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MONEY IN THE MENTAL LIVES OF THE POOR

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Recent research has studied how resource scarcity draws attention and creates cognitive load. As a result, scarcity improves some dimensions of cognitive function, while worsening others. Still, there remains a fundamental question: how does scarcity influence the *content* of cognition? In this article, we find that poor individuals (i.e., those facing monetary scarcity) see many everyday experiences through a different lens. Specifically, thoughts about cost and money are triggered by mundane circumstances, they are difficult to suppress, they change mental associations, and they interfere with other experiences. We suggest that the poor see an economic dimension to many everyday experiences that to others may not appear economic at all.

Keywords: scarcity, money, spontaneous thoughts, financial concerns, attention

Social scientists have long been interested in the mental lives of the poor. Much of that work has examined the link between poverty, environmental stressors, and cognitive capacity (Bradshaw, 2007; Evans, 2004; Evans & English, 2002; Herrnstein & Murray, 1994). Recent research in psychology has suggested that poverty

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imposes additional burdens on the mind, thereby taxing cognitive bandwidth (Mullainathan & Shafir, 2013). A particularly striking finding shows that during periods when people lack money, they perform worse on measures of fluid intelligence and cognitive control (Mani, Mullainathan, Shafir, & Zhao, 2013). The standard interpretation of this finding is that poverty taxes cognitive function; concerns around juggling the demands of poverty increase cognitive load. This raises a natural and related question: What kinds of thoughts occupy the minds of the poor?

Recent work in this line of research has begun to offer a more nuanced picture of the mental lives of the poor. For instance, when people face resource scarcity, they become more focused on those limited resources (Shah, Mullainathan, & Shafir, 2012). Because of this greater focus, the poor are more likely to remember what things cost (Mullainathan & Shafir, 2013), they are less susceptible to certain pricing tricks (Binkley & Bejnarowicz, 2003), and are more likely to notice hidden taxes (Goldin & Homonoff, 2013). Additional studies suggest that when facing various forms of scarcity, people spend their resources more efficiently (Shah et al., 2012). Under poverty (and other forms of scarcity), people are more likely to consider tradeoffs and opportunity costs (Shah, Shafir, & Mullanathan, 2015; Spiller, 2011). As a result, they are more likely to conform to certain normative economic principles and are less susceptible to certain context and framing effects than are the wealthy (Shah et al., 2015).

These results begin to highlight what the poor are thinking about. Whereas everyday experiences have many dimensions (financial, temporal, social, emotional), the poor are often in situations that require them to think carefully about costs. With very limited budgets, concerns about money necessarily loom large. To solve persistent financial challenges, the poor must be attuned to the economic dimension of things.

In this article, we suggest that concerns about money are triggered in the minds of the poor not only by sheer necessity, but by a persistent preoccupation with finances. In a sense, the poor exhibit a monetary "cocktail party effect." Just as people have a low threshold for noticing their own name and other concepts of subjective importance (Treisman, 1960, 1964), poor individuals have a low threshold for seeing the economic dimension of everyday experience. That is not to say that poor individuals are always thinking only about money. But if an experience has some economic dimension, the poor are more likely to tune to it than are the rich. As a result, people in poverty are more likely to entertain monetary considerations even in situations that do not involve explicit monetary decisions.

Below, we explore some of the ways that concerns about cost enter into the mental lives of the poor. First, we find that thoughts about cost are easily triggered in daily experience. Second, these thoughts come to mind *spontaneously* for the poor, even when money has not been mentioned. Third, these thoughts are *persistent*. Once they are raised, they are difficult to suppress. Finally, monetary concerns shape the *associations* that the poor form among concepts. Thoughts about cost change the way things are connected in the minds of the poor.

Thus, our article makes two contributions. We demonstrate that the poor are more attuned to the economic dimension of experience. And we describe the broad ways that this dimension becomes more accessible in the mental lives of the poor. Our results suggest a more fundamental divide between the poor and the wealthy. While the material differences are obvious, the subjective experience of being poor is more than the sum of these material disparities. For example, a doctor's visit can resemble a dichotic listening task. In one ear, the poor are listening to the diagnosis and potential cures, while at the same time they are contemplating the price of the medication and whether they can afford it—even when the latter has not been mentioned. The poor see an economic dimension in many everyday experiences; a dimension that is largely absent for those who are better off.

In what follows, we offer several demonstrations of how cost-related thoughts come to mind for the poor. The studies rely on existing differences in income among participants. Participants reported their total household income on a scale with bins ranging from "less than $10,000" to "more than $150,000." Household income was coded as the midpoint of the chosen income bin (or $150,000 for the highest bin).[1] Participants also indicated how many people lived in their household, and reported household income was divided by the square root of the household size, per the Organisation for Economic Co-operation and Development (OECD) equivalence transformation (OECD, 2008). Following a procedure used before (Shah et al., 2015), we log-transformed this metric because it is positively skewed and planned to exclude incomes that were more than 3 *SD* from the mean (no participants were excluded in the studies below, unless otherwise noted). We report analyses based on a median split of this metric and based on treating this metric continuously. Participants were recruited from Amazon's Mechanical Turk or Prolific Academic and participation was restricted to U.S. residents, except where noted otherwise. Below, we report all measures, manipulations, and exclusions. For each study, sample sizes were determined a priori and analyses were conducted after data collection was completed.

It is worth noting that few of the participants in these studies were truly poor. Our poorer participants were merely "heavily budget constrained." We believe that this provides a conservative test of our hypothesis, and that the effects would be even more pronounced among poorer participants. Our prior work on tradeoff thinking among lower-income individuals demonstrated that results from participants from MTurk replicated on a nationally representative sample (Shah et al., 2015).

STUDY 1: THOUGHTS ABOUT COST ARE EASILY TRIGGERED

In this first study, we tested whether concerns about cost and money are more easily triggered for lower-income than for higher-income individuals when they contemplate daily events that involve an economic dimension.

1. Because of a slightly different standard demographics form used, participants in Study 1 reported their household income on a scale with bins ranging from "less than $20,000" to "more than $160,000," with $160,000 coded for the highest bin.

METHOD

There were 495 participants (M_{age} = 35.8 [*SD* = 11.8]; 218 females, 274 males, 3 other; median household size: 2 people; median household income: $50,000 [*SD* = $37,506]). Participants read through four scenarios, presented in a random order. The first scenario read:

> Suppose it is Friday evening, and you are at your local hangout with a couple of good friends watching sports on TV. It's one friend's birthday and the group decides to all chip in and get a real good bottle of wine to celebrate. What do you think of at that moment? Please indicate to what extent you would think about each factor.

Participants then indicated how much they might think about several aspects related to the experience. Five dimensions were non–cost-related and one was cost-related. All ratings were on a scale from 1 ("I wouldn't think about it at all") to 10 ("I would think about it a lot"). The cost-related item was: *How much will I need to chip in for the wine?*

The non-cost items were:

- What kind of wine will they order?
- How nice it is to celebrate birthdays with good friends!
- Do I need to drive soon after drinking?
- How much alcohol have I had already?
- How would I like to celebrate when my birthday rolls around?

The second scenario read:

> Imagine that a good childhood friend just got engaged, and you offer to treat them to a celebration lunch. They choose a restaurant you have never been to before, which turns out to be highly rated. As you enjoy the meal, what comes to mind? Please indicate to what extent you would think about each factor.

Participants then rated how much they would think about six things—five were non–cost-related and one was cost-related. The cost-related item was: *How much will I have to pay for this lunch?* The non-cost items were:

- How nice it is to be able to treat a friend to a nice lunch!
- What other restaurants have I been to that compare to this one?
- Are the dishes that I ordered healthy enough and not too fattening?
- Who should I recommend this restaurant to?
- How would I like to celebrate when I get engaged?

The third scenario read:

> Suppose you are running late for an important meeting across town. While you had originally planned to walk there, there is not enough time now, and no quick public transportation to get you there. So you take a cab. As you sit in the cab in traffic, what do you think of? Please indicate to what extent you would think about each factor.

Participants then rated how much they would think about six things—five were non–cost-related and one was cost-related. The cost-related item was: *How much will this unexpected cab ride cost me?* The non-cost items were:

- I really ought to plan my time better.
- There really ought to be better public transportation available.
- Should I have tried running instead?
- It's nice to sit back and enjoy the scene.
- Is this time of day good or bad for traffic?

The fourth scenario read:

> Suppose you sit to watch one of your favorite movies, with a bottle of beer you had at home. Suppose the bottle costs $3.00 at your local store. Which of the following best captures your thoughts about drinking the beer?

Participants then rated how much they would think about two things—one was non–cost-related and one was cost-related. The non-cost item was: *While I enjoy drinking the beer, I don't think at all about what it costs me. I paid for the bottle a while back and I had intended to drink it all along.* The cost-related item was: *While I enjoy drinking the beer, I still think about its cost, or the cost of buying future bottles.*

Across the four scenarios, we expected poorer participants to indicate that they thought more about cost-related items. We did not expect them to report thinking more about non–cost-related items.

RESULTS

For all participants, we averaged the ratings on the cost-related items, as well as the non–cost-related items, across the four scenarios. Lower-income participants were significantly more likely to think about the cost-related items (mean [95% CIs], 6.54 [6.33, 6.76]) than were higher-income participants (6.19 [5.94, 6.45]), $t(493) = 2.06$, $P = .04$, Cohen's $d = .19$. This result also holds when income is analyzed continuously, $\beta = -.70$, $t(493) = 2.65$, $P = .008$. In contrast, lower-income participants were not more likely to think about the non-cost items. If anything, higher-income participants were marginally more likely to think about non-cost items (6.00 [5.85, 6.16]) than were lower-income participants (5.84 [5.70, 5.98]), $t(493) = 1.50$, $P = .13$, Cohen's $d = .13$ (analyzed with income treated continuously: $\beta = .29$, $t[493] = 1.73$, $P = .09$). Of course, it is always possible that lower- and higher-income participants differ in other ways, besides income. With online participants, one might

be concerned that lower-income participants could be younger. But the results are unchanged when we control for age (as is true for all the results that follow).

Note that the scenarios we explored for this first study were intended to capture everyday experiences (e.g., a beer in front of the TV; a meal with a friend). While these experiences have a financial dimension, they are not overwhelmingly economic in nature. There was no explicit monetary decision to make or financial problem to solve. Even in these situations, lower-income participants appear to have a lower threshold for considering the economic aspects of the experience. Simple daily events such as gathering with friends, having a beer, or riding in a taxi take on an additional dimension for the poor—it is not just about the experience itself, but also about its underlying costs.

The foregoing paradigm, however, might overstate the accessibility of money-related thoughts. After all, the survey provides response options that explicitly mention cost. Perhaps some lower-income individuals who were not thinking about money, picked it once it was mentioned in the survey. If money-related thoughts are truly spontaneous, then they should arise even when unprompted by survey items. We tested this in the next study by simply asking people to list thoughts that come to mind as they consider a different kind of experience: A visit to the doctor.

STUDIES 2a AND 2b: THOUGHTS ABOUT COST ARISE UNPROMPTED

METHOD

Study 2a included 198 participants (M_{age} = 30.3 [*SD* = 9.1]; 79 females, 119 males; median household size: 3 people; median household income: $35,000 [*SD* = $34,660]). Study 2b was a direct replication with 382 participants (M_{age} = 30.3 [*SD* = 10.3]; 168 females, 214 males; median household size: 3 people; median household income: $45,000 [*SD* = $38,651]).

Participants read the following instructions:

> Imagine that you have been feeling sick lately and finally decide to go see a doctor about it. The doctor runs some tests and calls you a few days later with the diagnosis. The doctor explains that you have a serious condition that requires immediate attention. The good news, however, is that the condition is entirely treatable and the doctor says you are virtually guaranteed to make a full recovery. There is a fairly involved course of treatment that your doctor would like to start you on right away. The doctor writes several prescriptions for you and asks which pharmacy you would like them sent to. You will also need to make several appointments to see the doctor in the coming months. Pause for a moment. What would be on your mind or how would you feel as you hear this news and think about what to do? What are three things you would think about or feel? Think about those three things. Then summarize each thought or feeling with just one word. Please write those words in the space below.

Participants were given three textboxes in which to write one word each. A research assistant (blind to the hypothesis and to participant demographics) coded whether participants mentioned money-related words (e.g., "money," "cost," "payment") or emotion-related words (e.g., "anxious," "relieved," "scared"). We expected participants to perceive this as a profoundly emotional experience. We also expected that against this common backdrop, the poor would be more likely than the wealthy to entertain money-related thoughts.

RESULTS

We analyzed the number of money- and emotion-related words mentioned by each participant. In Study 2a, participants primarily mentioned emotion-related words; this was true for both lower-income participants (2.30 words [2.10, 2.50]) and higher-income participants (2.44 [2.25, 2.64]), $t(196) = .98$, $P = .33$, Cohen's $d = .14$. Critically, lower-income participants mentioned more money-related words (.21 [.12, .31]) than did higher-income participants (.08 [.03, .14]), $t(196) = 2.30$, $P = .02$, Cohen's $d = .33$. These results also hold when income is treated continuously (Emotions: $\beta = .35$, $t[196] = 1.70$, $P = .09$; Money: $\beta = -.23$, $t[196] = 2.96$, $P < .01$).

Study 2b replicated these results. Lower- and higher-income participants mentioned the same number of emotion-related words (lower-income: 1.88 [1.74, 2.02] vs. higher-income: 1.88 [1.74, 2.02]), $t(380) = .04$, $P = .97$, Cohen's $d = 0$. Lower-income participants mentioned marginally more money-related words (.22 [.15, .29]) than did higher-income participants (.14 [.09, .20]), $t(380) = 1.77$, $P = .08$, Cohen's $d = .19$. These results hold when income is treated continuously (Emotions: $\beta = .06$, $t[380] = .38$, $P = .71$; Money: $\beta = -.14$, $t[380] = 2.21$, $P = .03$).

These studies contribute to our understanding of the kinds of thoughts that occupy the minds of the poor. Concerns about cost can arise even when unprompted, and even in contexts that mostly involve other prominent concerns. But once these thoughts come to mind, how persistent are they? In the next study, we demonstrate that these thoughts are difficult to suppress.

STUDY 3: THOUGHTS ABOUT COST ARE PERSISTENT

Here, we tested whether thoughts triggered by financial concerns prove more intrusive in the mental lives of poorer individuals. We adapted classic paradigms on thought suppression, which show that when people are instructed to avoid thinking about a topic, they can have a hard time doing so (e.g., Wegner, Schneider, Carter, & White, 1987; for a review, see Wenzlaff & Wegner, 2000). We asked participants to suppress thoughts about the cost of a fairly mundane experience: Driving. We picked this experience because it is one that is woven into the fabric of nearly everyone's days. Yet we expected that poorer participants would find it more difficult than higher-income individuals to suppress thoughts about how much driving cost them.

METHOD

There were 573 participants (M_{age} = 30.1 [*SD* = 9.7]; 229 females, 343 males; median household size: 3 people; median household income: $45,000 [*SD* = $35,566]). Age and gender data were missing for one participant.

All participants were first given the following instructions to let their minds wander freely for three minutes:

> First, we just want you to think freely. Let your mind wander and think about whatever you wish for the next 3 minutes. While you do this, please talk out loud, continuously saying whatever crosses your mind. To start the mind wandering exercise, click the button below to start the timer and then please start speaking out loud about what you are thinking about. Obviously, there is no way we can force you to speak out loud or let your mind wander, but we hope that you will participate in this study honestly.

Following the first mind-wandering phase, participants were asked to let their minds wander for an additional 3 minutes. This time, they were instructed to not think about some aspect of their driving. Specifically, some participants were told to not think about how much they drive, while other participants were told to not think about how much driving *costs* them. Participants saw the following instructions, either as in parentheses or brackets:

> In the next 3 minutes, verbalize your thoughts as you did before, with one exception. This time, try not to think of (how much you drive each month) [how much you spend on driving each month]. However, every time you think of (your driving) [how much driving costs you], please press the button that says "I thought of it." This button will appear after you start the clock. To start the exercise, click the button below to start the timer and then please start speaking out loud about what you are thinking about.

Participants were instructed to click the button each time they had an intrusive thought. We expected that poorer participants would find it more difficult to suppress thoughts about the cost of driving, whereas they would not differ from wealthier participants when thinking about how much they drove each month. This pattern would indicate that the difficulty of thought suppression is not a general feature of cognition among the poor, but is specific to thoughts about cost.

RESULTS

Click-data were missing from 5 participants, leaving 568 participants for the analyses. When asked to not think about how much they drove, the number of intrusions for lower-income participants (5.77 [4.86, 6.68]) did not significantly differ from intrusions for higher-income participants (6.87 [5.74, 8.01]). Yet when asked

to not think about how much they spend on driving, lower-income participants reported significantly more intrusions (6.63 [5.48, 7.77]) than did higher-income participants (5.01 [4.17, 5.85]); interaction between income and condition $F(1, 564) = 6.99$, $P < .01$, $\eta_p^2 = .01$. The interaction was also significant when income was treated continuously, $\beta = -3.43$, $t(564) = 2.38$, $P < .02$.

These results demonstrate that once thoughts about cost come to mind for the poor, they are difficult to suppress, even when explicitly trying to do so. These studies highlight the broad role that concerns about cost play in the mental lives of the poor. Thoughts about money and cost come to mind spontaneously, even in non-financial contexts, and they are persistent. Because these thoughts arise so readily and prove so salient, concerns about cost might actually become an important dimension along which the poor organize their thoughts and experience (Dougherty, 1978; Hutchinson, 1983). That is, there may be things that the wealthy see as unrelated, but which the poor see as connected because those things all activate concerns about cost. For example, "rent" and "grocery" might seem like unrelated concepts to the wealthy. But because both concepts trigger concerns about cost, the poor might see a stronger association. We explore this in the next studies.

STUDIES 4a AND 4b: THOUGHTS ABOUT COST SHAPE MENTAL ASSOCIATIONS

The following studies establish that thoughts about money change the associations that the poor form between various concepts. Whereas the wealthy see a set of concepts or items as unrelated, the poor see these as connected through the lens of monetary concerns. To demonstrate this, we draw on the Deese-Roediger-McDermott memory paradigm (Deese, 1959; Roediger & McDermott, 1995), which provides a window into people's mental associations between concepts. In the classic version of this paradigm, participants are serially presented with lists of words. For example, participants might see or hear the following words: *male, uncle, son, woman, beard, husband, person, father, muscle, handsome, strong,* and *lady.* Participants are subsequently asked to recall as many words from the list as they can. Not surprisingly, people's recall is imperfect; more interestingly, participants have a tendency to recall specific words that were never presented. In this case, they might recall the word *man*. Why? The words in the list are strongly associated with the critical word (man). As these words become activated in the mind, the activation spreads to the critical word, creating the feeling that it was also seen even though it was not.

We used this logic to create a list of expense-related words (e.g., *rent*, *grocery*). We expected that wealthier individuals would see these words as only loosely connected. But that for poorer participants, these words would tend to bring to mind the critical concept of *money*. Semantic networks, the mental associations between concepts, have long been seen as a way to capture human knowledge, the ways we represent the world (Anderson, 1983; Anderson & Bower, 1973; Sowa, 2014). These

studies, then, might offer a glimpse into how money shapes the way that poorer individuals organize their view of the world.

METHOD

In Study 4a, there were 125 participants (M_{age} = 35.9 [*SD* = 13.3]; 65 females, 60 males; median household size: 2 people; median household income: $35,000 [*SD* = $35,698]). Study 4b was a direct replication with 477 participants (M_{age} = 31.1 [*SD* = 11.0]; 184 females, 293 males; median household size: 2 people; median household income: $45,000 [*SD* = $38,546]).

Participants were presented with two word lists, with the order counterbalanced across participants. The money-related word list consisted of the following words: *rent, loan, phone, dollar, coin, gas, bills, expense, grocery, utilities, cash,* and *pay.* The man-related word list was as shown above: *male, uncle, son, woman, beard, husband, person, father, muscle, handsome, strong,* and *lady*.

Words were presented on the screen serially for 3 seconds each. After all the words in a list were presented, participants were told to write down as many of the words as they recalled having seen. Finally, participants indicated their age, gender, ethnicity, total household income, and number of people living in the household.

The man-related word list served as a control measure of rich–poor differences in false recall rates. We did not expect income differences in false recall for this word list. However, we predicted that poorer participants would be more likely to report having seen the word *money* for the money-related word list.

RESULTS

For each participant, we coded whether they falsely recalled the word "man" for the man-related word list and whether they falsely recalled the word "money" for the money-related list. We conducted binary logistic regressions to test whether false recall rates varied across lower- and higher-income participants. In Study 4a, for the man-related word list, lower-income participants did not show significantly more intrusions (proportion who falsely recalled critical word [95% CIs] 18.5% [10.9%, 29.6%]) than higher-income participants (16.7%) [9.3%, 28.0%], β = -.01, Wald-test χ^2 = .00, $P > .98$. However, for the money-related word list, lower-income participants had significantly more intrusions (15.4% [8.6%, 26.1%]) than did higher-income participants (1.7% [.3%, 8.9%]), β = -2.27, Wald-test χ^2 = 4.53, $P < .05$. These results remain marginally significant when income is treated continuously (Man-related list: β = -.17, Wald-test χ^2 = .07, P = .79; Money-related list: β = -1.43, Wald-test χ^2 = 3.32, $P < .07$; see Figure 1).

Study 4b replicated these results. For the man-related word list, lower-income participants did not have significantly more intrusions (16.7% [12.5%, 21.9%]) than did higher-income participants (13.5% [9.7%, 18.4%]), β = -.25, Wald-test χ^2 = .93, P

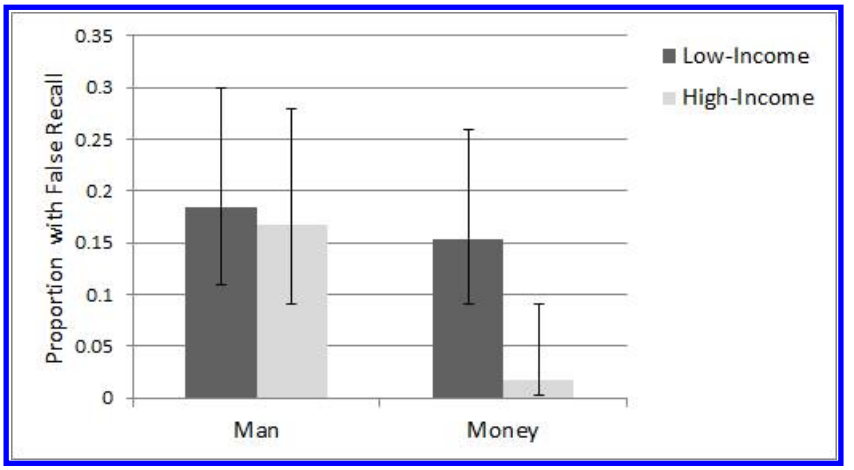

FIGURE 1. Results from Study 4a (error bars show 95% CIs). Lower-income participants exhibited more memory intrusions for the money-related word list than did higher-income participants. No difference in intrusion rates was observed between lower- and higher-income participants for the control man-related word list.

= .34. Importantly, we once again find that for the money-related word list, lower-income participants showed significantly more intrusions (12.1%, [8.5%, 16.8%]) than did higher-income participants (6.8% [4.2%, 10.7%]), β = -.64, Wald-test χ^2 = 3.87, $P < .05$. These results also hold when income is treated continuously (Man-related list: β = -.46, Wald-test χ^2 = 1.84, P = .18; Money-related list: β = -1.26, Wald-test χ^2 = 10.29, $P < .01$).

These results capture fundamentally different word associations for the wealthy and the poor. Of course, everyone regularly deals with most of the items on the money-related list. But strikingly, wealth affords us the luxury to see those items—rent, phone, grocery—as largely disconnected. For poorer participants, however, that list takes on a different texture. The items are all associated with prominent financial concerns, strongly related to the one concept that is not there but is often remembered: Money.

The results above suggest that scarcity has a robust effect on the associations that the poor perceive. And those associations, when the relevant concepts are encountered, raise the specter of scarcity in the minds of the poor. Across all studies, scarcity concerns affect cognition among the poor. Thoughts about cost come to mind readily, are difficult to suppress, and change the lens through which the poor categorize the world.

GENERAL DISCUSSION

People often assume that low-income individuals engage in less thought. The poor are consistently perceived as being among the least competent groups (Cuddy, Fiske, & Glick, 2007), and people dehumanize the poor and assume they have less mental capacity than those who are well-off (Epley & Waytz, 2010; Harris & Fiske, 2006).

Psychological research offers a different view, describing the ways that poverty can impede cognitive function (Mani et al., 2013) or sharpen specific cognitive capacities (Mittal, Griskevicius, Simpson, Sung, & Young, 2015; Shah et al., 2012; Shah et al., 2015; Spiller, 2011). Our studies extend this work by exploring the content of cognition among the poor. We find that concerns about cost become top of mind for the poor, even in situations where financial decisions are not required and money is not explicitly involved. Lower-income individuals have a lower threshold for seeing the economic dimension to everyday experiences. Concerns about money emerged spontaneously, were difficult to suppress, and shaped the connections that poorer individuals saw between things.

The current work suggests a link between the ease with which monetary concerns come to mind and the ways in which these concerns tax cognitive function (Mani et al., 2013). Prior research has argued that dealing with financial challenges can tax the mental bandwidth of the poor. Perhaps the ready accessibility of money-related thoughts contributes to the distractions that tax mental bandwidth. While our results cannot address this directly, future research should investigate this link further.

Prior studies have examined similar themes, though more narrowly. For instance, hungry individuals are more attuned to food-related cues (Piech, Pastorino, & Zald, 2010; Radel & Clément-Guillotin, 2012), thirsty people focus on water-related words (Aarts, Dijksterhuis, & De Vries, 2001), and alcoholics and dieters tend to focus on alcohol- and diet-related concepts (Mullainathan & Shafir, 2013; Stetter, Ackermann, Bizer, Straube, & Mann, 1995). As for money, people with retirement or financial anxiety attend more to retirement- and money-related words (Gutierrez & Hershey, 2013; Shapiro & Burchell, 2012). These results all highlight ways in which pressing needs capture attention. Our current findings certainly echo this theme and provide new evidence on how poverty can motivate cognition. Our results provide a broader view of how a scarce resource (in this case, money) influences attention, perception, and memory. We show that concerns about money come to mind spontaneously among the poor. And, as in Studies 4a-b, poor individuals not only are more attuned to explicit monetary cues, but also rely on such cues in how they associate concepts. Like thirst or hunger, a feeling of relative poverty threatens basic needs and captures the mind. Furthermore, it requires continuous attention as one tries to juggle numerous needs with only scarce resources. And it shapes how we see things.

Related field research offers evidence consistent with our findings. In one study, for example, wealthy individuals were more likely to engage in financial "ostrich behavior," allowing them to pay less attention to their financial holdings during market declines, relative to poorer individuals who found it harder to suppress monetary concerns (Sicherman, Loewenstein, Seppi, & Utkus, 2016). Other work highlights how concerns about cost change poor individuals' perceptions, or even the way that social relationships are organized. For example, in poor villages in India, where people spend a significant portion of their income on festivals, ongoing concerns about cost mean that these festivals are no longer perceived as pure leisure. Instead, they take on a different meaning: They are a way to build social

capital, providing access to a host of benefits from invitations to meals with others to lower food prices and the security of social insurance (Rao, 2001). A preoccupation with poverty, in other words, creates a lens through which festivals, the price of food, social relationships and insurance are associated in ways that the wealthy do not perceive.

Further research should explore other ways that concerns about cost manifest in cognition under poverty. Our work has focused on how everyday experiences trigger these concerns. Additional research could examine how these concerns shape knowledge and memory. For instance, when Mullainathan and Shafir (2013) asked commuters in Boston about the starting fare on taxi meters, they found that poor individuals (who clearly ride taxis less often) were significantly more likely than wealthier individuals to know the correct price. But concerns about cost could manifest in memory in other ways besides better price recall. Perhaps the poor will show better memory for monetary experiences in general than would the wealthy. Or, the poor might remember more monetary details, at the expense of other details of everyday experience. Future research should also move beyond the cognitive dimensions of monetary concerns to study several affective dimensions. For example, the poor might find it more difficult to fully enjoy experiences that cost money when they are distracted by concerns about cost. Or they may derive more enjoyment when they are able to focus on savoring costly but affordable experiences (Quoidbach, Dunn, Hansenne, & Bustin, 2015).

It is also worth examining how the present results might generalize beyond the poor. There are reliable cognitive and behavioral differences between people who are more frugal ("tightwads") and those who spend more freely ("spendthrifts"; Rick, Cryder, & Loewenstein, 2008). Tightwads often experience and anticipate a pain of paying for things. This may mean that they also experience spontaneous and persistent concerns about cost, similar to those experienced by the poor. More generally, these effects may apply to other forms of scarcity as well. Prior research has found that some effects for money scarcity generalize to time scarcity and even caloric scarcity (Shah et al., 2012; Shah et al., 2015). Indeed, the classic Minnesota Starvation Experiment found that participants who underwent extreme starvation persistently found themselves preoccupied with thoughts and images of food (Keys, Brožek, Henschel, Mickelsen, & Taylor, 1950). Similarly, we might expect busy individuals to experience spontaneous concerns about time that they find difficult to suppress.

Finally, concerns about cost are certainly not the only thoughts that occupy the minds of the poor. Recent studies have shown that concerns about stigma also tax cognitive capacity among the poor (Hall, Zhao, & Shafir, 2014). And ethnographic work has unpacked the nature of this stigma: The poor are often concerned about being seen as a burden or as deserving to be poor (Reutter, Stewart, Veenstra, Love, Raphael, & Makwarimba, 2009). Our methodology could be applied to further explore how often these concerns about stigma arise spontaneously and how persistent they are.

The current results highlight an important dimension to policy making for the poor. For example, nationalized healthcare systems, such as the United King-

dom's, might not only provide a buffer against the financial costs of being sick—they might also buffer against related psychological costs. To test this possibility, we replicated the "visit to a doctor" scenario (Studies 2a-b) with 373 U.K. residents (M_{age} = 32.6 [*SD* = 11.5]; 218 females, 155 males; median household size: 3 people; median household income in dollar-equivalent: $45,000 [*SD* = $31,551]; 2 participants excluded for incomes 3 *SD* below the mean). In contrast to our results with U.S. participants, U.K. participants' responses did not significantly differ based on income. Lower- and higher-income participants mentioned a similar number of emotion-related words (lower-income: 2.15 [2.02, 2.28] vs. higher-income: 2.09 [1.95, 2.24]), $t(369) = .53$, $P = .59$, Cohen's $d = .06$, but also a similar number of (and very few) money-related words (lower-income: .05 [.02, .08] vs. higher-income: .03 [.004, .05]), $t(369) = .98$, $P = .33$, Cohen's $d = .10$. Of course, the U.K. and U.S. samples differ in many ways. But these results at least hint at the possibility that certain concerns can be alleviated by programs that create the right cost buffers. In fact, in Canada, the Ontario College of Family Physicians explicitly considers how a doctor's visit feels entirely different to the poor. During appointments, doctors do not only consider physical symptoms, but they also evaluate and address financial distress through discussion of assistance programs intended to alleviate some of the pressures faced by low-income patients (Bloch, 2013).

Meanwhile, policy-makers focused on development in poorer countries often advocate charging a small fee for healthcare products instead of giving them away for free. The reasoning is that the fee reduces waste by screening out people who do not value the product enough to be willing to incur a small expense. In fact, such small fees have been found to drastically reduce the take-up rate for several interventions (Ashraf, Berry, & Shapiro, 2010; Cohen & Dupas, 2010). Obviously, such fees could impose financial costs that dissuade some poor individuals. But what goes unappreciated is the potential psychological cost imposed by such "small" fees. When resources are scarce, a free product may feel categorically different from one that costs even a small amount. For the poor, a cost, however minimal, might be accompanied by intrusive thoughts about prices, tradeoffs, and affordability. Further research should also consider the possibility that different levels of poverty may dictate different insights and interventions. Thus, at a level of true abject poverty, where budgeting is no longer even a concern, things could be different again. An appreciation for the nuanced aspects of the scarcity mindset may open up new avenues for the design of benefits programs and interventions.

In describing the ways that concerns about cost enter into the minds of the poor, the current studies further contribute to our emerging understanding of the experiential aspects of the scarcity mindset. Social scientists have long focused on the unique material challenges facing the poor—irregular work, cramped housing, underperforming schools, and so on. The present studies show that being poor does not just mean having different life experiences—it means experiencing many ordinary life events differently. The studies show that those who live comfortably often experience a different reality from those struggling to make ends meet. And in some ways, this may be the more striking disparity because it is not limited to where one works, lives, or goes to school. It is woven through thought and percep-

tion, often in ways that are hard to detect or appreciate. Where money is the last thing that comes to mind for those living comfortably, it is ever present for those getting by on less.

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