Thinking About Financial Deprivation: Rumination and Decision Making Among the Poor

Gita Johar, Columbia University, USA
Rachel Meng, Columbia University, USA
Keith Wilcox, Columbia University, USA

We examine the role of rumination on decision making among the financially poor. Results from two studies suggest that lower-income individuals tend to ruminate more on their financial concerns. Such rumination leads to increased impulsivity and impaired cognitive performance among the poor compared to the well-off.

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Understanding and Overcoming Financial Challenges: Process Insights, Pitfalls, and Recommendations

Chair: Rachel Meng, Columbia University, USA
Eesha Sharma, Dartmouth College, USA

Paper #1: Poverty as Helplessness: How Loss of Control Affects Impulsivity and Risk-Taking
Ayelet Gneezy, University of California San Diego, USA
Alex Imas, Carnegie Mellon University, USA

EXTENDED ABSTRACT
Research has shown that individuals living in poverty display greater impatience and elevated valuation of high-risk prospects such as lottery tickets, leading to choices that further undermine their chances to emerge from poverty (Lawrence 1991; Haisley, Mostafa, and Loewenstein 2008; Lynch and Zauberman 2006). One line of research posits that the poor are mired in a “culture of poverty” in which biased preferences and deviant values such as myopia and increased risk-seeking cause them to become, and remain, poor (Banfield 1970; Lewis 1970). However, recent work suggests that it is the state of living in poverty that changes individuals’ preferences and behavior (Mani et al. 2013; Vohs 2013). In outlining a mechanism for how poverty shapes preferences, Rabow, Berkman and Kessler (1983) argue that feelings of helplessness endemic to living in poverty give rise to the elevated levels of impatience and risk-seeking the poor often display.

The helplessness theory of poverty suggests that the scarcity inherent in being poor severely restricts individuals’ choice sets, resulting in a loss of agency and feelings of not being in control of one’s life. This state of helplessness increases impulsivity and risk-seeking that drive suboptimal decisions such as buying lottery tickets, gambling, and taking payday (Kane 1987). The result is a grim cycle in which individuals’ choices further reinforce their abject states, creating poverty traps in which those who become poor stay poor. However, although helplessness is often comorbid with an increased preference for immediate rewards and high-risk prospects, studies have yet to establish the causal link between these constructs—critical for the helplessness account of poverty. This paper combines insights from marketing, sociology and behavioral economics to present the first causal evidence for the role of helplessness in relative greater discounting of the future and increased preference for high-risk rewards.

We first establish a link between low income and an increased sense of helplessness using a large data set from the World Values Survey comprised of 60,094 individuals from 48 countries. To capture sense of helplessness, we used participants’ responses to the question of how much free choice and control they have over their lives. We used responses on income class as a measure of relative income. Running a fixed-effects regression of the helplessness measure on relative income, our analysis revealed the predicted significant relationship between income and helplessness, with poorer individuals reporting feelings of having less control over their lives (β = - .31; p < .001).

To first demonstrate a relationship between poverty and impatience, we elicited and compared the discount rates of poorer individuals and those who are financially better off. The first group
comprised of unemployed individuals approached around an unemployment-benefits center in City Heights, a low-income neighborhood in Southern California. The second group comprised of employed individuals in the same area. We elicited time preferences by having participants respond to a series of 27 hypothetical choices between receiving a smaller amount now or a larger amount later (Kirby, Petry, and Bickel 1999). Indeed, the unemployed individuals displayed greater impulsivity, choosing the smaller-sooner reward on average 61% of the time, whereas the employed individuals from the same low-income neighborhood chose the smaller-sooner reward 48% of the time ($p<.03$). Estimating parameter $k$ of a hyperbolic discounting function revealed that unemployed individuals discounted the future to a significantly greater extent than the employed group ($mean k=.020 \text{ vs. } .008$, respectively; $p=.015$).

To directly test the effect of helplessness on time preferences, we manipulated sense of control over an offensive stimulus in a standard laboratory subject pool and then elicited their time discount rates. Using a novel experimental paradigm based on the classic learned helplessness studies (Alloy and Abramson 1982; Hiroto and Seligman 1975), we induced helplessness by exposing participants to aversive, uncontrollable noise, and empowered about half of them with the option to control the noise, thereby increasing their sense of control. Critically, we made the ability to exercise control costly, discouraging empowered participants from actually changing the level of noise, resulting in helpless and empowered participants experiencing the same aversive stimulus. After being exposed to the noise, we elicited time preferences using the same set of 27 choices over time. Our analyses revealed that inducing helplessness exogenously generated a similar shift in time preferences as financial scarcity: those in the Helpless treatment chose the smaller-sooner reward 60% of the time, whereas Empowered participants chose it only 50% of the time, $p=.002$. The mean hyperbolic discounting parameter $k$ of the Helpless group ($M=.015$) was significantly higher than that of the Empowered group ($M=.007$; $SD=.01$), $p<.01$.

Similar to the first study, we sought to demonstrate a link between low income and greater risk-seeking by eliciting valuations of high-risk, high-reward prospects from two groups of individuals that differed in their level of wealth. The first group comprised of unemployed individuals approached in a low-income neighborhood in Pittsburgh (PA) and the second group comprised of employed individuals in the same neighborhood. We elicited participants’ willingness to pay for either a high-risk prospect or a low-risk prospect, each with the same large reward. Adopting the protocol of Rottenstreich and Hsee (2001), the gamble was either a 1% or a 99% chance of winning a European vacation. Indeed, unemployed individuals reported a significantly higher willingness to pay for the high-risk lottery ($M=24.31$) than the employed individuals ($M=13.16$), $p=.021$. However, we found no significant difference in willingness to pay for the low-risk lottery ($M=194.12 \text{ vs. } M=241.22$), $p=.45$. To show that reducing helplessness generates a similar shift in risk attitudes, we used the same helplessness manipulation as in the previous study and then elicited participants’ willingness to pay for either the low or high-risk gamble. Indeed, participants in the Helpless treatment reported significantly higher willingness to pay for the high-risk lottery ($M=41.86$) compared with Empowered participants ($M=18.13$), $p=.038$. At the same time, participants’ willingness to pay for the low-risk lottery was not affected by experimental treatment ($M=377.08 \text{ vs. } M=352.87$), $p=.70$.

#### Thinking About Financial Deprivation: Rumination and Decision Making Among the Poor

**EXTENDED ABSTRACT**

Why are the poor often susceptible to impaired decision-making? Recent work demonstrates that people who face scarce financial resources make suboptimal decisions and perform worse on a variety of cognitive tasks compared to those who do not face such constraints (Mani et al. 2013; Shah, Mullainathan, and Shafir 2012). The current research aims to illuminate the precise cognitive mechanism potentially responsible for these impaired decisions in order to derive implementable interventions.

Aversive thoughts about money are likely to be more accessible for the poor than the rich; given this, the poor may be predisposed to ruminate on, or dwell upon, their financial concerns. Indeed, a pilot study found that lower-income individuals were more prone to agree with statements such as “I have thoughts that I cannot stop” and “My thoughts frequently return to one idea” than the rich (select items from the White Bear Suppression Index, or WBSI; Wegner and Zanakos 1994). A large body of work has implicated the role of rumination in negative mood and a host of psychopathologies, including depression, anxiety, binge eating and drinking, and self-harm (Nolen-Hoeksema, Wisco, and Lyubomirsky 2008). In two field studies, we examine the effect of income on rumination about financial concerns in particular and highlight some downstream negative consequences of rumination on decision making. A third study investigates the efficacy of interventions such as suppressing thoughts about financial concerns, versus encouraging their free expression, on impulsivity.

Study 1 used a representative U.S. panel ($N=517$) to test the mediating role of rumination on impulsivity and cognitive function. Participants completed a monetary intertemporal titrator composed of 11 choices between a smaller, immediate reward and a larger, delayed reward (Green, Fry, and Myerson 1994), followed by a measure of cognitive performance and ability (Cognitive Reflection Task; Frederick, 2005). We then administered the WBSI and an adapted financial rumination scale (Scott and McIntosh 1999), along with alternative mediators hypothesized *ex ante* to be psychologically relevant (i.e., self-efficacy, desirability of control, self-control, and tightwad-spendthrift scores).

To analyze impulsivity, we interpolated an indifference point for each individual and estimated a discount rate parameter assuming a hyperbolic value function (Mazur 1987). The results demonstrate that the poor—both when classified as having incomes below $40,000 and on a continuous scale—discounted the future more (i.e., chose smaller-sooner rewards more often) and ruminated more on their finances than the rich. Ruminations fully mediated the relationship between income and impatience. A similar pattern obtained for CRT scores (after controlling for numeracy). In additional, rumination mediated the relationship between income and several consequential financial behaviors: namely, the likelihood of having taken a payday loan in the past, using a pawn shop, being able to raise $2,000 for an emergency, and spending more than one’s income over the past year.

Study 2 ($N=949$) extends these findings using a naturally occurring event to create conditions that would make the poor more likely to ruminate on their finances. Previous research finds that the poor tend to display impaired decision-making just before they receive a windfall gain. This tendency is best illustrated by Mani et al. (2013), who found that farmers’ cognitive function was impeded immediately before harvest compared to after harvest. We recruited participants (all with annual household incomes below $40,000) and compared rumination among those who claimed the Earned Income
An Urgency Effect in Responses to Future Rate Increases

EXTENDED ABSTRACT

Total consumer debt outstanding has been increasing since 2010 and reached over 3 trillion dollars in 2014 (Federal Reserve, 2014). Existing literature in financial decision making has shown that consumers have trouble dealing with their debts, understanding their credit card use and optimizing their repayment plans (e.g., Amar et al. 2011; David and McShane 2012). Studies have also shown that consumers have trouble figuring out how interest rates affect their finances and underestimate the effort required to pay off their debts (e.g., Soll, Keeney, and Larrick 2013).

The current research focuses on debt repayment behavior. Specifically, we examined how knowledge of the timing of future interest rate increases influences a person’s decision about when to repay their debts. We found that when the interest rate is already high, or is expected to increase in the very near future, people pay their debts more slowly than when it is currently at a lower level and expected to rise in the (not very near) future. We also investigated the underlying mechanism of this pattern, uncovered boundary conditions, and sought to generalize the pattern beyond debt payments to other domains of consumer behavior.

In Study 1, we asked 60 MTurk participants to imagine that they had taken out a loan last year. The interest rate on the loan was flexible and would increase from 2% to 5% at some point. We manipulated when the interest rate increased. In the rate-already-increased condition, we told participants that the lender had notified them that the rate had increased three months ago. In the rate-will-increase condition, we told participants that the lender notified them that the rate will increase in three months. Then, participants stated when they would like to pay back the loan. Participants in the rate-will-increase condition decided to pay off the loan significantly faster than those in the rate-already-increased condition ($M_{10.27}$ vs. $7.27$ months, $p<.01$), despite the fact that the accumulated interest (total cost) was higher in the rate-already-increased condition.

Study 2 aimed to replicate the basic effect we found in Study 1 and to show that the effect goes beyond past-future asymmetry (i.e., valuing future events more than equivalent past events, Caruso et al. 2008). In Study 2, we asked participants when they would pay back a loan, varying when in the future the interest rate would increase: immediately (this coming month), in a certain future time (four months from now) or in an uncertain future time (sometime between this month and 12 months from now). We found that participants in the certain-future ($M=6.41$ months) and uncertain-future ($M=7.69$) conditions decided to pay off the loan significantly faster than participants in the increase-immediately condition ($M=11.17$ months, $p<.01$ for this month vs. four months; $p<.05$ for this month vs. uncertain future).

One possible explanation is that overly aggressive goals might bring counterproductive consequences (e.g., Locke and Latham 2006; Soman and Cheema 2004). Participants may adopt the temporal cue (i.e., when the rate increases) as a deadline and automatically set up a goal to pay the money back before the deadline, but this only happens when the temporal cue is achievable. Therefore, when participants knew that the rate would increase in the coming month, that temporal cue did not trigger either the setting of an automatic goal (a deadline) or the motivation to pursue it, because they did not consider the goal achievable. They would otherwise repay the debt following their own pace. However, deadline-setting cannot fully explain why participants decided to repay sooner in the uncertain-future condition.

Another possible explanation is an “urgency bias.” Research has shown that people are more sensitive to changes than the status quo (Kahneman and Tversky 1979). People should normatively prioritize their repayment effort according to the interest rate. However, the rate increase looms larger than the objective amount of that rate in people’s decisions. In other words, people perceive the anticipation of an increased rate to be more urgent than a static high interest rate. Therefore, they pay more attention to the urgent cue (increasing tendency) than the important cue (interest rate) when making decisions.

In Study 3 and Study 4, we proposed two ways to draw consumers’ attention back to the interest rate. Study 3 tested whether evaluation mode (Hsee and Zhang 2010) would moderate the urgency bias. We manipulated perceived urgency (rate has increased vs. rate will increase) and evaluation mode (single vs. joint evaluation). We replicated the basic effect in single evaluation, but found that participants were more rational in joint evaluation: participants decided to pay off the rate-has-increased loan faster than the rate-will-increase...
loan when the two loans were presented side by side. Study 4 tested whether contemplating on the interest rate would alleviate the urgency bias. Results showed that the urgency bias went away when we asked participants to focus on the rate itself and consider whether the increased rate was too high or too low before they made their decisions.

The urgency bias exists not only in financial decision making with punitive interest rates, but also in other consumer behavior domains. In Studies 5 and 6, we looked at consumer purchasing behavior when the price of the product changes. We found that consumers purchased more when they received a discount for only one item than if they received a discount for four items. We have tested this effect with hypothetical scenarios (e.g., buying oysters, renting a bike) and are now running studies involving real consequences.

The above studies showed that when the interest rate is already at a high level, or is expected to increase in the very near future, people pay their debts more slowly than when it is currently at a lower level and expected to rise in the (not very near) future.

REFERENCES


