasure derived from a purchase and the pain of paying for it, making the cost salient undermines the pleasure one can derive, whereas making the benefits of the purchase salient may blunt the pain of paying. One factor that tends to enhance the pleasure of consumption and reduce the pain of paying is coupling or the extent to which the consumption and payment are psychologically linked together due to their temporal proximity.

Previous literature on the effects of payment mode suggests that consumers tend to spend more when using a credit card than cash (Feinberg, 1986; Hirschman, 1979). The higher spending with credit cards relative to cash has been attributed to the temporal separation of the purchase from the actual payment in the case of credit cards or the decoupling of the purchase from the payment (Prelec & Loewenstein, 1998; Thaler, 1999; Tokunaga, 1993). In the case of cash purchases, there is a tight coupling of the consumption and the payment thereby accentuating the pain of paying. In the case of credit card purchases, actual parting of the money occurs after the purchase decision thereby dulling the pain of paying. Thus, the observed bias in spending across credit card and cash payments is because the pain of paying is higher when paying by cash than when paying with a credit card. Further, in balancing the immediate gratification against the expectation of the pain of paying in the future, people are likely to underestimate the pain and thus spend more with a credit card than cash. In line with this reasoning, Srivastava and Raghuram (2002) reported that people recall their cash payments better than their credit card expenses, indicating that the salience of individual payments is lower for credit card payments. This reasoning also implies that the difference in spending behavior is likely to attenuate if the salience of parting with money is increased at the point of purchase.

In addition to the difference in payment coupling across payment modes, we argue that payment modes may also differ in terms of form. Consider an individual who receives \$50 either in the form of cash or a gift card (that can be used almost universally). Although there is no difference in coupling or the face value of the amount of money given (i.e., \$50), the two payment modes are different in physical appearance and thus differ in terms of payment form. In the case of credit cards versus cash, the two payment modes differ in terms of coupling as well as form whereas in the case of gift cards versus cash, the two modes differ only in terms of form. We argue that the physical form of the payment mode is likely to affect payment transparency or the vividness with which the outflow of money is felt. Thus, extending the reasoning to different payment forms, the more transparent the payment form, the higher the salience of parting with money, the greater the aversion to paying, and the lower the likelihood and level of spending.

In terms of payment transparency, cash is the most transparent form of money as its status as legal tender makes it salient in both physical form and amount (Soman, 2003). When paying by cash, the feeling of parting with money is very vivid and is akin to "having one's meter running" (Thaler, 1999). In contrast, a different payment form (e.g., credit card or gift card) may not feel or appear as real as legal tender thereby reducing the salience of parting with real money. In other words, using a different payment

form (other than legal tender) may seem like play money or “monopoly money,” making it easier to spend. Given that the transparency of payment makes the parting of money more vivid and real, the pain of paying is likely to be greater when using cash relative to other less transparent payment forms. In other words, reducing the salience of parting with real money psychologically reduces the barrier to spend.

Four studies examine differences in spending behavior as a function of payment mode. Study 1 begins by demonstrating that consumers’ willingness to spend is higher when a credit card logo is present versus absent. Study 2 shows that the credit card effect is attenuated when people are asked to estimate credit card payments using a piecemeal decomposition strategy (vs. a holistic estimate) that increases the salience of individual payments (Menon, 1997). Given that a credit card differs from cash in terms of coupling and form, Studies 3 and 4 examine differences in spending behavior when the payment mode differs only in form. Study 3 demonstrates that consumers spend more when \$50 is given in the form of a gift certificate than when an equivalent amount is given in the form of cash. Study 4 extends the findings by showing that compared to the baseline where consumers are more likely to spend when using a gift certificate relative to cash, the differences in spending behavior can be moderated by contextually altering the salience of parting with money.

Study 1

As a starting point, the objective of Study 1 is to replicate the previous finding that people tend to spend more when using a credit card than cash (Feinberg, 1986; Hirschman, 1979). In particular, we examine whether the mere presence of a credit card logo increases the price that consumers are willing to pay. Another objective of Study 1 is to explore whether general attitudes toward the use of credit cards and cash affect the price that consumers are willing to pay in the presence versus absence of a credit card logo.

Method

One hundred and fourteen undergraduate students (68 male and 46 female, median age = 21) from an introductory marketing class participated in the study for partial course credit. Participants were assigned at random to one of four conditions of a 2 (credit card logo: present or absent) \times 2 (replicate: lunch or dinner) between-subjects design. The cover story was that a restaurant called “Michaul’s of St. Charles,” was thinking of opening in their city. They were given a brief description of the restaurant:

Known as ‘N’awlins’ Best Cajun Restaurant, Michauls of St. Charles is thinking of opening in _____. If you want delicious Cajun food, Cajun music, and that Cajun atmosphere. . . Michauls of St. Charles is the place! Right on the busiest street of _____, this restaurant should be a real find. Spacious areas for parties, music, and drinking. . . and that spicy Cajun food all rolled into one!

Creole and Cajun food has a long history. . . it has been influenced throughout the years by many cultures French, West Indian, Sicilian and Indian. When the Spanish began to settle here, they brought us the pepper and the tomato. . . the beginnings of our Shrimp Creole!

New Orleans has traditions related to food—one of them is eating red beans and rice on Mondays. Many of us grew up never knowing the reasons why. . . we just enjoyed it. However, Monday is “clothes” day,

and red beans and rice is the perfect meal because it cooks slowly while we are doing the laundry. Our tradition of eating seafood on Fridays is based on the Catholic practice of fasting from meat on that day, especially during the Lenten season. (In this city, it is no sacrifice!).

Participants were asked to estimate the amount they would be willing to pay for a set of nine menu items, using an open-ended format. The replicate manipulation of lunch or dinner was introduced in the question that asked: “If you were to go to Michaul’s for lunch [dinner], how much would you be willing to pay for. . .” They were given names of nine dishes that included three appetizers: Red Bean soup, Caesar’s salad, and Green salad; three entrées all served with rice: Cajun roasted chicken (breast and leg), N’awlins Vegetables and Beans (broccoli, beans, and eggplant), and Creole Seafood (shrimps, squids, and mussels); and three items in the dessert/beverage section: ice-cream, soda (Coke, Pepsi, 7-up), and tea/coffee. The price estimates of the nine items were averaged to form an overall “food price index” ($\alpha = .84$). Participants were then asked to rate the likelihood of visiting the restaurant using a 7-point scale, 1 (*not at all likely*) to 7 (*very likely*).

To ensure that the conditions did not differ in terms of participants’ actual usage and spending, we asked them to estimate how much they spend, on average, per head for lunch and dinner (using an open ended format), how often they ate out in the last week (Did not eat out, 1–2 times, 3–4 times, 5–6 times, and 7 or more times), and an estimate of the amount they spend on eating out in a typical week.

The second page of the questionnaire consisted of questions that related to general usage and attitudes toward credit cards and cash. Participants were first asked to indicate their usual mode of payment for lunch (or dinner, depending on the condition to which they had been assigned). They were given five different payment modes: credit card, ATM debit card, check, cash, and other, and responded by circling one of three subjective frequency categories, 1 (*never*), 2 (*sometimes*), and 3 (*always*).

A battery of 20 agree-disagree statements, 1 (*strongly disagree*) to 7 (*strongly agree*), was presented next to measure participants’ attitudes toward credit cards versus cash. The 20-items loaded onto six factors that represented negative affect (4 items tapping: fear, regret, guilt, and underestimation of spending); positive affect (3 items tapping: feel good, proud, status), beliefs in overspending (3 items); control of spending (2 items tapping convenience and control of spending with credit cards); ease of transaction (4 items tapping the ease of paying with credit cards), and safety concerns (3 items tapping misuse of credit cards). One item did not load onto any of the six factors (with a loading $> .50$). Means of the 20 items and their factor loading are presented in Table 1. Confirmatory reliability analyses showed that the internal validity of the negative affect scale ($\alpha = .84$), positive affect scale ($\alpha = .78$), spending scale ($\alpha = .70$), and ease scale ($\alpha = .65$) were acceptable, so these were combined into four separate indices based on a simple average. The two items comprising the control factor, and the three items comprising the safety factor has low scale reliability ($\alpha = .32$ and $.52$, respectively), so they were treated separately in later analyses, along with the one item that did not load onto any factor.

Finally, all participants responded to how motivated ($M = 5.16$) and interested ($M = 5.09$) they were in completing the questionnaire using a 7-point scale, 1 (*not at all*) to 7 (*very*).

Table 1
Attitude Statements Means, Standard Deviations and Factor Structure in Study 1

	<i>M</i>	<i>SD</i>	Factor loadings and scale reliability					
			Neg	Pos	Spend	Control	Ease	Safety
Scale reliability (Cronbach's alpha)			.84	.78	.70	.32	.65	.52
I believe credit cards lead to overspending.	4.12	1.94			.65			
Credit cards are convenient.	6.21	1.14				.69		
Using credit cards makes me feel good.	3.42	1.44		.79				
I prefer combining expenses on a credit card as it helps me control my monthly budget.	3.33	1.88				.62		
It's unsafe to give my credit card number to others.	5.22	1.83						-.73
Paying by credit card makes me feel proud.	2.91	1.41		.89				
The type of card I use reflects my status.	3.25	1.80		.78				
I fear getting my credit card bill every month.	3.51	1.73	.77					
I control my expenses better when I pay by card.	2.93	1.57						
I believe companies are trying to get me to spend more by giving me a high credit limit.	4.89	1.92			.82			
I tend to use my credit card without thinking of the amount I am charging to it.	3.77	1.83						.63
I spend less when I shop with cash.	4.84	1.77			.51			
I regret the amount that I charge to my card when I have to finally pay my bills.	3.82	1.86	.89					
I find paying cash inconvenient.	3.81	1.94					.87	
I buy unnecessary items when using a credit card.	3.40	1.65						.53
I underestimate the total expense of a shopping trip when I am planning to use a credit card.	3.50	1.77	.69					
Carrying cards is more convenient than carrying cash.	5.32	1.58					.74	
When I pay cash, I find it difficult to remember how much I have spent.	4.23	1.90					.52	
Credit card bills give a monthly expense summary.	5.46	1.58					.67	
Using credit cards makes me feel guilty.	2.95	1.69	0.79					

Results and Discussion

A multivariate analysis of variance on self reports of frequency of and amount spent on eating out was conducted. There were no differences in the reported frequency of eating out ($M = 3.12$) or the amount spent per week on eating out ($M = \$46.13$) across the four conditions (p 's $> .39$ for main and interaction effects). The reported amount spent per person on lunch was marginally higher in the presence ($M = \$7.34$) versus absence of a credit card logo ($M = \$6.47$; $F(1, 108) = 3.43, p = .06, \eta^2 = .03$) as was the amount spent per person on dinner (M 's = $\$12.70$ vs. $\$10.96$; $F(1, 108) = 3.53, p = .06, \eta^2 = .03$). No other effects were significant (p 's $> .45$).

A 2×2 ANOVA on the food price index revealed a main effect of the presence versus absence of the credit card logo ($F(1, 110) = 4.20; p < .05, \eta^2 = .04$). Means are graphically presented in Figure 1. The main effect of the replicate factor was not significant ($F(1, 110) = 2.60, p > .11, \eta^2 = .023$) and neither was the interaction ($F(1, 110) = .06; p > .81, \eta^2 = .001$). On average, participants were willing to pay more when the credit card logo was present ($M = \$4.53, SD = 1.15$) than when it was absent ($M = \$4.11, SD = 1.06$). Thus, even though consumers were not explicitly informed which payment mode they would be using, the mere presence of a credit card logo increased the price that they were willing to pay.

The same ANOVA incorporating the indices of negative affect, positive affect, spending and ease, and responses to the remaining six attitude statements as covariates revealed that the statement "I tend to use my credit card without thinking of the amount I am charging to it" was significant ($F(1, 95) = 14.90, p < .001, \eta^2 = .14$), whereas the main effect of the presence versus absence of the

credit card logo remained significant ($F(1, 95) = 5.84, p < .05, \eta^2 = .06$) and the replicate factor of whether the estimates were for lunch or dinner became significant ($F(1, 95) = 6.75, p < .05, \eta^2 = .07$). No other effects were significant (p 's $> .25$ for all).

To examine how attitudes to the statement affected judgments, we conducted a median split on the statement "use without thinking" (Median = 3) and incorporated this as an additional measured variables in the 2×2 ANOVA on the food price index. This $2 \times 2 \times 2$ ANOVA revealed that all main effects were significant ($F[1, 106] = 4.18, 4.69, \text{ and } 13.04$ for the credit card logo, replicate, and using a credit card without thinking; $p < .05$ for all, η^2 's = .04, .04, and .11, respectively). The main effect of the attitude to the statement "I tend to use my credit card without thinking of the amount I am charging to it" revealed that those who agreed with the statement estimated higher prices ($M = \$4.63, SD = 1.19$) than those who did not agree with it ($M = \$4.00, SD = .95$).

These results suggest that the less thought individuals pay to the amount they are charging to their card, the more money they are likely to charge to it. Consistent with the idea that greater transparency of payment reduces the amount spent, the findings suggest that the less salient the parting of money, the higher the level of spending. Study 2 tests whether the difference in spending decisions can be attenuated by manipulating the salience of parting with money by focusing on many small payments relative to one large payment.

Study 2

Study 2 has two main objectives. First, it attempts to replicate that people are willing to spend more (or estimate spending more) when

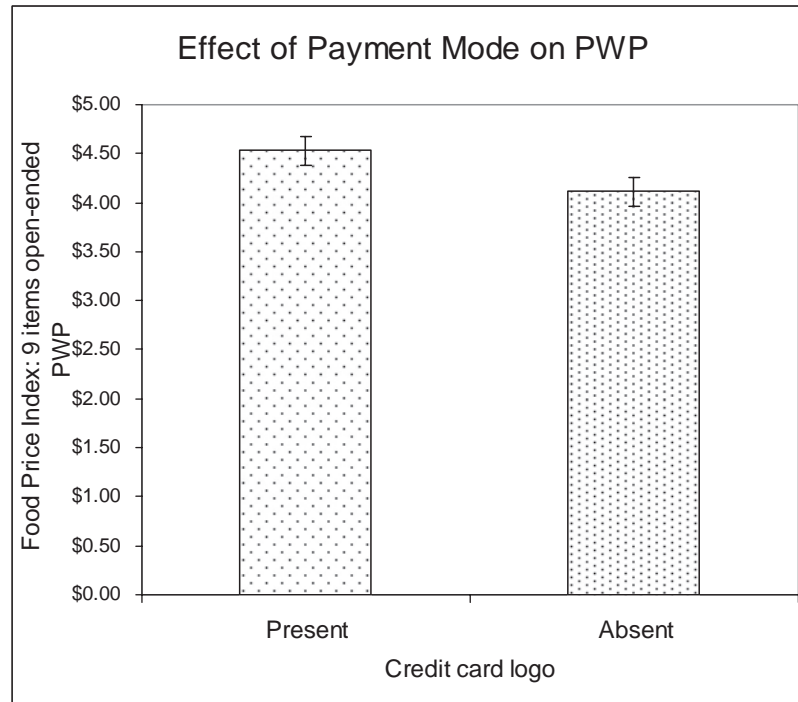


Figure 1. Results of Study 1: Effect of the Presence of a Credit Card Logo on Price-Willing-to-Pay. Error bars represent standard error of means (standard deviation/ \sqrt{n}).

using a credit card than when using cash. Second, and more important for the current investigation, Study 2 examines the effect of using a decomposition strategy to increase the transparency of credit card payments on attenuating the difference between credit card and cash payments (Menon, 1997; Srivastava & Raghurir, 2002).

In the context of a shopping basket purchase (numerous product categories), in the piecemeal decomposition estimate condition, people were asked to estimate the cost of each item in the basket individually. In another condition, the holistic estimate condition, people were just asked to estimate the total cost of the basket when using either a credit card or cash. It was expected that the salience of parting with money would be higher in the piecemeal decomposition estimate condition (Menon, 1997; Srivastava & Raghurir, 2002; Thaler, 1999), thereby attenuating the difference between credit card and cash in this condition. In contrast, in the holistic estimate condition, we expected to replicate the previous finding that people would be willing to spend more when paying with a credit card than with cash. The rationale is that in the decomposition condition, each of the small costs will loom large thereby accentuating the pain of paying. In addition, the decomposition estimation condition creates a tight coupling or makes the link between the payment and specific consumption act salient, when the opposite is highly desirable (Thaler, 1999). For example, Thaler (1999) suggested that for an expensive multicourse dinner, a *prix fixe* dinner is preferable to having each of the courses priced *a la carte*.

Method

Fifty-seven undergraduate students (33 male and 24 female) from an introductory marketing class (median age = 21) partici-

pated in the experiment for partial course credit. Participants were assigned at random to one of four conditions of a 2 (payment mode: cash and credit card) \times 2 (estimation strategy: holistic total and piecemeal decomposition) between-subjects design. Sample size ranged from 9 to 19 in each of the four conditions. The cover story was a scenario where they had to estimate the budget for a thanksgiving party. They were told:

Chris is planning a Thanksgiving party. There will be 6 guests. It will be a nice, sit-down affair. The menu consists of turkey with accompaniments, salad, vegetables, and bread. Wine will be served with dinner. Pie will follow later. Chris has to budget how much this party will cost. Chris will be paying for the party expenses with cash [credit card]. Please help Chris estimate how much the food will cost.

The items given were assorted nuts, wine (red and white), turkey, cranberry sauce, gravy and stuffing, salad dressing and ingredients, vegetables, breads, pies, whipped cream, cheese, fruit, and other incidentals. The estimation strategy was manipulated by asking those in the holistic estimate condition to: "Just estimate the total amount based on the items below," while asking those in the piece-meal estimate condition to "Please estimate how much each item will cost and then add them together to get the total amount." After reading the vignette manipulating the payment mechanism that Chris was going to use, and completing the budget estimation task that manipulated whether the estimate was arrived at through a piecemeal decomposition strategy or a holistic total strategy, participants estimated the overall cost of the party, which served as the dependent variable. They were also asked to report the average amount they spent per month on groceries to control for heterogeneity in participants' spending levels.

Results and Discussion

A 2×2 ANOVA on the estimated budget including the amount spent per month as a covariate yielded a significant interaction, $F(1, 52) = 4.27, p < .05, \eta^2 = .08$. Means are graphically presented in Figure 2. Consistent with our reasoning that the holistic versus piecemeal decomposition estimation strategy affects the manner in which credit card (but not cash) judgments are made, the effect of estimation strategy was only significant in the credit card condition, $F(1, 28) = 6.22, p < .05, \eta^2 = .18$, and not in the cash condition, $F(1, 23) = .58, p > .45, \eta^2 = .03$. Further, replicating previous research and the results of Study 1, in the holistic estimate condition, participants' estimates of the overall cost of the party were significantly higher when Chris was using a credit card to pay for the party ($M = \$175.16, SD = 64.01$) as compared to when Chris was using cash [$M = \$145.56, SD = 27.87; F(1, 25) = 4.25, p < .05, \eta^2 = .15$]. In contrast, when participants used a piecemeal decomposition strategy to estimate the overall cost of the party, estimates were directionally lower in the credit card ($M = \$134.00, SD = 39.69$) versus cash condition, [$M = \$163.35, SD = 60.36; F(1, 26) = 2.75, p > .11, \eta^2 = .10$]. Although not significant, the reversal in the piecemeal decomposition strategy was not expected and should be replicated prior to drawing inferences from it.

Study 2 replicates the findings of earlier research on piecemeal and holistic processing (Menon, 1997) as well as credit card versus cash estimates (Srivastava & Raghbir, 2002). It also extends both findings to show that the increased salience of individual payments in the piecemeal processing strategy attenuates observed differences across credit card and cash purchases. The results show that future estimates of spending were

significantly higher in the credit card condition than in the cash conditions, but only when the total cost of the party was estimated holistically. The result is consistent with our contention that due to the differences in coupling of payment as well as form, the salience of parting with money is lower in the case of credit card purchases thereby encouraging spending. However, when the salience of parting with money is increased by estimating the overall cost using a piecemeal decomposition strategy, the inclination to spend is curbed and thus the difference in spending between credit cards and cash is attenuated. Study 2 thus extends the previous research on spending behavior as a function of payment mode.

Although prior literature has documented the credit card effect, Studies 1 and 2 explored whether the salience of parting with money underlies differences across credit card versus cash modes of payment. However, given that credit cards differ from cash in terms of payment coupling as well as form, Studies 3 and 4 examine spending behavior as a function of payment form only. In particular, Study 3 examines spending behavior when an equivalent amount of money is given in the form of a gift certificate versus cash.

Study 3

Study 3 examines differences in spending behavior when individuals receive an identical amount of money either in the form of "scrip" or cash. Some retailers use "scrip," a prepaid amount of money with the value clearly provided on the face of the instrument. The scrip is usable in a specific store toward purchases and any of the value that is unspent is returned in cash. In order to

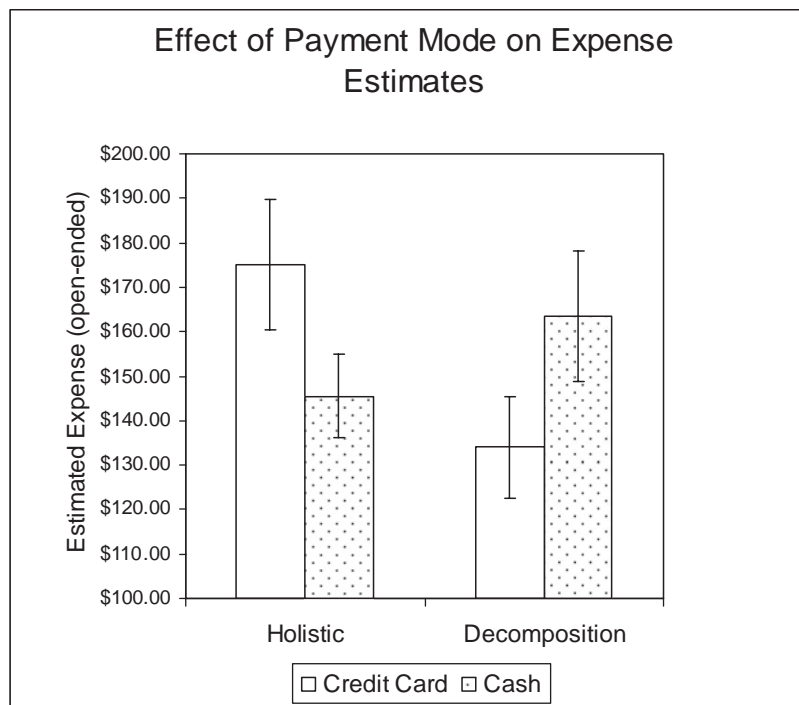


Figure 2. Results of Study 2: Effect of Payment Mode on Expense Estimation Using Holistic and Decomposition Estimation Strategies. Error bars represent standard errors of means (standard deviation/ \sqrt{n}).

control for other factors except payment form, explicit instructions emphasized that the money was being given for the specific purpose of purchasing items on a shopping list. To the extent a gift card (or scrip) is less transparent than cash and is thus treated as monopoly money, the pain of paying is likely to be lower leading to more spending when using scrip relative to when using cash.

Method

Twenty-eight students (12 males and 16 females) from an undergraduate introductory marketing class (median age = 21) participated in the experiment for partial course credit. Participants were assigned at random to the two conditions: 16 participants were given a \$50 bill and 12 participants were given a \$50 scrip certificate along with a shopping list. Participants were asked to imagine that they were shopping for groceries from a shopping list and were clearly informed that the grocery store would give back change in cash, regardless of whether the payment for the groceries had been made using scrip or cash. Thus, within the context, the two payment forms were equally fungible (i.e., mutually substitutable or interchangeable).

The items were chosen so as to be fairly typical of an undergraduate's shopping basket. Expected to cost under \$20, the shopping list comprised toothbrushes, canned soup, and ketchup. Participants were given a booklet of options for products and brands available for each of the product categories. These included the brand name, variety, size, and price. The list within each product category was sorted by price. Participants were given separate sheets listing brands in each product category. There were 35 options for toothbrushes ranging from the Colgate Plus Diamond Compact Head Soft toothbrush for \$1.99 to a Sonicare Sonic Toothbrush Personal Model with 1 Brush head for \$89.99. There were 34 options listed in the canned soup category ranging from Campbell's Cream of Mushroom priced at \$0.69 for a 10.7 oz can to Campbell's Broccoli Cheese soup priced for \$1.19 also for a 10.7 oz can. There were nine options in the ketchup category. The lowest priced option was a 14 oz bottle of Heinz ketchup priced at \$1.39 and the most expensive option was the Heinz squeeze ketchup 64 oz bottle, priced at \$4.29. Participants could choose as many brand units as they wanted within each product category. Until after they had completed the experiment, they were unaware that the money was not theirs to keep. This was done to capture their behavior as realistically as possible. The dependent measure was the average amount spent per item purchased.

Results and Discussion

There was no difference in the number of items purchased as a function of payment form for scrip ($M = 6.08$, $SD = 4.21$) and cash ($M = 5.50$, $SD = 2.80$) conditions, $F(1, 26) = .19$, $p > .66$, $\eta^2 = .01$. A one-way ANOVA on the average amount spent per item purchased, including the number of items purchased from each category as a covariate, was significantly different as a function of payment form, $F(1, 25) = 5.21$, $p < .05$, $\eta^2 = .17$. The covariate also exerted a significant effect, $F(1, 25) = 16.62$, $p < .05$, $\eta^2 = .40$. Follow-up analyses to examine the direction of this effect showed that the correlation between the average amount spent per item and the number of items purchased was not significant ($r = -.06$, $p > .74$) across the two payment mode condi-

tions. However, examining the correlations separately for the scrip and cash condition revealed that while the number of items purchased and the average amount spent were unrelated in the scrip condition ($r = .13$, $p > .66$), they were marginally negatively correlated in the cash condition ($r = -.46$, $p < .06$). This implies that in the cash condition, the more people purchased in the product category, the cheaper the price of the individual items purchased, whereas when they were paying by scrip they did not appear to make this tradeoff between number of items purchased and unit cost of the item. Another ANOVA on the total amount spent, including the number of items purchased from each category as a covariate, showed no significant effects of the covariate, $F(1, 26) = 1.16$, $p > .29$ or form, $F(1, 26) = .26$, $p > .50$.

In the aggregate, means across all product categories show that participants spent more per item when they were given scrip ($M = 1.76$, $SD = .42$) than when they were given an equivalent amount in cash ($M = 1.53$, $SD = .36$). Means are graphically presented in Figure 3. The total amount spent was higher in the scrip condition than in the cash condition across all product categories: Soup: $M_s = 3.81$ ($SD = 3.86$) and 3.02 ($SD = 3.02$), Toothbrush: $M_s = 3.38$ ($SD = 1.18$) and 3.00 ($SD = 1.85$), Ketchup: $M_s = 2.23$ ($SD = 0.96$) and 1.98 ($SD = 1.11$).

Study 3 demonstrates that participants' spending behavior varied as a function of payment form. In particular, participants who were given \$50 in the form of scrip spent more than participants who were given the \$50 in cash for the same purpose. Consistent with the argument that scrip is less transparent than cash and is treated like play money, participants spent more when paying by scrip than when paying by cash even for frequently purchased utilitarian goods. Although Study 3 demonstrates that people are willing to spend more with scrip than with cash, Study 4 examines whether the monopoly money effect manifests itself in a real choice task. Importantly, Study 4 examines whether the difference in spending behavior when using a gift certificate relative to cash can be attenuated by altering the difference in transparency and thereby the pain of paying of the payment mode.

Study 4

Study 4 examines the effect of payment form in a real choice context where participants were given \$1 either in the form of a gift certificate or in cash. The gift certificate could be exchanged either for cash (\$1) or be used to purchase a Starburst candy whereas the \$1 bill could be either kept or be used to purchase a Starburst candy. Consistent with the results of Study 3 and the contention that an equivalent face value gift certificate is more likely to be treated as play money and thus more readily spent, we expected participants would be more likely to purchase the Starburst candy when they were given the \$1 in the form of a gift certificate versus cash.

Importantly, Study 4 attempts to provide insight into the underlying reason for the differential effect of payment form on spending behavior. The transparency of the payment form was altered by manipulating the relative similarity between a gift certificate and cash. In one condition, the difference in physical form was suppressed by asking participants to treat the gift certificate like they would treat cash. They were asked to place the gift certificate in their wallet for an hour prior to the choice task. The rationale was that storing the gift certificate in their wallet would dull the

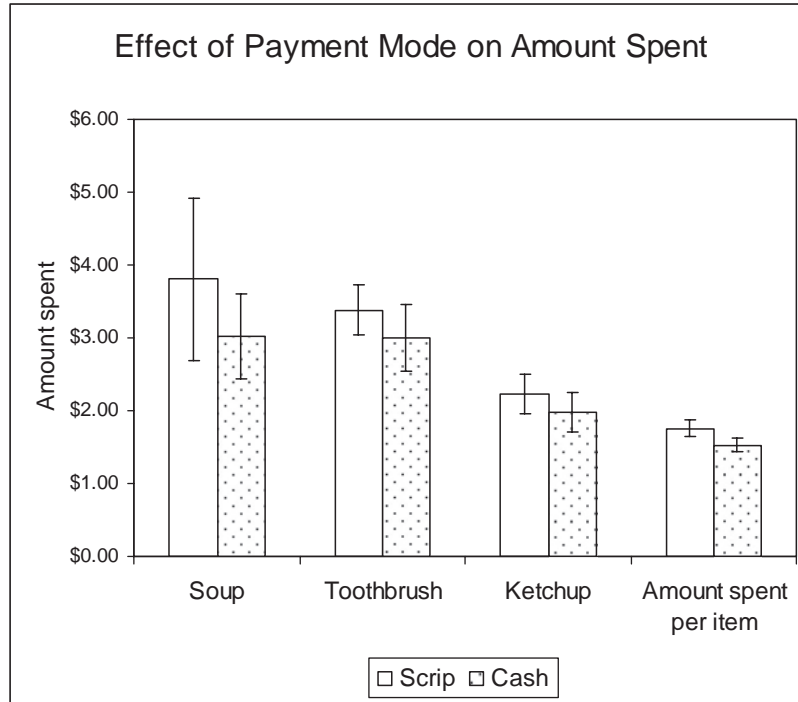


Figure 3. Results of Study 3: The Effect of Paying Using Scrip versus Cash in a Simulated Purchase Situation. Error bars represent standard error of means (standard deviation/ \sqrt{n}).

difference in form. The act of storing the gift certificate in the wallet and then having to take it out at the time of choice is also likely to give the feeling of parting with something of value, as is the case with cash. The goal was to explore a condition under which the spending difference between a gift certificate and cash would be attenuated.

However, this reasoning is not without limits. In another condition, the difference in physical form was made salient again by making a \$1 bill visually prominent at the time of choice. Thus, as in the previous condition, participants were asked to store the gift certificate in their wallets for an hour, but at the time of choice, a \$1 bill was visually prominent. The rationale was that the difference in transparency of the payment form would be salient again and given its physical form and appearance relative to legal tender (\$1 bill) it would be treated as play money and thus be more likely to be spent. The goal was to show that the effect would reemerge in the condition where the gift certificate was held like cash, if the difference between the two payment modes was highlighted at the time of spending.

In sum, Study 4 tests the following predictions. First, as in Study 3, it was expected that participants would be more likely to spend the \$1 on purchasing the Starburst candy when they were given the money in the form of a gift certificate versus cash. Second, we expected that the difference in the likelihood to spend between the gift certificate and cash would reduce when the gift certificate (as well as cash) had been placed in the wallet for an hour prior to making the spending decision. Third, even when the gift certificate was placed in the wallet and stored like cash, when the difference in payment form between the gift certificate and cash was highlighted at the time of choice, the difference in the likelihood of

spending between the gift certificate and cash would reemerge: participants would be more likely to spend the \$1 on purchasing the Starburst candy when they were given the money in the form of a gift certificate versus cash.

Method

One hundred and thirty students enrolled in an introductory business class were assigned at random to one of six conditions in a 2 (payment form) \times 3 (relative difference in transparency or salience) between-subjects design. Payment form was manipulated by whether participants received \$1 in the form of cash ($n = 68$) or in the form of a gift certificate ($n = 62$).

The cover story was that the \$1 represented a token of appreciation for participating in the study. All participants were informed that the money was theirs to keep at the time they were given the money. In the gift certificate condition, the text of the certificate read

Gift Certificate: This Certificate entitles the holder to \$1.00 (One dollar only). Thank you for participating in the BA106 experiment. Please remember to redeem your certificate for \$1.00."

The gift certificate used in two of the conditions is shown in Appendix 1. At the time of the choice task, those in the gift certificate conditions had to choose whether they would exchange their gift certificate for either a \$1.00 bill or a Starburst candy, whereas those in the cash condition had to decide between keeping their \$1.00 bill or a Starburst candy.

The relative difference in transparency was manipulated in three ways. In the *control* condition, participants were given the \$1 at

the end of the experimental session (approximately 5 min prior to making their choice) either in the form of cash or a gift certificate in an envelope. In the low difference in transparency condition, participants were given the \$1 in an envelope approximately an hour prior to the choice task. In order to enhance the salience of parting with money, participants were asked to take out the \$1 from the envelope which was either in the form of cash or a gift certificate and place it inside their wallets. In the high difference in transparency condition, participants were asked to store the money in their wallets as in the other condition. However, at the time of the choice task, to lower the salience of parting with real money, the difference in form between a gift certificate and cash was highlighted by placing a \$1 bill along with the Starburst candy in front of the participants.

After completing other unrelated experimental tasks, participants came to the front of the room one at a time to hand over their experimental materials and sign out. In all three conditions, participants were given a choice task at the end of the experimental session in which they could either purchase a Starburst with their \$1 or keep their \$1 (exchange their gift certificate for cash in the gift certificate condition or keep their cash in the cash condition). The dependent measure was the average spending per person in the six between-subjects conditions, followed by a categorical analysis of whether or not participants purchased the Starburst with their \$1 or retained their money. The Starburst used in the study cost \$.95 in the cafeteria at the university where the study was conducted.

Results

A 2×3 ANOVA on the average amount spent per condition showed a significant effect of payment form, $F(1, 124) = 14.44, p <$

.01, $\eta^2 = .10$, as well as a form \times salience interaction, $F(2, 124) = 4.51, p < .05, \eta^2 = .07$. The main effect of salience was not significant, $F(2, 124) = 1.74, p > .18, \eta^2 = .03$. Means are graphically presented in Figure 4. Replicating the results of Study 3, an analysis of the means showed that people spent more on average in the gift certificate condition ($M = \$0.49$) than in the \$1 cash condition ($M = \$0.16$). Further, extending Study 3 results, the interaction shows that the difference between the average amount spent in the gift certificate versus the cash condition was present in the control condition, $M_s = \$0.47$ vs. $\$0.10, F(1, 38) = 8.29, p < .01, \eta^2 = .18$, attenuated when people had been given the money at the beginning of the experimental hour in the form of a gift certificate versus cash, $M_s = \$0.24$ vs. $\$0.26, F(1, 34) = .04, p > .85, \eta^2 = .001$, but reappeared when the difference in transparency was increased by making the \$1 bill visually salient at the time of the purchase decision, $M_s = \$0.67$ vs. $\$0.15, F(1, 52) = 20.06, p < .01, \eta^2 = .28$. These results are consistent with those of Study 3.

To examine whether the effect of payment mode also manifests on the likelihood to purchase (vs. the amount spent as examined in Studies 1–3), we analyzed the likelihood of purchasing or saving \$1 as a function of experimental condition. Means are graphically presented in Figure 5. A binary logistic regression with decision to purchase (buy = 1) as the dependent variable, and the interaction between condition context (1 = low transparency where money was given early, 2 = high transparency where money was given early but the \$1 was visible, and 3 = baseline control where the money was given late) and form of the money (1 = gift certificate) as the independent variables was significant (Nagelkerke $R^2 = .06, B = .40, Wald = 5.58, p < .05$).

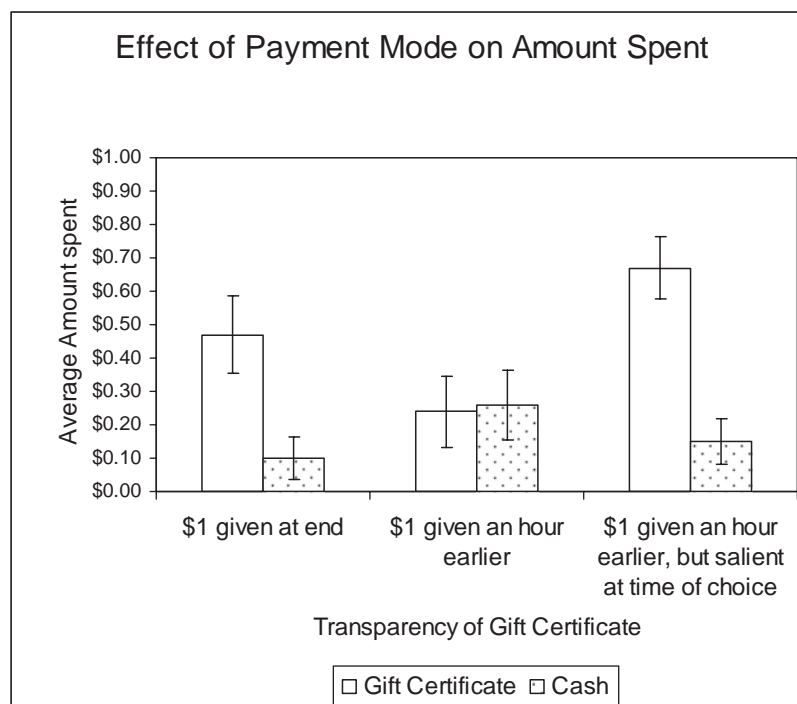


Figure 4. Results of Study 4: The Effect of Spending a gift certificate versus cash as a function of the transparency of the difference in payment modes. Error bars represent standard error of means (standard deviation/ \sqrt{n}).

To understand the nature of the interaction, we cross-tabulated participants' decision to spend or not spend on the Starburst as a function of whether they had received a gift certificate or cash, collapsing across the salience conditions. Participants' spending behavior, as measured by the percentage of participants who spent the \$1 on Starburst candy, was significantly different when the \$1 was in the form of a gift certificate versus cash ($\chi^2 = 15.34, p < .001$). While only 17.6% (12/68) purchased a Starburst in the \$1 cash condition, the proportion of participants who purchased a Starburst increased to 50% (31/62) in the \$1 gift certificate condition. In support of the contention that a gift certificate is more likely to be spent than cash, these data demonstrate that in an actual spending task, participants were more willing to spend the \$1 when it was in the form of a gift certificate than when it was in the form of cash. These results are conceptually consistent with those of Study 3, using likelihood of spending (vs. actual amount estimated) as the dependent variable.

We further expected that the spending difference between the gift certificate and cash would attenuate in the low difference in transparency condition (where the money was given early to enhance the salience of parting with money), but return in the high difference in transparency condition (when despite the money being stored in the wallet for one hour, the context made the difference between the \$1 gift certificate and \$1 cash transparent to lower the salience of parting with real money by visually highlighting the \$1 cash at the time people made their decision to save or spend).

In the baseline control condition when the \$1 was given at the time of the purchase decision, 9.5% (2/21) spent their \$1 on Starburst when it was given in cash, whereas as many as 9/19

(47.4%) spent it when it was in the form of a gift certificate ($\chi^2 = 7.17, p < .05$). However, when participants received their money early and the \$1 bill was not visible there was no difference in spending behavior as a function of payment form as 23.5% (4/17) of the participants in the gift certificate condition purchased a Starburst and 26.3% (5/19) of the participants in the cash condition purchased a Starburst ($\chi^2 = 0.04, ns$). In contrast, when the \$1 bill was visible, despite participants' having received their money early, a higher proportion of participants in the gift certificate condition (66.7% or 18/27) purchased a Starburst than in the cash condition (14.8% or 4/23; $\chi^2 = 15.03, p < .001$). As predicted, while there was no difference in spending when the gift certificate was stored like cash in the wallet for an hour prior to the choice task, the difference in spending reemerged when the context highlighted the difference in transparency between the \$1 gift certificate and \$1 bill.

There is an alternative explanation favoring greater spending of gift certificates than cash when both are stored in the wallet. It is easier for participants in the \$1 cash condition to retain their money as they do not have to take the trouble of taking the money out of their wallet. However, participants in the \$1 gift certificate condition have to take the certificate out of their wallet regardless of whether they are exchanging it for cash or the Starburst. Note that the procedures favor saving cash only in the two conditions where participants were asked to keep their endowment in their wallets, but not in the control condition where participants made a choice almost immediately after receiving the cash or gift certificate. This alternative explanation is examined by contrasting

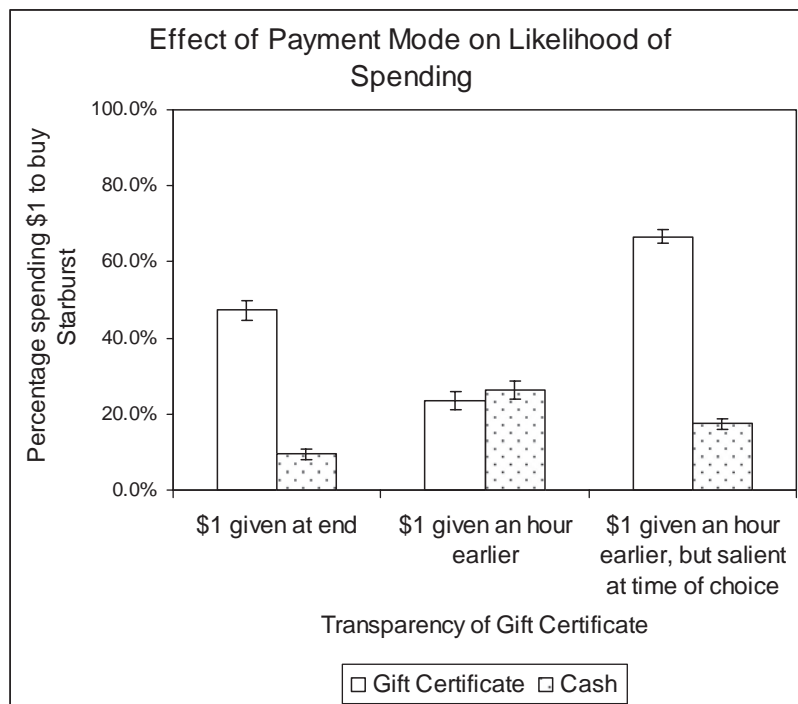


Figure 5. Results of Study 4 on Likelihood of Spending a gift certificate versus cash as a function of the transparency of the difference in payment modes. Error bars represent the standard error of the proportion ($\sqrt{pq/n}$).

spending behavior across the three transparency conditions, after controlling for payment form.

In the gift certificate condition, the proportion of participants who purchased a Starburst varied across the three conditions ($\chi^2 = 7.80, p < .05$). In the control condition, when participants were given the \$1 at the end of the session immediately prior to the choice task, 47% (9/19) chose to purchase a Starburst. However, the proportion of participants who purchased a Starburst reduced to 23.5% (4/17) in the low difference in transparency condition and this proportion increased even beyond the control condition percentage to 67% (18/27, $p > .12$) in the high difference in transparency condition where the \$1 bill was conspicuously visible. The significant difference in spending behavior across the two conditions where the gift certificate had been stored in the wallet (but where the context either made a \$1 bill salient or did not) suggests that while the difference in form was suppressed in the low transparency condition (no \$1 bill visible), it was made salient again in the high transparency condition (\$1 bill visible at the time of making a choice) whereby a gift certificate was treated as play money and was, thus, more likely to be spent than cash.

In contrast, in the cash condition, the proportion of participants who purchased a Starburst did not vary significantly across the three transparency conditions ($\chi^2 = 2.13, p > .34$). In the control condition, 9.5% (2/21) purchased a Starburst, in the low difference in transparency condition this increased to 26.3% (5/19), and in the high difference in transparency condition 14.8% (4/27) spent their \$1. The finding that spending behavior did not vary across the three conditions when the \$1 was given in the form of cash is reassuring because these manipulations were meant to alter the relative transparency of the gift certificate relative to cash. Further, the findings suggest that the \$1 given to participants was not always spent as is the case frequently with a temporary endowment that must be spent (Arkes et al., 1994; Thaler & Johnson, 1990). However, the results may be due to small sample sizes and should be replicated with larger sample sizes prior to drawing any inferences from a null effect.

Discussion

Corroborating the findings of Study 3, Study 4 used an actual spending task to show that people's spending decisions are contingent on payment form. In particular, the manner in which even a \$1, a relatively small amount of money, is saved when it is in the form of cash, but spent when it is in the form of a gift certificate suggests that a less transparent form of money, such as a gift certificate is more likely to be treated as play money and thus more likely to be spent than an equivalent amount of cash. Importantly, Study 4 provides some insights into the underlying reasons for the spending differences across gift certificates and cash. The results show that when the difference in payment form is suppressed, a gift certificate is less likely to be treated as play or monopoly money. As such, there was no difference in spending behavior across the cash and gift certificate conditions when participants were asked to place their endowment in their wallets. However, when the difference in payment form is highlighted, a gift certificate is treated like play money and is thus more likely to be spent (despite the fact that making the \$1 bill visible also draws attention to the fact that the gift certificate can be exchanged for cash). In other words, when the difference in payment form is suppressed,

the salience of parting with real money is higher for gift certificates thus curbing the urge to spend whereas when the difference in payment form is made salient, the salience of parting with real money is lower thus encouraging spending.

General Discussion

Given the proliferation of a variety of payment modes in the marketplace, the primary objective of this research was to examine differences in spending decisions and behavior as a function of payment mode. This research explicitly distinguishes among payment modes that differ in terms of payment coupling and in terms of payment form and argues that relative to paying by cash, other payment modes are less transparent as one does not feel the outflow of money as vividly. The vividness of the money outflow leads to a higher pain of paying with cash than with other less transparent payment modes. In other words, the pain of paying is somewhat dulled by less transparent payment modes such as a gift certificate or credit card thus increasing the likelihood of spending when using these payment modes.

Four studies examined the effect of payment mode on spending decisions and behavior. Studies 1 and 2 examined differences in spending when the payment mode differed in terms of payment coupling and form. Consistent with previous research, both Studies 1 and 2 demonstrated that people are willing to spend (or pay) more when they use a credit card than when using cash. Importantly, the results of both studies suggest that the underlying reason for the differences in spending is, at least, partly due to differences in the pain of paying. Study 1 showed that people who anticipate the future pain of paying were willing to pay less with a credit card than those who do not. Providing more direct support for the contention that pain of paying underlies differences in spending across credit card and cash payment modes, Study 2 showed that the difference in spending was attenuated when the future pain of paying was made salient by having participants estimate total expenses using a piecemeal decomposition strategy.

Studies 3 and 4 examined differences in spending when the payment mode differed only in form. Study 3 showed that consumers tend to spend more when using a \$50 gift certificate than when using \$50 cash. Extending the domain to actual spending, Study 4 showed that people were more likely to spend \$1 which was in the form of a gift certificate than when it was in the form of cash. Importantly, providing insight into the underlying process, Study 4 showed that when individuals were asked to store the gift certificate like cash, the value of the gift certificate was assimilated and the difference in transparency was reduced such that the inclination to spend more with the gift certificate was attenuated. However, the difference manifested itself again when the decision context made the difference in transparency between the gift certificate and cash payment modes salient. Together, the four studies suggest that less transparent payment forms tend to be treated like monopoly money and are hence more easily spent (or parted with).

A possible limitation of Study 4 is that the amount of \$1 used was too low to inflict any pain of paying even in the cash condition. However, the results contradict this notion as participants were clearly reluctant to part with the rather nominal sum of \$1 to purchase a Starburst, particularly when they received the money in the form of cash. Further, the random assignment of participants to

the different conditions makes it unlikely that participants' affinity toward Starburst varied systematically across the conditions. In fact, the results of Study 4 are arguably more compelling because of the observed differences in spending behavior with the relatively small sum of \$1. It is possible that these effects are likely to be stronger for large sums of money that are associated with a higher pain of paying.

From a theoretical perspective, our findings lend support to Prelec and Loewenstein's (1998) idea that paying for goods and services leads to an immediate pain of paying, which is balanced against the anticipated benefits of the goods and services. While making the benefits salient may somewhat blunt the pain of paying, our findings suggest that even less transparent payment modes dulls the pain of paying thus increasing the likelihood to spend. The outflow of money is very vivid when individuals use legal tender such as cash making it painful to part with. In contrast, any payment mode that makes the outflow of money less vivid, and thus less painful, reduces the psychological barrier to spend. Importantly, the results also suggest that contextual variables that make the pain of paying salient serve to reduce the propensity to spend more even when using a less transparent payment mode such as a credit card. Thus, participants in the piecemeal decomposition estimation strategy were made to feel the full extent of the future pain of paying which attenuated the tendency to overspend when using a credit card than when using cash. While the effectiveness of the piecemeal decomposition estimation strategy has been shown in behavioral frequency estimates (Menon, 1997; Raghurir & Srivastava, 2002), Study 2 demonstrates its utility in the context of future expense estimates that have been shown to be based on contextual cues (Menon, Raghurir, & Schwarz, 1997).

Substantively, this research contributes to our understanding of individuals' propensity to spend as a function of payment mode and thus the increase in the variety of different payment modes in the marketplace. For example, American Express in 2004 began focusing on increasing sales of American Express gift cards, the sales of which tripled from the previous year. The Incentive Federation Study of Merchandise and Travel Incentive Users found that gift cards are commonly offered as incentives for salespeople (78%), resellers (57%), consumers (77%), and employees (67%).

From a consumer welfare perspective, our results suggest that individuals are prone to biases in spending when they use nonlegal tender. Treating nonlegal tender as play money leads to overspending that authorities can warn consumers about. In the case of credit cards relative to cash, the actual parting of the money occurs after the purchase decision thereby dulling the pain that is felt in a cash purchase. In fact, the immediate gratification is much more salient relative to the anticipated pain of paying in the future. Srivastava and Raghurir (2002) reported that people recall their cash payments better than their credit card expenses, indicating that the full extent of the pain of paying in the future is also not felt at the time of purchase. To the extent people can be made to anticipate the future pain of paying at the point of purchase, the difference in spending behavior as a function of payment mode is likely to diminish. In the case of gift cards relative to cash, frivolous spending is likely to occur more with a gift card than with cash. Although equivalent in face value, the intrinsic difference in physical form and appearance serves to anesthetize the pain of paying.

The transparency of payment may also affect how people assign consumption activities (or spending) to different accounts (Thaler,

1999). People tend to label both resources and consumption wherein resources may be labeled as regular versus windfall and consumption may be labeled as necessities versus luxuries (Kivetz, 1999; Thaler, 1999). Further, there is a systematic tendency to match mental accounts such that people prefer to pay for their hedonic consumption with unexpected windfall resources (Thaler, 1985). Thaler (1985) noted that hedonically pleasurable luxuries are generally underconsumed because of self-control reasons. Since luxuries are not essential by definition, the pain of paying is likely to be higher when consuming luxuries rather than necessities. However, different payment modes may help balance the pain of paying and the consumption of luxuries versus necessities.

If the pain of paying increases with the transparency of payment mode, cash payments are more likely to be used for justifiable necessities and less likely to be used for frivolous luxuries which may accentuate the pain of paying. In contrast, using a less transparent form of payment such as a credit card or a gift card lowers the vividness with which one feels that one is parting with real money, thereby encouraging spending particularly for hedonically pleasurable luxuries. Thus, the effects noted in Study 3 with utilitarian products may be accentuated with hedonic products. This is suggested as an area for future research.

In the case of credit cards, there are two additional reasons that the pain of paying is dulled. First, the payment is temporally separated from the consumption. Second, credit cards allow mixing of purchases where several purchases are combined into one payment such that a single payment is not attributable to a specific consumption. In sum, the extent to which people match more transparent payment forms to necessities or utilitarian consumption and less transparent payment forms to frivolous luxuries, using cash discourages spending and using a credit card or a gift card encourages spending. Disentangling the transparency versus matching effects of credit card spending for utilitarian and hedonic goods is also suggested as an area for future research.

The matching of payment modes to spending decisions may lead to schemas that people develop over time. A schema refers to cognitive structures of organized prior knowledge that is abstracted from experience over time. Schemas, once developed, guide the processing of new information and the retrieval of stored information. For example, Thaler (1999) noted that over time people come to recognize that consumption of luxuries, within a reasonable range, can enhance the quality of life and often without significantly affecting the ability to fulfill the essential needs. In our context, with experience over time, people may learn and develop schemas about different payment modes and how these may aid in balancing consumption pleasure and the pain of paying. Less transparent payment modes such as a credit card or a gift card, which somewhat dull the pain of paying, are more likely to be associated with free spending and hedonic consumption whereas a transparent payment mode such as cash is more likely to be associated with thriftiness and utilitarian consumption. Identifying the schemas associated with different payment modes is also suggested as an area for future research.

Future research interested in examining these issues could examine differences in spending behavior with larger sums of money and nonstudent populations under more naturalistic conditions than the laboratory experiment environment allows. Further, future research could investigate whether the differences due to the transparency of the money also affect differences in the likelihood

of spending and amount of spending for new payment mechanisms such as prepaid stored value cards, such as those offered by American Express, Visa, phone companies, and many retailers.

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Appendix

Gift Certificate Stimulus Used for Study 4

Gift Certificate
This Certificate entitles the
holder to
\$1.00 (One dollar
only)
Thank you for participating in
the BA 106 Experiment. Please
place the Certificate in your
wallet for the duration of the
study. At the end of the study,
please remember to redeem your
certificate for a \$1.00 note.

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