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The pain of paying with other people's money

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Abstract

Spending decisions are at the heart of consumer research, and factors that impact spending have been studied for many decades. So far, research has focused on spending decisions based on own money. However, people often spend money earned by someone else (e.g., partners spend each other's earned money, government officials spend tax payer money, employees spend employer money, people in need spend social benefits). We take a first step towards understanding how spending depends on who earned the money. We focus on the shortest social distance between consumer and earner -- intra household spending -- and survey 166 couples on how pain of paying from a fixed purchase is affected by who earned the money. Pain of paying regulates consumer spending; the higher the pain, the lower the spending. We find that people feel *higher* pain of paying when spending money earned by their partner, compared to when earned by self, suggesting they might be more frugal with money earned by others. Their pain of paying increases if they believe their partner will be unhappy with their purchases. Their ability to accurately predict the partner's feelings about the purchase increases with partner similarity in spendthriftiness.

JEL-code: D12; D14; D16; D31; D91

Keywords: pain of paying; spending; source of money; someone else's money

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1. **Introduction**

Spending decisions are at the heart of consumer research and have spurred a myriad of studies and multiple strands of literature, spanning decades. For instance, it has been shown that spending depends on "mental accounts" -- consumers create unique mental budgets for expenditure groups (e.g., expenditures for clothes versus expenditures on eating out) and asset types, and willingness to spend varies across such accounts (Thaler 1985; 1990; Prelec and Loewenstein, 1998). Other research shows that the spending is affected by the spending instrument – people spend less with cash than with credit cards (Feinberg, 1986, Prelec and Simester, 2001; Thomas et al., 2010), debit cards (Runnemark et al., 2015), or gift certificates (Raghubir and Srivastava, 2008). Spending has been found to depend on the denomination of money -- large denominations of the same amount of money (e.g., a $100 bill, versus five $20 bills) reduces spending (Mishra et al., 2006; Raghubir and Srivastava, 2009; Vandoros, 2013), as does an appealing physical appearance of the money (Di Muro and Noseworthy, 2012). Other studies show that the way by which money is acquired affects spending. People spend more (or are more generous) with effortlessly earned money, compared to money earned through labor (Cherry et al., 2002; Oxoby and Spraggon, 2008; Dannenberg et al., 2012). They also spend more if money comes unexpectedly (Arkes et al., 1994), and from dividends instead of from capital gains (Baker et al., 2007). Yet other lines of research examine how spending is affected by attention to prices (Hossain and Morgan, 2006; Chetty et al., 2009; Thunström and Jones Ritten, 2019), in-store marketing (Nordfält et al., 2014), the weather (Murray et al., 2010), or consumer traits, such as spendthriftiness (Rick et al., 2008). These topics and studies give us a flavor of the importance assigned to determinants of spending decisions in the consumer research

literature, yet they only represent a fraction of the existing literature, and the list could be made much longer.

To the best of our knowledge, previous studies exclusively examine determinants of spending based on money earned by self (through labor, capital, or other sources of income). However, in many situations, people spend money that they themselves did not earn. For instance, children spend their parents' earned money, people spend their partner's earned money, governments spend tax payer money, and employees spend employer money. On that note, Friedman and Friedman (1990) argued that people are more wasteful with money earned by other people than they are with money they earned themselves, implying that government officials would be wasteful with tax payer money. However, that idea has never been empirically tested.

This study takes a first step towards understanding how spending is affected by who earned the money. Specifically, we examine how pain of paying is affected by the earner. We focus on the shortest possible social distance between spender and earners – spending when money is earned by self versus one's spouse. Pain of paying acts as a proxy for opportunity costs and therefore regulates spending – lower pain of paying leads to higher spending (Prelec and Loewenstein, 1998; Loewenstein and O'Donoghue, 2006; Rick, 2013). In an fMRI experiment, Mazar et al. (2016) find that paying is an affective pain experience. Multiple studies test the underlying idea that it is more painful to pay with cash than with other instruments (credit, debit and gift cards) and consistently find lower spending when purchases are paid for in cash (Feinberg, 1986, Prelec and Simester, 2001; Raghubir and Srivastava, 2008; Thomas et al., 2010; Runnemark et al., 2015). Similarly, it is implicit in Milton and Rose Friedman's idea about

people being more wasteful with money earned by others that pain of paying is lower when spending money earned by others, compared to when spending self earned money.

We survey 166 couples, recruited by the survey company Qualtrics, about their pain of paying from a fixed purchase, i.e., we hold the type and amount of purchase constant (a $300 smart phone), and vary the source of money (earner, as well as individual versus joint financial account). Given that consumption itself is held constant, any difference in enjoyment from the purchase when made with self earned versus with partner earned money should arise from differences in pain of paying.

It is an empirical question how people's pain of paying depends on who earned the money. People might experience less pain of paying when spending money earned by someone else, if that money is perceived as easy come (Cherry et al., 2002; Oxoby and Spraggon, 2008; Dannenberg et al., 2012). On the other hand, studies show property rights to money matters to people's willingness to claim money – if someone else earned the money, people are less willing to claim the money for themselves, even when free to do so (Oxoby and Spraggon, 2008; Korenok et al., 2017). Similarly, people might feel less entitled to money earned by someone else, which might imply higher pain of paying when spending someone else's earned money.

We expect people's pain of paying to be affected by beliefs about the spouse's feelings about the purchase, for two reasons: out of altruism (i.e., genuine care for the spouse's feelings), and to avoid discomfort caused by an unhappy spouse. We hypothesize that the spouse's feelings about the purchase are particularly important to one's own pain of paying when property rights of the money are particularly weak, as when the spouse earned the money and when the money comes from a joint (rather than an individual) financial account. In our analysis, we therefore vary not only who earns the money (self or partner), but also the type of account (joint or individual) from

which the money is pulled. However, even if a person cares about the spouse's feelings, he/she may not accurately predict those feelings. We therefore extend our scope to examine how those beliefs are formed.

Previous research on biased predictions of emotions suggests that people accurately predict the type of emotion they themselves will experience, and whether it will be positive or negative, when faced with familiar scenarios (see Wilson and Gilbert, 2003, for a literature review on predicting own emotions). The scenario faced by our participants is likely familiar, given 81 percent of Americans own a smart phone (Pew Research Center, 2019); this suggests that participants are highly familiar with the good and also likely at some point made a smart phone purchase. However, even in familiar scenarios, people generally overestimate the *intensity* of their emotions (Rachman and Arntz, 1991; Rachman, 1994; Schmidt et al., 1994; Mitchell et al., 1997; Sieff et al., 1999; Schkade and Kahneman, 1998; Buehler and McFarland, 2001; Gilbert et al., 2002; Hoerger et al., 2010). Research about people's accuracy in estimating other people's emotions is scarcer, but existing evidence shows that people similarly accurately predict the type of emotion, but overestimate the intensity of emotions, when making forecasts of other people's emotions. Pollman and Finkenauer (2009) find the magnitude of overestimation is the same when making forecasts of own emotions and when making forecasts of a friend's, or even a stranger's, emotions. Green et al. (2013) find an overestimation bias in their prediction of both own emotions and partner emotions, resulting from changes in the relationship. The hypothetical nature of our data might therefore inflate the intensity of the pain of paying. However, we are only interested in knowing if there is a *difference* in the intensity of emotions felt when spending self earned versus partner earned money, such that overestimation of emotional intensity only biases our results if people unequally overestimate their emotions across spending from different

sources of money. We find no reason to believe that would be the case, but we cannot test for any such asymmetric overestimation of emotional intensity.

Our study relates to the literature on preference prediction.[1] Evidence suggests that predicting other people's preferences is often difficult, even when social distance is short. In fact, even with virtually no social distance at all and minimal uncertainty about context and goods, predicting preferences may be difficult. Thunström et al. (2015) find people have a hard time predicting their own preferences just a week ahead, within a known context and limited choice set of familiar snacks. Poon et al. (2014) find biases in self-predictions are largely due to people using current intentions to predict future preferences. Other studies find that people have difficulties accurately predicting their partner's product attribute preferences (Davis et al., 1986; Lerouge and Warlop, 2006). Kenny and Acitelli (2001) find that people were more likely to base their predictions on their partner's beliefs on own attitudes, compared to on information pertaining to the partner.

A number of studies examine factors that may affect the precision by which people predict others' preferences. Scheibehenne et al. (2011) find partner similarity increases the accuracy of partner preference predictions. Mata et al. (2008) look at a different close relationship, and find

[1] More distantly, our study relates to the extensive literature that examines how people choose for someone else, when the decision affects the other person's resources. Studies show that people are less loss averse when deciding for others (Pahlke et al., 2012; Polman, 2012; Andersson et al., 2014; Füllbrunn and Luhan, 2017). Numerous studies find that risk preferences may differ when making decisions for self versus for others (Charness and Jackson, 2009; Reynolds et al., 2009; Eriksen and Kvaløy, 2010; Chakravarty et al., 2011; Agranov et al., 2014; Pollmann et al., 2014; Pahlke et al., 2015; Füllbrunn and Luhan, 2017; Polman and Wu, 2019). However, the direction of risk taking differs across studies -- some find people are more risk averse when making decisions for others, while others find they are more risk loving. Other studies find no difference in risk preferences across decisions for self and others. Ifcher and Zarghamee (2019) find willingness-to-pay for goods and charity donations may be higher when making decisions for others, versus for self, and Lu et al. (2016) find people are more likely to choose hedonic goods for others and utilitarian goods for self. Other studies examine differences in identifiable-victim bias (Kogut and Beyth-Maron, 2008) and ambiguity aversion (König-Kersting and Trautmann, 2016) across decisions for self versus others, but find no such differences. Although related to this literature, our study distinctly differs, given we focus only on people's utility from consumption for *self*, while varying the source of money.

parents are highly accurate in predicting their children's food preferences. Swann and Gill (1997) find that length of relationship does not matter to the prediction accuracy of the partner's beliefs. Scheibehenne et al. (2011) find partner preference predictions may even get worse with the length of the relationship. Other studies find that learning opportunities about others' preferences matter – new information decreases the tendency to assume others' preferences are the same as your own (West, 1996). Further, partner attitudes may align over time (Davis and Rusbult, 2001), which might reduce inaccuracy in partner's preferences, even if predictions are largely based on own attitudes.

We find that people feel more pain of paying when spending partner earned money, compared to when spending self earned money. People are also happier if their partner spends the partner's own earned money, compared to self earned money. Further, people care about their partner's feelings, both when spending self earned and partner earned money – their own pain of paying from a purchase increases if they believe their partner will be unhappy about the purchase, and this pain is especially pronounced when spending the partner's earned money. When forming their beliefs about their partner's feelings about the purchase, people in part project their own feelings about the purchase onto their partner. The partner's actual feelings matter too, suggesting people are, at least partly, able to accurately predict their partner's feelings about their spending. The accuracy by which a person is able to predict their partner's feelings about the purchase increases with partner similarity in spendthriftiness.

2. Survey design and data

We recruited 166 couples via the survey company Qualtrics, to participate in a survey designed to elicit how people feel about spending money earned by their partners, versus money

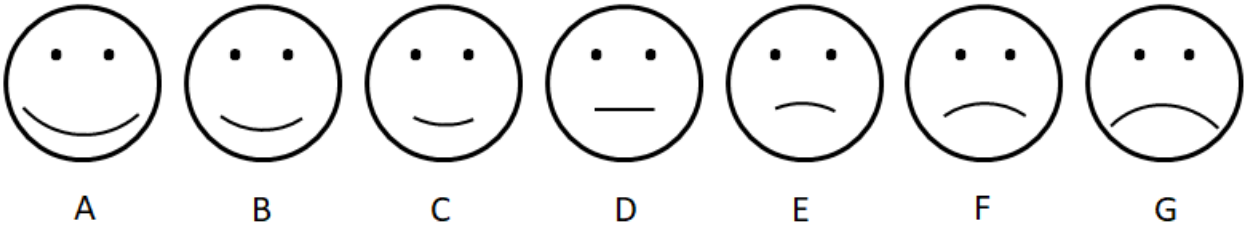
earned by themselves; how they think their partners feel about them spending money earned by the partners or themselves; and how they would feel if their partners spent money on him-/herself. Subjects received the standard Qualtrics payment for survey participation.

Although recruitment from Qualtrics is more expensive than other online panels often used in decision making research, recruitment from Qualtrics enables us to avoid some common data quality issues often observed in other online panels, such as false reporting of demographics and high prevalence of professional survey takers (e.g., Chandler and Paolacci, 2017; Sharpe Wessling et al., 2017). Qualtrics performs continuous quality checks of subjects.

All respondents were asked about their feelings from a $300 smartphone purchase. They answered both a "self-evaluating" and a "partner-evaluating" question. For the self-evaluating question, respondents rated how they feel about the purchase when the money is either self- or partner-earned and comes from either an individual or a joint financial account. Feelings were elicited using a pain-scale ranging from a smiley face to a frowny face (Thunström et al., 2018; Thunström, 2019). Specifically, participants were faced with the following self-evaluating question:

Suppose that you and your partner both work and earn about the same amount of money. Your partner may either put his/her earned money in a joint account that you share, or in your individual account for your use.

Now imagine that you have a smartphone, but decide you want to upgrade. ***You*** are buying a new expensive smartphone for $300. Please indicate ***how you feel*** about the $300 smartphone purchase in each scenario below, stating the letter (A-G) that best corresponds to your feelings.



The money to pay for the smartphone comes from:

your individual account and was **earned by you.**	▼ A ... G
your joint account and was **earned by you.**	▼ A ... G
your individual account and was **earned by your partner**.	▼ A ... G
your joint account and was **earned by your partner**.	▼ A ... G
a winning lottery ticket that **you bought**.	▼ A ... G
a winning lottery ticket that **your partner bought**.	▼ A ... G

Given the purchase (i.e., a $300 smart phone) was kept constant across all scenarios, any observed change in feelings from the purchase across earners or accounts can be attributed to changes in the pain of paying. Also, we aimed to eliminate any potential differences in pain of paying across earners that might originate from income inequality, by asking our couples to imagine they earn the same amount of money as their partner (it might be more painful to spend money from someone of relatively low income, both because entitlement to money might be affected by income inequality and because of the higher marginal disutility to a low income earner from giving up money). We coded the responses to the pain scale using numbers from one

to seven, with one representing the happiest smiley face and seven representing the saddest frowny face. In other words, higher numbers correspond to higher pain of paying.

We used a similar question to elicit people's beliefs about their partners' pain from their purchase. For the partner-evaluating question, respondents answered a similar question eliciting how they would feel about *their partner* making the same $300 smart phone purchase (for the partner), across money earned by self or partner, pulled from either individual or joint accounts.

We also elicited self-control, following Tangney et al. (2004), spendthriftiness, following Rick et al. (2011), and risk preferences, following Eckel and Grossman (2002). Finally, we elicited a set of covariates: gender, age, income, intra household income distribution, and length of relationship. Table 1 provides descriptive statistics on these covariates.

Table 1. Summary Statistics

	N	Mean	Std. Dev.	Min	Max
Female	332	.503	.501	0	1
Age (years)	329	50.2	12.9	22	82
Income (annual, in USD)	332	52,786.5	45,009.3	12,500	212,500.5
Share household expenses (%)	331	53.3	29.0	0	100
Relationship length (years)	332	22.5	12.4	3	52

The variable "Female" takes the value one if female, zero if male. Most of our couples consist of a male and a female, such that the mean of the gender variable is close to 0.5. Participants stated their age based on 19 five-year-wide age categories (starting with "Under 5 years" and ending with "90 years or over"), and they were assigned an age equal to the midpoint of their age category. No subject recorded an age under 20 or over 84. Table 1 shows the average age in our sample is around 50 years. Participants stated their income based on thirteen $25,000-

wide income categories, ranging from $0-$25,000 to $300,001+. They were assigned an income equal to the midpoint of their income category (no participants reported incomes in the highest four categories, so we assume that the midpoint of the ninth category is the upper limit). Table 1 shows the average income in our sample is around $50,000. We also asked participants how much of total household expenses are covered by them (as opposed to their partner), in a typical month. On average, they cover half of the household expenses, as implied by "Share household expenses" being close to 50. The "Length" variable is a continuous variable based on the number of years an individual has been in a relationship with her partner or spouse. The shortest relationship length in the sample is three years while the longest relationship length in the sample is 52 years. For details on all data collected, see the survey instrument in Appendix.

3. Results

In our results section, we aim to answer three questions. How does a person's pain of paying depend on the source from which the money comes from? What explains any difference in pain of paying across source of money? And, given that the answer to the last question is beliefs about the partner's feelings about the purchase, how are beliefs about the partner's feelings formed, and is accuracy of beliefs affected by partner similarity?

3.1. Pain of paying is higher when spending the partner's earned money

We examine how a person's pain of paying depends on the source of money, with the source varying across both the earner of the money (self or partner) and the type of financial account (individual or joint). We are primarily interested in two comparisons: a comparison of pain of

paying across earner while holding the type of account fixed, and a comparison of pain of paying across account while holding earner fixed.

Figure 1 shows how the pain of paying from the $300 smart phone purchase differs across self-earned money and partner-earned money, both if the money for the purchase is spent from an individual financial account and if the money is spent from a joint financial account. Each violin shows the full distribution of participants' responses to the pain scale for a specific source of money, and higher values correspond to higher pain. Overlaid the violins are the mean values of pain of paying and 95 percent confidence intervals. To facilitate visual comparisons of the means, we added lines to Figure 1 that connect the mean values we are interested in comparing.

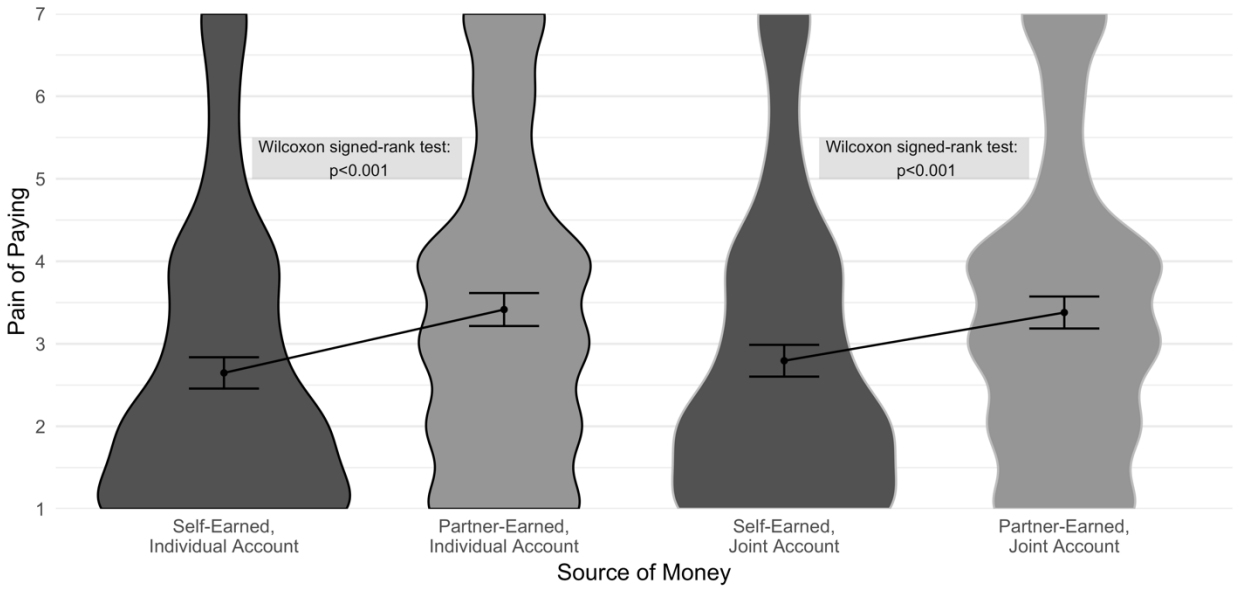


Figure 1. Pain of paying from own spending, by source of money

As shown by Figure 1, the mean value of the pain of paying when spending self-earned money is significantly lower than the mean value of pain of paying when spending partner earned money, both when the money comes from an individual financial account (comparing the

two violins to the left) and when the money comes from a joint account (comparing the two violins to the right).

We also note from the violin plots in Figure 1 that the density of responses is concentrated towards lower values of the pain scale (respondents overall feel good about the smart phone purchase). This suggests our pain scale data is non-normally distributed, such that non-parametric tests, which do not require normally distributed data, are appropriate when analyzing our data. We therefore supplement our mean comparisons by testing for differences in the distribution of pain scale values with Wilcoxon signed-rank tests. The *p*-values generated by these tests are less than 0.001, suggesting highly significant differences in the medians of the pain scale values across self-earned and partner earned money.[2] Our main finding is that people *feel worse* spending someone else's earned money, compared to spending their self earned money.

Whether the money comes from an individual or joint financial account also matters to the pain of paying, but only if the money is self-earned. If the money is partner-earned, we cannot reject the hypothesis that the pain of paying is the same, regardless of if the money comes from an individual financial account or a joint financial account. This is implied by a Wilcoxon signed-rank test that compares the distributions of the pain scale data between the second and fourth violins (p=0.318). Even though the confidence intervals for the first and third violins overlap in Figure 1, a Wilcoxon signed-rank test suggests the distributions differ (p=0.016).[3] A

[2] Focusing specifically on Likert scale data (i.e., the type of data generated by our pain scale), Meek et al. (2007) compare the performance of one-sample *t*-tests to Wilcoxon signed rank tests in small samples when the t-test's assumptions are violated. On their simulated Likert scale data, they found that the *t*-test outperformed the Wilcoxon signed rank test along some dimensions (e.g.. while the *t*-test had a higher Type I error rate, it had a lower Type II error rate, compared to the Wilcoxon signed rank test). For robustness, we therefore analyzed the data using *t*-tests as well. The results from the *t*-tests confirm the results from the signed rank tests, throughout the paper.
[3] Consistent with this result, a *t*-test implies that the means are significantly different (p=0.032).

person finds it more painful to spend self-earned money from a joint account than to spend self-earned money from the person's individual account. This is consistent with the idea that people feel more entitled to money deposited in their individual account, compared to when the money is part of a joint account.

Survey participants were also asked partner-evaluating questions in which they reported how they feel about their partner undertaking the same $300 smartphone purchase, across different sources of money. We examine that data to see if people experience similar differences in pain of paying across money sources when it is their partner, rather than they themselves, who undertakes the spending. We find that they do. Figure 2 shows people's pain when their partner spends from different sources. The 95 percent confidence intervals of these means do not overlap across the violins of main interest, and Wilcoxon signed-rank tests show that the differences in distributions across those violins are also highly significant ($p<0.001$). Figure 2 shows that a person finds it more painful when her partner spends money that was earned by her than when her partner spends money that was earned by the partner. In other words, people feel more pain spending their partners' earned money than their own (Figure 1), and they feel more pain when their partners spend their earned money than their partner's earned money (Figure 2).

We tested whether gender affects these results. Using Mann-Whitney U tests, we found no statistically significant differences in pain of paying by gender among any of the eight pain of paying variables in Figures 1 and 2.

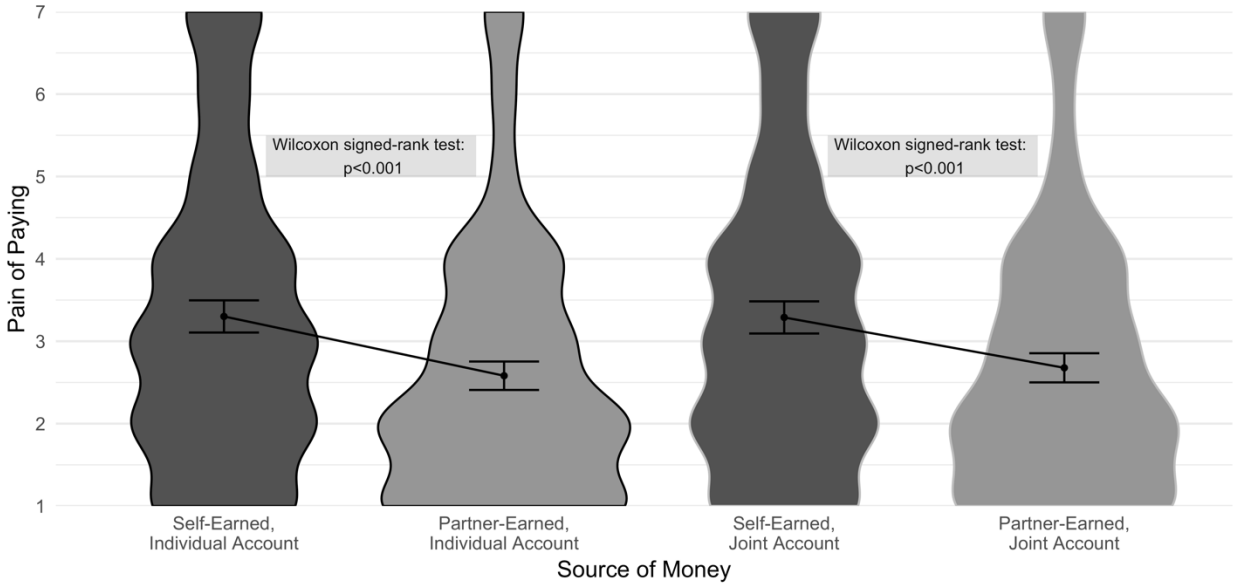


Figure 2. Pain of paying from partner's spending, by source of money

3.2. Beliefs about partner's feelings matter more when spending partner earned money

Next, we examine what explains the difference in pain of paying between spending self-earned and partner-earned money. We hypothesize that when the money is partner-earned, such that people feel less entitled to the money, the partner's feelings about the spending are more important. To test this hypothesis, we regress a person's difference in pain of paying between self-earned and partner earned money on a set of variables representing the partner's feelings about the purchase: the person's beliefs about their partner's feelings about the spending (A's belief of B's pain from A's spending), the partner's actual pain from the spending (B's pain from A's spending), the person's actual pain experienced if it were the partner that undertook the spending (A's pain from B's spending), and the person's beliefs about how the partner would

feel if it were the partner who undertook the spending (A's belief of B's pain from B's spending).[4]

Table 2 shows that the difference in pain of paying from spending self earned money, compared to partner earned money, is explained by a person's beliefs about how their partner feels about the spending. This result holds irrespective of if the money is spent from an individual or joint financial account. Hence, we find that when entitlement to the money decreases, the partner's feelings about the spending becomes more important. However, Table 2 also shows that it is the *belief* about the partner's feelings that matters, not the partner's actual feelings.

Table 2. Determinants of the difference in pain of paying across earners

	Individual Account	Joint Account
Explanatory variables	Dependent variable	
Difference by earner in:	Difference by earner in A's pain from A's spending	
A's belief of B's pain from A's spending	0.52***	0.38***
	(0.083)	(0.084)
B's pain from A's spending	0.048	0.15
	(0.083)	(0.097)
A's pain from B's spending	0.077	-0.076
	(0.090)	(0.100)
A's belief of B's pain from B's spending	0.11	0.097
	(0.092)	(0.11)

[4] By "actual pain," we mean the pain a person stated that she would feel in our survey. For instance, "A's pain from B's spending" is the pain scale value a person (person A) gave to indicate how she would feel if her partner (Person B) undertook the smart phone purchase, while "B's pain from A's spending" is the pain scale value her partner (person B) gave to indicate how the partner would feel if she (person A) undertook the purchase. We assume that a person better knows their own actual feelings than does their partner, such that own statements about own feelings represent "true" feelings.

Intercept	0.26**	0.27**
	(0.10)	(0.092)
N	332	332
R^2	0.289	0.199

Difference by earner in:	Difference by earner in A's pain from B's spending	
A's belief of B's pain from B's spending	0.45***	0.59***
	(0.087)	(0.085)
B's pain from B's spending	0.031	0.056
	(0.060)	(0.068)
A's pain from A's spending	0.045	-0.047
	(0.057)	(0.059)
A's belief of B's pain from A's spending	0.13†	0.071
	(0.074)	(0.062)
Intercept	0.35***	0.31***
	(0.10)	(0.075)
N	332	332
R^2	0.299	0.388

Robust standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

3.3. Beliefs about partner's feelings are based on the partner's actual feelings and own feelings

Given that we find beliefs about the partner's feelings determine the increased pain of paying from spending someone else's earned money, we are interested in knowing how those beliefs are formed. Are the beliefs about the partner's feelings about the purchase based on actual information, or are they likely to be highly biased? To answer this question, we examine the determinants of variable "A's belief of B's pain from A's spending."

We regress a person's beliefs about how her partner feels about the $300 smart phone purchase (variable A's belief of B's pain from A's spending) on (1) the partner's actual feelings about the person's spending (B's pain from A's spending), (2) the person's own feelings about the spending (A's pain from A's spending), and (3) the person's feelings about her partner undertaking an identical spending from the same source (A's pain from B's spending). Table 3 shows the results.

Table 3. Determinants of our beliefs about how our partner feels about our spending

	Self-Earned		Partner-Earned	
	Individual Account	Joint Account	Individual Account	Joint Account
B's pain from A's spending	0.17***	0.22***	0.31***	0.17***
	(0.049)	(0.050)	(0.046)	(0.049)
A's pain from A's spending	0.54***	0.35***	0.39***	0.46***
	(0.048)	(0.049)	(0.047)	(0.048)
A's pain from B's spending	0.21***	0.27***	0.22***	0.30***
	(0.054)	(0.055)	(0.051)	(0.051)
Intercept	0.38**	0.49**	0.44*	0.30
	(0.14)	(0.15)	(0.17)	(0.17)
N	332	332	332	332
R^2	0.563	0.472	0.539	0.545

Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

The coefficients on all three regressors are positive and highly significant across all types of money sources, suggesting people base their beliefs about how their partners feel about their purchase on a mix of all three of these variables, i.e., a mix of how the partner actually feels, how they themselves feel about the purchase, and how they would feel if their partner undertook the same purchase. Across all sources of money, the largest coefficient is the individual's own

feelings about her purchase (A's pain from A's spending), implying that people form their beliefs about how their partners feel about their purchase primarily based on how they themselves feel about the purchase.

The partner's actual feelings about the purchase (B's pain from A's spending) are important too, but these coefficients are smaller. The relative difference of the two coefficients (A's pain from A's spending vs. B's pain from A's spending) differs across source. For example, in the self-earned individual account regression, the coefficient for B's pain from A's spending is less than a third of the size of the coefficient for A's pain of A's spending. On the other hand, in the partner-earned individual account regression, the coefficient on B's pain of A's spending is almost 80 percent of the size of the coefficient on A's pain of A's spending. This implies that people's beliefs about their partner's feelings about their purchase are least influenced by their partner's actual feelings when a purchase is made with self-earned individual account money. Hence, people might form more self-serving beliefs about their partner's feelings about their purchase when they feel more entitled to the money, i.e., when the spending is pulled from self-earned individual account money.

Table 3 shows that a person's belief about her partner's feelings about her spending is also influenced by the person's feelings about her partner undertaking an identical purchase from the same source (A's pain from B's spending). Hence, the person seems to imagine that her partner would emotionally react the same to her purchase as she would to her partner's purchase. This indicates that people are substituting their own feelings when forming beliefs about their partner's feelings. This could occur because people are not certain about their partner's true feelings or it could be self-serving – people feel better about their own purchase if they believe their partner also feels good about the purchase. These results are consistent with previous

findings that people are more likely to base their predictions of their partner's beliefs on their own attitudes, as compared to on information pertaining to their partner (Kenny and Acitelli, 2001). However, we find that the partner's actual feelings matter too, meaning that people are, to some extent, able to accurately predict their partner's feelings about their purchase and account for those true feelings.

Finally, we explore factors that might improve the accuracy by which people predict their partner's feelings about their spending. Scheibehenne et al. (2011) find that partner similarity increases the accuracy of partner preference predictions while relationship length might instead decrease the accuracy. We explore if these factors affect the precision by which people predict their partner's feelings. To do so, we regress the absolute difference between a person's predictions and the partner's stated feelings about the purchase on the absolute difference in the partners' spendthriftiness, self-control, and risk preferences, as well as on gender and length of relationship. Table 4 shows the results across different sources of money.

Table 4. Does partner similarity increase accuracy of beliefs (self's belief of partner's pain from self's spending)?

	Self-Earned		Partner-Earned	
	Individual Account	Joint Account	Individual Account	Joint Account
Difference in self-control	-0.01	-0.01	-0.01	-0.02
	(0.012)	(0.011)	(0.011)	(0.012)
Difference in spendthriftiness	0.15*	0.19**	0.20**	0.17*
	(0.073)	(0.068)	(0.069)	(0.072)
Difference in risk preferences	0.16**	0.09	0.10	0.10
	(0.056)	(0.053)	(0.053)	(0.056)
Female	-0.07	0.06	0.23	0.14
	(0.15)	(0.14)	(0.14)	(0.14)

Length	-0.01	-0.01	-0.01	-0.00
	(0.006)	(0.006)	(0.006)	(0.006)
Intercept	1.01***	1.01***	0.87***	1.07***
	(0.20)	(0.19)	(0.19)	(0.20)
N	332	332	332	332
R^2	0.041	0.037	0.049	0.032

Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Positive and statistically significant coefficients for partner differences in self-control, spendthriftiness, and risk preferences would suggest that increased similarity in spending-related preferences increases the accuracy of the partner's feelings about own spending. We find that similarity in spendthriftiness increases the accuracy by which a person predicts their partner's feelings about the person's own spending. This result holds across all sources of money. Our ability to predict our partner's feelings about own spending might therefore be hampered by our tendency to partner with people who differ from us in spendthriftiness. Specifically, Rick et al. (2011) find people typically marry people who are unlike themselves in spendthriftiness (e.g., spendthrifts marry tightwads). In our sample too, we find, using several tests, that partners are significantly different in their spendthriftiness.[5]

We find no effect on prediction accuracy from differences in self-control: estimated coefficients are both small and negative (i.e., of the "wrong" sign). We find an effect of similarities in risk preferences only when money is earned by self and spent from an individual account. Similar to Scheibehenne et al. (2011), we do not detect an effect of relationship length –

[5] A t-test and a Wilcoxon signed-rank test both reject equal spendthriftiness between partners with *p*-values below 0.001. Similar to Rick et al. (2008), we also binned respondents into high, medium, and low spendthriftiness scores, and we found that only 45 percent of couples have both partners in the same bin. In addition, we reject that partners are the same in self-control and risk preferences (two-sided *t*-tests and Wilcoxon signed-rank tests both generate *p*-values below 0.001 for both measures).

not only does the coefficient for relationship length vary in sign across sources of money, it is small and far from statistically significant at conventional significance levels. We encourage future research to further explore determinants of accuracy in predictions of partners' feelings.

4. **Discussion**

In this study, we take a first step towards understanding how pain of paying is affected by people spending someone else's earned money. Specifically, we examine how a person's pain of paying is affected by who earned the money – self or partner. Pain of paying acts as a proxy for the opportunity cost of consumption and therefore regulates consumer spending; the higher the pain of paying, the lower the spending (Prelec and Loewenstein, 1998; Loewenstein and O'Donoghue, 2006; Rick, 2013). We find that who the earner is matters – people feel significantly lower pain of paying when spending money earned by self, compared to when spending money earned by their partner. We cannot reject that this effect is the same for both men and women. A plausible explanation for this result is that people feel more entitled to money they earned themselves, which decreases the pain of paying.

We find that the pain of paying differs when spending the partner's earned money, compared to self-earned money, because the partner's feelings about the spending matters more. This implies partners may regulate each others' spending, at least if the beliefs about the partner's feelings are accurate. We find that is at least partly the case -- some of the beliefs about the partner's feelings are based on the partner's actual feelings about the purchase, although the most important basis for beliefs about the partner's feelings are based on own feelings about the purchase (people project their feelings onto their partner). It might therefore not be too surprising

that we also find the accuracy by which a person is able to predict their partner's feelings about the person's spending increases with partner similarity in spendthriftiness.

Further, our results imply that a two-income household that would like to reduce spending might structure their finances such that much of their joint income is spent out of a joint account, rather than individual accounts. If the goal is instead to minimize pain of paying (maximize spending), both spouses should primarily spend their self earned money. This is supported by our finding that people also prefer their partner to spend partner earned money. This might pose a challenge for households with either a single income, or uneven income across partners (perhaps due to division of labor -- one spouse is mainly responsible for taking care of the family and household, the other for earning money). The pain of paying measured in our study importantly relies on a hypothetical scenario where both spouses earn about the same income. It is entirely possible that income inequality affects the pain of paying from spending someone else's earned money. For instance, experimental studies show that people dislike very unequal income distributions – they are "inequity averse" (see Cooper and Kagel, 2016, for a review). This might mean that entitlement to money is enhanced when spending someone else's money, if that someone else has a substantially higher income. How income inequality affects pain of paying when spending someone else's money seems worthy of future explorations.

Our study offers preliminary insights into how pain of paying is affected by who earned the money. It shows that who earns the money may significantly affect the welfare derived from spending, in ways previously not understood. We find that people feel *more* pain when spending money earned by someone else, compared to when earned by self. Our finding that pain of paying is affected by the earner of the money is significant given the multitude of occasions on which people spend money earned by someone else. In this study, we examine intra household

spending. Other examples of when people spend other people's earned money are government officials spending tax payer money, employees spending employer money, and people in need spending social benefits.

Given pain of paying regulates spending, our finding that people feel more pain when spending partner earned money seems to contradict Milton and Rose Friedman's idea (1990) that people are more wasteful with others' money, compared to own money. Our results may, however, be limited to the particular context of our study: spending decisions in households. Partners can give each other feedback on spending decisions, which might motivate people to care about their partners' feelings about the spending. Further, even if we would care the same for the earner's feelings when spending money earned by someone more socially distant, the bias in predictions of others' feelings and preferences varies with social distance (e.g., Hsee and Weber, 1997; Barasz et al., 2016; Rauckman et al., 2019). We encourage future research to examine if our results hold up across context and social distance, as well as future research in other avenues to help better understand how pain of paying, and spending, are affected by who earned the money.

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