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MERELY ACTIVATING THE CONCEPT OF MONEY  
CHANGES PERSONAL AND INTERPERSONAL BEHAVIOR

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### Abstract

Money plays a significant role in people's lives and yet little experimental attention has been given to the psychological underpinnings of money. We systematically varied whether or to what extent the concept of money was activated in participants' minds using methods that minimized participants' conscious awareness of the money cues. On the one hand, participants reminded of money were less helpful than were participants not reminded of money, and they also preferred solitary activities and less physical intimacy. On the other hand, reminders of money prompted participants to work harder on challenging tasks and led to desires to take on more work as compared to participants not reminded of money. In short, even subtle reminders of money elicit big changes in human behavior.

Keywords: money, self, competency, performance, helping, interpersonal relationships

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Money changes people. Although this statement would seem to be a truism, little work has been done to test the psychological underpinnings of money. Our goal was to examine the potential cognitive, motivational, emotional, and behavioral changes that result from the activation of money in people's minds. We found that even subtle reminders of money produce robust changes in behavior. Money-related concepts have been studied in psychology, sociology, marketing, anthropology, and health sciences, and this research hints at money having dual effects. These findings can be summarized as showing that money is bad for the interpersonal self but money can be good for the personal self.

On the former point, research is clear that the love of money is often the start of relationship trouble. Americans who value money have poorer relationships compared to those who take a more moderate approach to money (e.g., Kasser & Ryan, 1993). People's mental health is also harmed when people value both the possession of material objects and family relationships because these two values conflict and cause mental stress (Burroughs & Rindfleisch, 2002). (Intriguingly, people who value material objects but not family do not have mental health repercussions.) Hence, wanting money or what money can buy impairs relationship-related outcomes.

In contrast, life seems to be better when people have money than when people lack money. As has been widely discussed and debated (Diener & Seligman, 2004), evidence suggests that having money is associated with more frequent positive emotions and less frequent negative emotions (although methodological factors may contribute to the effect; Kahneman, Krueger, Schkade, Schwartz, & Stone, 2006). Other work shows that having money is good for one's health. Findings on socioeconomic status (of which income is a major determinant) reveal consistently negative effects on mortality (Adler & Snibbe, 2003). Financial

strain is accompanied by heightened depression, ill physical health, and lower feelings of control (Price, Choi, & Vinokur, 2002). Recent work revealed that having money protects people from unfortunate and unforeseen perturbations in life, mainly because money allows for control over the outcomes (Johnson & Krueger, 2006). In short, having money confers benefits to people's lives.

### PREDICTING MONEY'S DUAL EFFECTS

We found it somewhat puzzling that wanting money seems to make life worse but having money makes life better; after all, few (if any) other major wants or needs have this quality. We developed two hypotheses to reveal more about the psychological effects of money.

Common uses of money include procurement of goods or as a reward for successful task completion. Exchange of resources on the basis of equity and ratios (as in the case with money) defines what is known as a market pricing mode, one of the four fundamental ways that people relate to one another (Fiske, 1991). Market pricing underlies cost/benefit analyses, in that a person considers what he or she will receive in return before exacting a given behavior. Because money is a quintessential form of market pricing, over time the mere presence of money should elicit a market-pricing orientation toward the world.

This framework led to dual hypotheses. One hypothesis was that money would be linked to a focus on personal inputs and outputs, which may manifest behaviorally as an emphasis on personal performance. This prediction came from the fact that people use money to procure goods and services to enable them to meet personal needs, which they can do far more efficiently with money than if they lacked money. A secondary source of support comes from the fact that money rewards successful task completion, which means that money often follows from performance efforts. Hence, we predicted the concept of money would encourage individual performance efforts.

Although promoting personal performance may be beneficial for getting ahead, it may not be the best for getting along with others. If money conjures up a market pricing mode, in

which people think of life in transactional terms with inputs and expected outputs, then one might expect problems when it comes to socially relating to others. Indeed, the mode that underlies the connectedness found in warm and intimate relationships is located at the opposite end of the relational model spectrum (Fiske, 1991), suggesting that behaviors elicited by one mode may clash with the other mode. Hence, our second hypothesis was that being reminded of money would also make people insensitive to others' needs, compared to cases in which people had not been reminded of money.

We used the term *self-sufficiency* to describe the inner state that accompanies a market pricing mode. Self-sufficiency is most simply defined as an emphasis on behaviors of one's own choosing accomplished on one's own – that is, without active involvement from others. Being in a self-sufficient state would mean being hesitant to allow others to involve the self in their activities (see Vohs et al., 2006, for more information on the term self-sufficiency).

#### TESTING MONEY'S MIXED EFFECTS

Research on concepts related to money (e.g., materialism, desire for money, wealth, financial strain) yielded some important ideas about money's possible effects but it was unclear whether money *per se* was the driving force. There are many differences between wealthy and nonwealthy people and people who value material goods versus those who do not, differences that may have been driving effects in extant research. Hence, we took our hypotheses to the laboratory and used experimental manipulations to change how strongly or weakly the concept of money was activated in participants' minds. Experimental designs use random assignment to condition, which eliminate concerns that different types of people could produce the effects. Together, these two features allowed us to make causal claims about whether money *per se* determines the observed effects. Additionally, our manipulations used subtle reminders, or *primes*, to uncover natural mental associations. We did so by minimizing the salience of the manipulations, such that participants were likely unaware of the presence of money cues.

The methods we used can be categorized into four broad classes. In one manipulation, participants played the game Monopoly®; participants in the money condition were left with \$4000 of play money, whereas control condition participants were left with no additional play money. Another manipulation asked participants to think about life with abundant finances versus life with restricted finances. A third type of manipulation had participants organize phrases that were or were not related to money (“I cashed a check” versus “I wrote the letter”). A fourth method involved participants sitting near images of cash or another picture. All the methods yielded similar effects.

We first investigated the effects of money on social relationships by testing helpfulness toward others. We predicted that money reminders would detract from helpfulness due to its suspected role in straining social relationships. Moreover, helpfulness is a socially valuable motive that we predicted would reflect changes in underlying preferences related to sociality. We measured helpfulness in four experiments that varied whether the helping opportunity came in the form of offering time versus money. In one experiment, participants were reminded of money via different uses of the board game Monopoly™, such that some participants were strongly reminded of money whereas others were not. Later, the experimenter asked each participant if she or he would be willing to code data for her honors thesis. Participants who earlier had been reminded of money were less volunteering of their time as compared to participants who had not been reminded of money, the latter of whom offered 96% more time to helping compared to money-reminded participants. In another experiment participants first were reminded of money (or not) via a linguistic puzzle and later met a confused peer (actually a confederate working for the lab). The confused peer asked for help in understanding instructions for a task on which she was to be working. Participants not reminded of money were 120% more helpful in terms of the length of time they spent helping the confused student, relative to those who had been reminded of money.

Although we had observed multiple instances of reduced helpfulness among participants reminded of money, relative to participants in neutral states, we wondered if we had not given money-reminded participants an opportunity to help in a way that really suited them. Perhaps being helpful by giving money is preferred among people whose minds have been reminded of money. Prior to the manipulation, we paid participants for their participation by giving them eight quarters (\$2). Participants were then nonconsciously reminded of money or neutral constructs and then were given a private opportunity to donate to the University Student Fund. In concert with findings on helping in terms of time, participants who had been unobtrusively reminded of money donated less than neutral participants. In fact, participants reminded of money donated only 39% of the money they had received compared to 67% in the control group.

To widen the scope of the findings, three additional experiments tested whether participants who were reminded of money preferred differing amounts of social contact. In one experiment, participants were reminded of money or nature by being exposed to one of two screensavers (see Figure 1). The screensavers were displayed on a computer that happened to be atop the desk where participants were seated. Afterwards, participants were told that the next task involved a getting-acquainted conversation with a participant who was down the hall. As the experimenter left the room, ostensibly to retrieve the would-be conversation partner, she pointed to a chair in the corner of the room and told the participant to pull that chair toward the participant's own chair for the upcoming interaction. Distance between the chairs was taken as a tacit sign of preferred social intimacy. The results showed that participants put more physical distance between themselves and the unacquainted interaction partner if the idea of money had been activated as compared to when it had not (Figure 1).

We also considered the idea that money prompts separateness from strangers but perhaps not from friends and loved ones. In one experiment, we exposed participants to money reminders by having them complete questionnaires while seated at a desk placed underneath a poster of hard currency (Figure 2) or a watercolor print (Figure 2). Afterwards, participants were



given a list of leisure activities and asked to indicate which they would find enjoyable. The list was organized such that participants were forced to choose between activities for one person (e.g., reading a favorite novel) versus shared activities (e.g., going to a café with a friend). To test whether being with loved ones would trump the tendency for money to prompt social separateness, the list specifically mentioned activities with friends, family, and loved ones. Nonetheless, money-reminded participants preferred solo leisure activities more than did neutral participants.

Given money's frequent use as an incentive for good performance or dedicated effort, we conducted three experiments related to task performance and persistence. When offered the choice to work on a task alone or with another participant, participants who had been reminded of money were three times more likely to choose to work alone (84% versus 28%; Figure 3). To work with someone else presumably means sharing some of the work (or at the very least doing the task oneself, in which case the workload would be the same as if completed by oneself) so we can safely assume that participants who chose to work alone recognized that they would be taking on more work by choosing to work alone. Thus, participants who nonetheless opted to work alone must have desired to be alone so much so that they were willing to be responsible for the entire job.

In two additional experiments involving performance-related behavior, participants were given difficult or impossible tasks and help was available from either the experimenter or a peer (respectively). Time spent working on the challenging tasks before requesting help was the dependant measure. Complementing the findings on offering help, participants reminded of money worked 48% longer, averaged across both experiments, before asking for help when compared to participants who were not reminded of money.

In summary, we found that small reminders of money produced large changes in behavior. Compared to neutral conditions, when the construct of money was activated participants behaved in ways that were both more desirable (persistence on challenging tasks;

taking on more work for oneself) and more undesirable (reduced helpfulness; placing more distance between the self and others) — in short, a mixed bag that echoes people's ambivalence toward money and the divergent findings observed in extant research.

#### KNOWN AND UNKNOWN

The effects of money on behavior are large and consistent – but also diverse. The most pressing questions we face currently surround understanding what accounts for the effects of money.

Self-sufficiency may or may not prove to be the best explanation for the data. We have no validated indicator of self-sufficiency and hence it is crucial to consider constructs instead of, or in addition to, self-sufficiency. We think it best to describe some of our null findings, a practice researchers generally think unwise. These null findings bear on some of the alternate explanations for the observed effects and, given that they occurred in experiments that showed other statistically significant results, they may be relevant. One null finding that deserves mentioning is the fact that participants report being in similar emotional states whether they had or had not been reminded of money. A lack of emotion differences assuages concerns that money renders people distrustful of others, anxious, or prideful, which in turn would account for our findings. We have encountered statements that our findings demonstrate that money makes people selfish. The idea that money leads to greed or selfishness seems to be part of American cultural lore (perhaps originating in Dickens's *A Christmas Carol*) but seems not to fit our data: A selfish person likely would have immediately asked for help when given a tough assignment (cf. aforementioned findings) and would have rejected the notion of accepting more work than was necessary (cf. Figure 3).

We are most eager to explore the idea that money leads to a perspective on the world that emphasizes inputs and outputs with an expectation of equity (cf. Fiske, 1991) – a perspective that would concomitantly emphasize performance and consequently harm interpersonal sensitivity. Looking forward, the link between money and feelings of personal

control, which surface repeatedly from studies on income, should be explored in comparison to our work showing that money enhances performance strivings. Unpublished findings from our laboratory suggest that the market pricing explanation is promising insofar as after people are reminded of money they show improved memory of exchange-related information, prefer exchange-based relationships, and follow equity rules.

*In Closing*

Money is a constant in modern life. Yet, there has been a dearth of basic experimental research on money's psychological underpinnings. We encourage scientists to turn their attention toward the cognitive, motivational, and behavioral consequences of money, as the centrality of money shows no sign of waning.

## END NOTES

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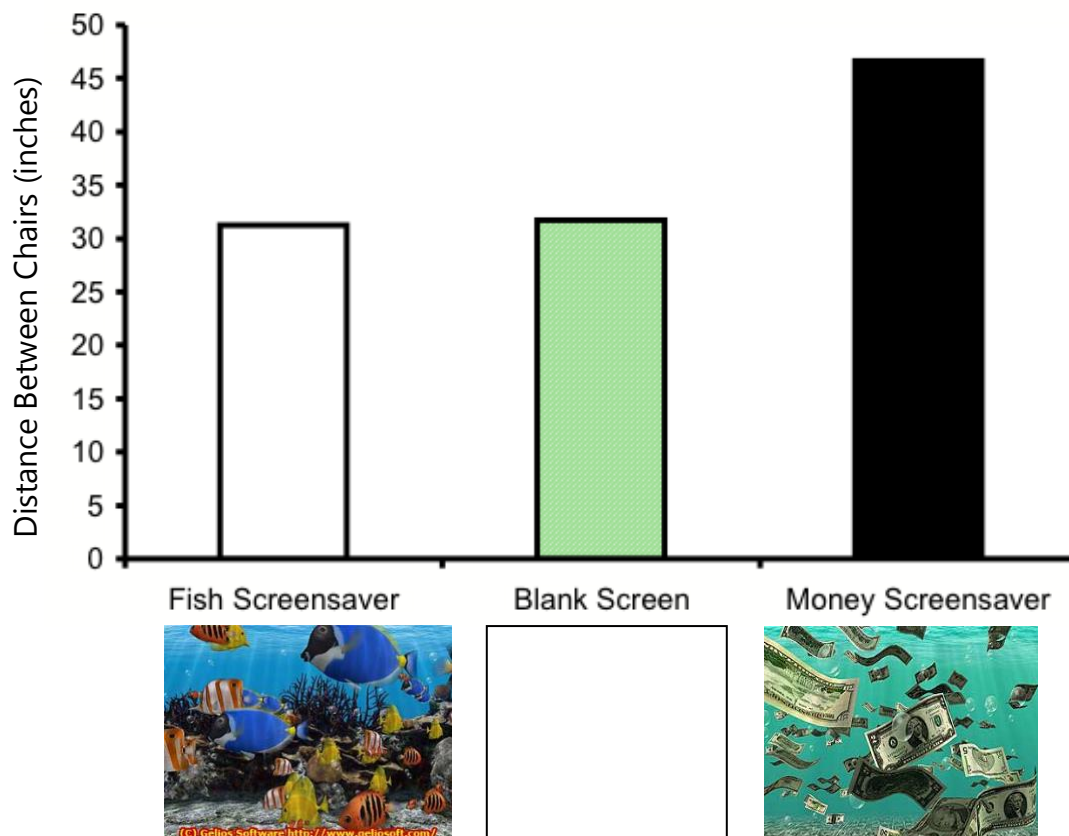
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*Science*, 314, 1154 - 1156. Discusses the experiments summarized in the current report, along with an expanded self-sufficiency theory of money.

Figure 1. Distance between chairs (in inches) as a function of prior exposure to a fish screensaver, no screensaver, or a fish screensaver. Participants' placement of their chair relative to an unacquainted participant's chair was considered an indicator of preferred social distance. Participants sat at a desk to complete a packet of questionnaires while one of the two screensavers (or a dark screen) could be seen in their visual periphery. Screenshots over the two screensavers can be seen below each bar graph; both are commercially available at [geliosoft.com](http://geliosoft.com).





Figures 2a and 2b: Posters used to prime money or neutral concepts. Participants sat at a desk to complete a packet of questionnaires and one of these posters could be seen out of participants' visual periphery.



Figure 3: Percentage of participants who chose to work with another participant (versus alone) on an upcoming task as a function of the screensaver to which they had been exposed earlier in the experiment (see Figure 1b and 1c for screensaver shots).

