



Supporting Online Material for

The Psychological Consequences of Money

Kathleen D. Vohs,* Nicole L. Mead, Miranda R. Goode

*To whom correspondence should be addressed. E-mail: kvohs@csom.umn.edu

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This PDF file includes:

Materials and Methods

Figs. S1 to S5

References

Supporting Online Material

Materials and Methods

Control Experiment

Participants and Design

Fifty-seven undergraduate students at the University of Minnesota were randomly assigned between two conditions: money prime or control prime. They received partial course credit for participating. One participants' data was not used because he linked the priming task to the word-stem completion task; this participant was assigned to the control condition.

Procedure and Materials

Participants completed one of two versions of a descrambling task in which participants read a list of five words and were to rearrange four of the words to create a sensible phrase. In the control condition, all 30 phrases were related to neutral concepts. In the money prime condition, half of the phrases related to the concept of money whereas the remaining pertained to neutral concepts.

We assessed whether the money prime heightened activation of the concept of money, relative to the control prime. Participants completed a word-stem completion task, which is a standard method of implicitly measuring cognitive activation (*SI*). Participants completed 20 word-stem completion items, seven of which could be completed as money-related or neutral words (e.g., CO __ could be completed as “coin,” “coil,” or “cord”). The stems that could be completed as money-related words were

spend, rich, cash, coin, money, fortune, and wealth.

The results showed the anticipated pattern of cognitive activation, such that participants in the money prime condition completed more word-stems with money-related words ($M = 1.69$, $SD = 1.09$) than did participants in the control (neutral prime) condition [$M = .96$, $SD = .86$; $t(54) = 2.70$, $P < 0.01$].

Post-experimental questionnaires indicated that no participants in the money prime condition were aware of the theme of the phrases nor connected the descramble task to the word-stem completion task.

Experiment 1: Method

Participants and Design

Fifty-two undergraduate students at the University of Minnesota were randomly assigned among one of three conditions: money prime, play-money, or control condition. They received partial course credit for participating.

Procedure and Materials

After the descramble task, participants completed a mood scale ($S2$) to check for mood differences after the manipulation. As anticipated, there were no emotional consequences of the manipulation for either positivity [$t(49) < 1$, not significant] or negativity [$t(49) = 1.06$, not significant] reports.

An insight problem was used to create an opportunity for participants to request help because diligent work on this type of problem does not give rise to a feeling of making progress – rather, when people solve the problem, the answer comes in a flash of insight. Hence, this type of problem was ideal for our purposes because it created a situation in which participants may want to ask for help after working on it. Participants

persisted at the problem until they indicated that they would like help or reached a ceiling of 10 minutes at which point they were stopped.

Post-experimental questionnaires indicate that no participants in the money prime condition were aware of the theme of the phrases.

Experiment 2: Method

Participants and Design

Thirty-eight undergraduate students from the University of British Columbia participated in exchange for extra course credit. They were randomly assigned to one of two between-subjects conditions: high money or low money.

Procedure and Materials

Participants were told that the experiment concerned communication styles and that because the textual information being presented had to be standardized across participants, they would be reading an essay written by a student at another university (see Appendix 1). Participants were asked to imagine themselves as the author and view the circumstances in the essay from the author's perspective.

To check for potential mood differences after the manipulation, participants completed a questionnaire to assess their current mood (*S2*). Results showed some unanticipated mood changes after the manipulation, such that participants in the high money condition reported more positivity [$t(36) = 2.10, P = 0.04$] and less negativity [$t(36) = 2.77, P = 0.01$] than participants in the low money condition. Importantly, there was no effect of positivity or negativity in determining when participants asked for help [positive: $F(1, 33) < 0.01$, not significant; negative: $F(1, 33) = 1.37$, not significant].

Next participants were given a line-tracing task. The experimenter first demonstrated the task with an easy practice figure and then asked participants to solve a second, easy practice figure. When participants understood the task and could solve their practice figure, they were left alone to solve the third figure, which was unsolvable.

The confederate rang a bell to alert the experimenter when participants asked for help, or when participants had reached a pre-established ceiling of 20 minutes. A post-experimental probe indicated that no participants connected the essay task to the line-tracing puzzle.

Experiment 3: Method

Participants and Design

Thirty-nine undergraduate students from the University of British Columbia participated in exchange for partial course credit. Experiment 3 was a between-subjects design with two cells: money versus control condition.

Procedure and Materials

After the manipulation, participants completed a scale to assess their current mood (S_2). As expected, no mood effects were found as a result of the money manipulation [positive: $t(37) = 1.31$, not significant; negative: $t(37) < 1$, not significant].

A post-experimental probe revealed that no participants associated the Monopoly game with the request for help from the experimenter, nor were participants suspicious of the request for help.

Experiment 4: Method

Participants and Design

Forty-four undergraduate students from the University of British Columbia participated in exchange for partial course credit or \$5. They were randomly-assigned to either a money or control condition in a between-subjects design.

Procedure and Materials

Participants arrived individually to take part in an experiment examining personality and cognition. The first task was the money manipulation: It was presented as a cognitive task. Then to check for mood differences as a function of condition, participants completed a mood questionnaire (S2). Consistent with expectations, the manipulation did not affect positive or negative mood [positive: $t(41) = 1.03$, not significant; negative: $t(41) < 1$, not significant].

Next, participants were asked to complete a personality measure. Unbeknownst to participants, this questionnaire was used as a filler task to ensure the participant was working on a task while the helping prompt was delivered. After one minute, the experimenter re-entered with a confederate, posing as another participant. The experimenter explained that they had run out of room in the laboratory, so this participant would be finishing her last task in the same room. When the experimenter left the room, the confederate surreptitiously started the timing and, after one minute, she asked the participant for help because she said she did not understand the task instructions. The confederate continued to feign confusion until participants told her that they could not help her any longer, instructed her to ask the experimenter, or they ignored her.

A post-experimental questionnaire indicated that no money condition participants were aware of the theme in the descramble task.

Experiment 5: Method

Participants and Design

Thirty-six undergraduate students from the University of British Columbia participated in exchange for partial course credit. Participants were assigned to one of three between-subjects conditions: high money, low money, or control. Data from three subjects were excluded, two because they reported suspicion regarding the helping measure and one because she was an acquaintance of the confederate.

Procedure and Materials

After participants completed the imagery task, participants completed a mood scale (S_2) to ensure there were no mood differences as a result of the money manipulation. Neither positivity nor negativity differed as a function of condition [positive: $F(2, 32) < 1.05$, not significant; negative: $F(2, 32) < 1.45$, not significant].

Number of pencils picked up by the participant was measured in two ways to ensure accuracy: 1) Each experimental session was surreptitiously videotaped and later coded by a research assistant who was blind to participants' condition. 2) When the confederate gathered pencils, she re-inserted them into the box from which they came; however, when participants handed the confederate pencils that they had gathered, she slipped them into a folder she was carrying. The reliability between the two measures was near perfect ($\kappa = .99$).

A post-experimental probe indicated that no participants saw a link between the Monopoly™ game and imagery task to the “accidental” spilling of the pencils.

Experiment 6: Method

Participants and Design

Forty-four participants from Florida State University were randomly assigned to one of two conditions, money or control, in a between-participants design. They received partial course credit and \$2 payment in return for their participation.

Procedure and Materials

After the descramble task, participants completed a scale to measure their current mood states (*S2*). No differences in mood were found as a function of condition [positive: $t(42) < 1$, not significant; negative: $t(42) < 1$, not significant].

After the fictitious debriefing, the experimenter gave the following information regarding the opportunity to donate:

“Our lab is currently taking up donations for the Student Fund, which provides students in need with money to purchase food, books, and any other related living costs. If you would like to donate, great, if not don’t worry about it. It’s completely up to you. If you would like to donate, drop your donation off in the box by the door on your way out.”

Participants were probed for suspicion regarding the money given at the beginning of the experiment, and none was aware of the connection between the money and the donation opportunity.

Experiment 7: Method

Participants and Design

Thirty-six participants from the University of British Columbia were randomly assigned to the conditions of money prime, fish prime, or no prime in a between-participants design. They received extra course credit in return for their participation.

Procedure and Materials

Participants came to the laboratory individually and were seated at a desk ostensibly to complete questionnaires, which were mainly superfluous. The purpose of this task was for participants to be exposed to one of three screensavers. On the desk was a computer that displayed the typical PC desktop scene for the first six minutes. At this point, the computer's screensaver switched on, delivering the prime. In the money prime condition (Fig. S1), the screensaver showed Canadian currency (participants were Canadian students) floating amid sea plants and seawater. In the fish prime condition (Fig. S2), the screensaver showed colorful fish swimming amid sea plants and seawater. Both screensavers were created by the same company (available for purchase at geliosoft.com), which meant that the underwater graphics were matched, as was rate of stimuli presentation. Participants in the no prime condition completed the questionnaires without the presence of a screensaver.

A pilot test using a separate sample of participants ($N = 21$) completed manipulation checks for the screensaver primes. Manipulation checks showed no differences between the money and fish screensavers in terms of how engaging, interesting, attractive, or eye-catching they were [engaging: $t(19) = 0.68$, not significant; interesting: $t(19) = 0.97$, not significant; attractive: $t(19) = 0.24$, not significant; and eye-catching: $t(19) = 0.68$, not significant].

The questionnaires that participants completed during the screensaver prime were irrelevant except one, a mood scale (S2), which was included to ensure that the primes did not affect participants' moods. As expected, there were no effects of screensaver condition on positive [$F(2,33) = 1.42$, not significant] or negative mood [$F(2,33) = 1.02$, not significant].

The other questionnaires in the packet were: Self-Construal Scale (*S3*), Perfectionism subscale of the Eating Disorder Inventory (*S4*), General Self-Efficacy subscale (*S5*), and self-ratings of personality traits (*S6*).

A post-experimental probe indicated that no participants were aware of the screensaver as a prime or the research hypotheses.

Experiment 8: Method

Participants and Design

Sixty-one participants from the University of British Columbia were randomly assigned to one of three between-subjects conditions: a money prime or one of two control conditions. Participants received \$8 in exchange for their participation.

Procedure and Materials

Participants sat at a desk that was facing one of three posters so as to be exposed to money or one of two control images. In the money condition, the desk faced a poster showing pictures of paper Canadian currency (to match the currency of participants' country; see Fig. S3). In the two control conditions, the participant's desk was facing a poster that depicted a flower garden (see Fig. S4) or a watercolor seascape (see Fig. S5).

A pilot test with a separate group of participants ($N = 37$) rated the posters as to how engaging, interesting, attractive, and eye-catching they were. There were no differences in ratings on these items as a function of poster [engaging: $F(2,34) = 0.32$, not significant; interesting: $F(2,34) = 0.41$, not significant; attractive: $F(2,34) = 2.55$, not significant; and eye-catching: $F(2,34) = 0.33$, not significant].

Participants in the main study completed a packet of mostly filler questionnaires while seated in front of the posters, included in which was a mood scale (*S2*). As

expected, there were no differences in participants' positive or negative moods as a function of condition [positive: $F(2,58) = 1.12$, not significant; negative: $F(2,58) = 0.74$, not significant].

Participants were allowed to finish the questionnaires at their own pace, which was not affected by condition. Mean time spent completing the questionnaires was 10 minutes 35 seconds, with no significant differences in duration among the three conditions [$F(2,41) = 1.00$, not significant].

Post-experimental probes indicated no suspicion or awareness of the posters as primes.

Experiment 9: Method

Participants and Design

Thirty-seven participants from the University of British Columbia were randomly assigned to the conditions of money prime, fish prime, or no prime in a between-participants design. Participants were given extra course credit in return for their participation.

Procedure and Materials

As in Experiment 7, participants completed the same packet of filler questionnaires while seated in front of a computer. In the packet was a questionnaire to check participants' mood ($S2$) after being exposed to the screensaver primes. Confirming expectations, participants' positive and negative moods were unaffected by the screensaver manipulation [positive mood: $F(2,35) = 1.13$, not significant; negative mood: $F(2,35) < 1$, not significant].

Post-experimental probes indicated no suspicion or awareness of the primes.

Figure S1: Money Screensaver used in Experiments 7 and 9



Figure S2: Fish Screensaver used in Experiments 7 and 9



Figure S3: Money Poster used in Experiment 8



Figure S4: Flower Poster used in Experiment 8



Figure S5: Seascape Poster used in Experiment 8



Appendix 1: Essays used in Experiment 2

High Money Condition

I come from a very affluent family, so I have never had to worry about money. I grew up in a really nice, big house, with a nanny and a couple of servants. My parents never spoke about money with me because they dealt with all the financial matters. I have never really had to think about money much. I know that since my family has money, I have been provided with more opportunities than the average person. I am a very fortunate person, I have had the chance to travel to Europe, Asia, Africa, and Australia several times each, and I usually spend my summers abroad. I can also participate in activities that I am interested in, such as sailing, horseback riding, and skiing, rather than ones that I have to go into. I also have had the opportunity to attend many diverse cultural events all over the world. I had my first job when I decided to start working part time in my second year of University and obtained a job that I really enjoy. I work because I enjoy it, rather than because I need the money. It's really nice that I don't have to worry about money much. I feel really comfortable and secure about my future knowing that money is not my central concern.

Low Money Condition

I come from a family that doesn't have much money. I grew up in a modest home, though it was small enough that I had to share a bedroom with one of my siblings. My family gets by okay usually, but occasionally there are times when my parents are pretty worried about making ends meet. Because of our financial situation, my opportunities have been rather limited. I haven't really had the chance to travel anywhere, because we

didn't have any extra money for excess expenditures, and I haven't been able to go to many cultural events. We always made the most of the money we had though, and once in a while we would go out for dinner to treat ourselves. I have always had to be pretty responsible and mature for my age, like when I was really young I had to get a job to help the family out. I didn't like the job particularly, but it helped pay the bills. Since it is so expensive to attend university, I am always on the look out for a better paying job. I try not to worry too much about money, but it is pretty difficult sometimes and money is always in the back of my mind. I feel really worried and apprehensive about my future when I start thinking about money.

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