



Seeing green: Mere exposure to money triggers a business decision frame and unethical outcomes

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ABSTRACT

Can mere exposure to money corrupt? In four studies, we examined the likelihood of unethical outcomes when the construct of money was activated through the use of priming techniques. The results of Study 1 demonstrated that individuals primed with money were more likely to demonstrate unethical intentions than those in the control group. In Study 2, we showed that participants primed with money were more likely to adopt a business decision frame. In Studies 3 and 4, we found that money cues triggered a business decision frame, which led to a greater likelihood of unethical intentions and behavior. Together, the results of these studies demonstrate that mere exposure to money can trigger unethical intentions and behavior and that decision frame mediates this effect.

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Introduction

Judas betrayed Jesus for 30 pieces of silver. For [Dante \(14th century/1985\)](#) Judas' crime condemned him to the lowest level of hell. Indeed, Judas has been known throughout the centuries as an archetype of immorality. The repugnance of Judas' behavior is in the severing of social bonds for mere money. Scholars through time and across disciplines have told and continue to tell us that morality is rooted in social relations. As [Rai and Fiske \(2011, p. 57\)](#) put it, "moral intuitions are not based on asocial principles of right actions... Rather, moral intuitions are defined by the particular types of social relationships in which they occur." Similarly, [Haidt and Keeser \(2010, p. 800\)](#) explained, "moral systems are interlocking sets of values, virtues, norms, practices, identities, institutions, technologies, and evolved psychological mechanisms that work together to suppress or regulate selfishness and make social life possible." That is, as social animals our notion of morality involves standards of conduct within the embedded social context which function to coordinate and facilitate survival ([de Waal, 2006](#); [Haidt, 2008](#)). Importantly, morality is not restricted to direct harm; rather, it is a broad cooperative scheme entailing restrictions on anti-social behaviors that may be considered wrong even in the absence of harm (cf. [Kant, 1785/1964](#)). The roots of morality in social relations are deep. [De Waal \(1996\)](#) has famously argued that

morality is based in empathy and that empathy is a capacity we see in other primates, not just in human beings, suggesting that we as human beings were hardwired very early on with this socially based capacity for emotion and morality.

While social bonds may promote morality, weak social bonds may make immorality more likely. And, of course, we know that despite our hardwired capacity toward morality, we fail to always act morally. What is it that can weaken the hold of social relations? One compelling answer comes from [Marx \(1844/1964, p. 119\)](#) who argued that money, a ubiquitous presence in modern commercial society, can corrupt human nature itself, weakening or severing our social bonds: "As this perverting power, money then appears as the enemy of man and social bonds that pretend to self-subsistence." What is arguably more fascinating is the influence of subtle exposure to money on behavior and decisions—the influence that the mere presence of money or a symbolic representation of money may have on us without our awareness (e.g., [Zhou, Vohs, & Baumeister, 2009](#)). For instance, [Vohs, Mead, and Goode \(2006\)](#) found that participants primed with money were more likely to choose an individual activity (e.g., four personal cooking lessons) over a group activity (e.g., an in-home catered dinner for four). What we do not know, however, is what the effects of subtle exposure to money on morally relevant outcomes might be. Money is a ubiquitous feature of modern life and business organizations, in particular. As such, this question of whether mere exposure to money might influence individuals' morally relevant behavior becomes especially important. That is, money may be a more

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insidious corrupting factor than previously appreciated, going well beyond the often lamented “love of money” to touch even those not overtly motivated by greed.

In the current paper we address this void in the literature by considering the role of exposure to the construct of money in immorality. We extend the prior work on the potential outcomes that can result from the activation of the construct of money by demonstrating that exposure to money can lead to unethical outcomes. We further demonstrate that a “business decision frame” (Tenbrunsel & Messick, 1999) mediates this effect. Theoretically, we argue that a business decision frame entails objectification of social relationships (either those who stand to be directly harmed, or others more broadly construed) in a cost–benefit calculus in which self-interest is pursued over others’ interests (i.e., it entails a focus on one’s gains and losses largely to the exclusion of benefits and costs to others); as such, it weakens social bonds and thus the pull of morality. Even in instances when there is not a particular social relationship at stake, such objectification means that one does not think about others in general; rather, one thinks about self-interest in maximizing one’s outcomes even if it means violating the moral rules that constitute the fabric of society.

In what follows we first review the literature on money and its link to immorality. Then, we present our argument that it is through a business decision frame that mere exposure to the construct of money can lead to unethical outcomes. Finally, we report the results of four studies consistent with our theorizing and discuss the findings and their implications.

The money–immorality association

The research of Vohs and her colleagues (e.g., Vohs et al., 2006) has demonstrated the important effects of subtle exposure to money and its symbolic representations. Primarily relying on Fiske’s (1991) relational models theory as a base from which to reason, Vohs, Mead, and Goode (2008) stated that “market pricing underlies cost/benefit analyses, in that a person considers what he or she will receive in return before enacting a given behavior. Because money is the most typical form of market pricing, over time, the mere presence of money should elicit a market-pricing orientation toward the world” (Vohs et al., 2008, p. 209). Market pricing (MP), identified by Fiske (1992), is one of four basic mental models people use to coordinate almost all social interactions, where relationships are “based on a model of proportionality in social relationships; people attend to ratios and rates. People in an MP relationship usually reduce all the relevant features and components under consideration to a single value or utility metric that allows the comparison of many qualitatively and quantitatively diverse factors” (p. 692). Vohs et al. (2008, p. 209) theorized that self-sufficiency, which they defined as “... an emphasis on behaviors of one’s own choosing accomplished without active involvement from others,” could accompany a market pricing orientation. Empirically, researchers have demonstrated that activating the construct of money leads, for example, to taking on more work for oneself, reduced helpfulness, and placing more distance between the self and others (Mogilner, 2010; Vohs et al., 2006); though these findings are consistent with the self-sufficiency explanation, self-sufficiency has not been directly empirically demonstrated as a mechanism underlying these effects.

Vohs et al.’s (2006, 2008) reasoning and findings suggest that exposure to the construct of money strains social relationships. Moreover, Mogilner and Aaker (2009) showed that activating money (compared to time) decreased people’s feelings of personal connection to others. Other researchers have begun to express similar notions by conceptualizing Fiske’s (1992) market pricing

relationships as either social or based on economic exchanges and labeling the latter as “money–market” relationships (Heyman & Ariely, 2004). Consistently, there is a considerable body of literature in sociology arguing that money depersonalizes relationships (e.g., Baker & Jimerson, 1992; Coleman, 1974, 1990; Giddens, 1990; Simmel, 1907/1978; also see, for example, Marx, 1844/1964). Levine (1985) went so far as to state that money suppresses people’s “emotional or sentimental disposition” (p. 202).

So why might depersonalization of social relationships as a product of exposure to the construct of money matter morally? Generally speaking, morality has been said to be embedded in social relationships (e.g., Haidt & Kesebir, 2010; Rai & Fiske, 2011). The more tenuous the relationship, or social bond, the less morality matters. This notion is consistent with reasoning concerning circles of moral regard, whereby those outside the metaphorical circle (those with whom our social bonds are weak) are less worthy of our moral regard (Reed & Aquino, 2003; Singer, 1981). Likewise, we tend to show greater moral consideration to our in-group members than we do toward members of out-groups (Reed & Aquino, 2003). When individual targets are objectified and the social bonds with them weakened, the psychological evidence seems clear that they are treated in less moral ways (e.g., Gruenfeld, Inesi, Magee, & Galinsky, 2008; Loughnan et al., 2010).

Research also has shown that concepts that are closely associated in the mind are often activated by one another and that such automatic activation affects subsequent judgment and behavior (e.g., Bargh, 1990, 2006; Hebb, 1949). Primes have been shown to exert effects on perception and behavior by increasing the accessibility of relevant and applicable cognitive constructs (Higgins, 1996). In light of this work, and the fact that money and immorality are commonly linked, we expect that this association would affect subsequent intentions and behavior.

Based on the above rationale, we hypothesized the following:

Hypothesis 1. Mere exposure to the construct of money increases the likelihood of unethical outcomes.

Our hypothesis, if empirically supported, significantly extends psychological research on money to promote an understanding of the connection between money and morality. While previous research has shown that financial incentives are associated with lying and cheating (Ariely, 2008, 2009; Hegarty & Sims, 1978), the rationales provided for such were not money-centric as is ours. An exception to this observation is the work of Gino and Pierce (2009) who showed that interactions with an exchange partner who appeared relatively wealthy led to more dishonesty than interactions with a poorer partner. Here, however, we are interested in the effects of money per se rather than the effects of relative wealth. Further our interest rules out Gino and Pierce’s explanation for the effects of relative wealth (envy) as a plausible explanation for our proposed effects as our participants did not experience any disparity of monetary distribution.

In addition, as we noted previously, exposure to the construct of money has been shown to be associated with less prosocial behaviors, and such behaviors can be construed as falling into the moral domain. But, as noted by Bradley, Brief, and Smith-Crowe (2008), while being decent and avoiding morally repugnant behaviors (e.g., stealing) are desirable, they do not constitute being good (e.g., helping one in need) (also see Kant, 1785/1964; Solomon, 1994). That is, doing good morally is not the opposite of being bad; rather, they are qualitatively distinct (cf. Janoff-Bulman, Sheikh, & Hepp, 2009). Here, our focus is on immoral/unethical behaviors. In sum, while other research may seem to directly address the association between exposure to money and immorality, we argue based on the reasons given that we are plowing new ground.

Money, business decision frame, and unethical outcomes

Though mechanisms underlying the effects of money primes have been proposed, they have rarely been empirically examined. The most commonly theorized mechanism has been self-sufficiency, described previously as "... an emphasis on behaviors of one's own choosing accomplished without active involvement from others" (Vohs et al., 2008, p. 209; see also Vohs et al., 2006). Derived from the self-sufficiency explanation, social connection (Mogilner, 2010; Mogilner & Aaker, 2009) and threat (Liu, Smeesters, & Vohs, 2012) have been tested empirically as underlying mechanisms of the effects of money primes on non-ethically relevant outcomes. Mogilner and Aaker (2009) demonstrated that money primes (compared to time primes) decreased people's feelings of personal connection to others and affected product decisions and attitudes. Liu and colleagues found that money-primed participants who experienced social influence attempts led to reactance against social influence as the result of feeling threatened.

Importantly, the work on money primes to date has not focused on morality; so too the proposed mechanisms have not been connected to morality. Given our interest in unethical outcomes and our understanding of money as a multi-faceted concept (Doyle, 1992; Lea & Webley, 2006; Maurer, 2006; Mitchell & Mickel, 1999; Tang, 1992), we assume that money may have associations beyond those already considered, and that there are other associations that would be more relevant to morality. Here we focus specifically on a business decision frame as an underlying mechanism between exposure to money and ethically relevant outcomes. We focus particularly on this mechanism as it is related to money and has been implicated in previous research as an important precursor to unethical outcomes (Tenbrunsel & Messick, 1999; Tenbrunsel & Smith-Crowe, 2008). Below, we explicate our reasoning for proposing a business decision frame as a mediator variable.

According to Tversky and Kahneman (1981), a decision frame is "the decision-maker's conception of the acts, outcomes, and contingencies associated with a particular choice" (p. 453). A decision frame is similar to the notion of situational construals, which represent "perceptions of how a typical individual, or most actors generally, might behave in (a given target) situation" (Kay & Ross, 2003, p. 635). How a given situation is framed is influenced by various factors including norms and individual differences (Kay, Wheeler, Bargh, & Ross, 2004; Tversky & Kahneman, 1981). We suggest that environmental cues such as money are one of the factors influencing the decision frame activated, and, as such, environmental cues can affect intentions and behavior (e.g., Messick, 1999).

Our thinking is aligned with Vohs et al. (2008) who argued that because money is the most typical form of "market pricing" (Fiske, 1991), over time its mere presence can elicit a "market pricing orientation." Clearly money-business associations are common. Along these lines, we assume that the mere presence of money can elicit a business decision frame (Tenbrunsel & Messick, 1999) which prompts the objectification of others (either those who stand to be directly harmed, or others more broadly construed) in a cost-benefit analysis in which self-interest is pursued over others' interests. When a business decision frame is triggered, self-interest concerns dominate (e.g., Tenbrunsel & Messick, 1999). That is, when individuals perceive a situation through a business decision frame, they are prompted to make decisions on the basis of self-interest to the exclusion of other considerations (Tenbrunsel & Messick, 1999). Because other considerations are largely absent, including moral considerations, decisions made in a business frame are likely to align with the decision option associated with the greatest personal benefit and the least personal cost regardless of the ethical implications.

Importantly, a business decision frame can be distinguished from the notions of a market pricing orientation (Fiske, 1992) and

an economic decision frame (Pillutla & Chen, 1999). First, while a business decision frame entails objectification and self-interest, market pricing (Fiske, 1992) is characterized by a focus on proportionality (Rai & Fiske, 2011) and therefore, interests beyond the self are considered (e.g., equity theory; Adams, 1965). That is, market pricing does not imply objectification; rather, others' interests are part of the utility calculus. While we assume that reminders of money can elicit a business decision frame in addition to a market pricing orientation, it is the former that threatens morality. That is, a business decision frame entails the weakening of social bonds, thus making ethical considerations unlikely; a market pricing orientation, however, does entail a consideration of others, making ethical considerations likely. Second, the notion of a business decision frame is distinguishable from an economic decision frame, which is defined as "one where individuals are primarily concerned with material or pecuniary ends" (Pillutla & Chen, 1999, p. 84). In particular, it is the singular relevance of commodities to an economic frame that serves as a distinction between these related types of frames. That is, while an economic frame is focused on commodities, a business frame is not necessarily; a business frame entails not only a focus on the pursuit of self-interest but also the weakening of social bonds (such as in the saying, "it's not personal, it's just business"). Because social bonds are not commodities (Pillutla & Chen, 1999), an economic frame would not necessarily entail a weakening of social bonds, perhaps only indifference to them.

Consistent with our reasoning regarding a business decision frame, other researchers too have linked it with unethical behavior (e.g., Tenbrunsel & Smith-Crowe, 2008). Notably, Gioia (1992) discussed how, as a recall coordinator at Ford in the early 1970s, he was confronted with information indicating the moral necessity of recalling the deadly Ford Pinto car, which was susceptible to gas tank ruptures and explosions in low impact collisions, but in the context of his job, the moral necessity of the recall was not apparent to him. As he later explained, he perceived the decision to recall the Pinto to be a business decision, not a moral one. Based on the numbers, which indicated that in a business sense the losses were within acceptable parameters, Gioia and his colleagues twice voted not to recall the Pinto despite the danger to consumers. As is illustrated by this example, as well as other research in this area (Butterfield, Treviño, & Weaver, 2000), business decision frames and ethical outcomes can be conflicting.

In sum, the above reasoning leads us to the following hypotheses.

Hypothesis 2. Mere exposure to the construct of money increases the likelihood of a business decision frame being triggered.

Hypothesis 3. Decision frame mediates the relationship between mere exposure to money and unethical outcomes, such that money triggers a business frame which leads to more unethical outcomes.

The testing of Hypotheses 2 and 3 represents a rare empirical look into the mechanisms behind the effects of money. Moreover, while other research has focused theoretically on non-moral outcomes, and has correspondingly focused on mechanisms that do not appear to be related to moral outcomes, we consider a mechanism theoretically connected to moral outcomes. As such, support for these hypotheses would constitute an important advancement in our understanding of the effects of the mere exposure to money on morally relevant outcomes, and why these effects occur.

Overview of studies

We conducted four studies to test our hypotheses; we employed both intentional and behavioral measures of unethical

outcomes. In Study 1, we examined the effect of money primes on unethical intentions. In Study 2, we examined money primes as a trigger of a business decision frame. In Study 3, we tested a business decision frame as a mediator of the relationship between money primes and unethical behavior. Finally, in Study 4, we again tested a business decision frame as a mediator of the relationship between money primes and unethical outcomes (both unethical intentions and behavior), as well as empirically ruling out several alternate explanations for our findings.

Study 1

Method

Participants

Participants were 50 undergraduates at a university in the United States (30 males) who participated in exchange for course credit in their introductory business course. Their mean age was 25 years ($SD = 6.6$). They had an average of 4.4 years ($SD = 4.0$) of part-time work experience and 4.7 years ($SD = 3.3$) of full-time work experience.

Materials and procedure

Participants were randomly assigned to either the money or control condition. First, participants were primed with money or neutral cues using a descrambling task (Vohs et al., 2006) in which words were arranged to make sentences that either referenced money or did not. In the money condition, 15 phrases were money-related (e.g., “She spends money liberally”) and 15 phrases were neutral (e.g., “She walked on grass”). In the control condition, all 30 phrases were neutral.

Next, participants’ intention to engage in unethical behavior was measured using a series of scenarios (Detert, Treviño, & Sweitzer, 2008). Participants were given a total of 13 scenarios and were asked to read the scenarios and indicate “How likely is it that you would engage in the behavior described?” using a 7-point scale ranging from 1 (not at all likely) to 7 (highly likely). The set of scenarios is composed of eight ethically relevant scenarios plus five additional ones created to represent behaviors that were not thought to be unethical. A sample scenario is this:

You work as an office assistant for a department at a University. You’re alone in the office making copies and realize you’re out of copy paper at home. You therefore slip a ream of paper into your backpack.

A measure of unethical intention was created by averaging responses to the eight ethically relevant scenarios, $\alpha = .77$, presented to participants.

Results and discussion

In support of Hypothesis 1, there was a significant difference between the two conditions. Participants in the money condition indicated that they were more likely to engage in the described unethical behavior ($M = 4.14$, $SD = .85$) than those in the control condition ($M = 3.37$, $SD = 1.16$), $t(48) = 2.71$, $p = .009$, $d = .76$. We next ran a 2×2 mixed model ANOVA with prime condition (money vs. neutral) as the between-subjects factor and type of scenario (ethically-relevant vs. control) as the within-subjects factor to assess the effect of our prime on different type of scenarios. The analysis indicated a main effect of type of scenario, $F(1,48) = 83.61$, $p < .001$, partial $\eta^2 = .64$, meaning that participants responded differently to the ethically-relevant scenarios compared to the neutral ones. Of importance, the interaction effect of prime condition by type of scenario was marginally significant

$F(1,48) = 3.41$, $p = .06$, partial $\eta^2 = .07$, indicating that the impact of money primes on intention appeared primarily with the ethically relevant scenarios and not with the control (non-ethically relevant) ones. Thus, using a measure of unethical intentions, we showed that, as predicted, money primes influence intention to behave unethically. The importance of this finding is that money, purely as an environmental cue, prompts unethical outcomes. To our knowledge, ours is the first study to demonstrate this effect.

The purpose of the next study was to test Hypothesis 2, the hypothesized link between money primes and a business frame. More specifically, we designed Study 2 to test whether the presence of money cues would trigger a business frame. This study is important because it allows us to establish the link between our independent variable (money cues) and proposed mediator (business decision frame). Here decision frame is the dependent variable, but we test it as a mediator in Studies 3 and 4.

Study 2

Method

Participants

Participants were 118 undergraduates at a university in the United States (75 males) who participated in exchange for course credit in their introductory business course. Their mean age was 24 years ($SD = 4.5$). They had an average of 3.7 years ($SD = 2.4$) of part-time work experience and 3.8 years ($SD = 5.2$) of full-time work experience.

Materials and procedure

We used a 2 (prime: money vs. control) by 2 (type of prime: descrambling task vs. image) between-subjects design. Participants were randomly assigned to one of these four conditions. Participants were primed with money or neutral cues via the same descrambling task used in Study 1 or using an image (i.e., a picture of currency or a landscape, respectively; Vohs et al., 2006).

Next, all participants engaged in a word-completion task to examine implicitly whether priming resulted in activation of business related thoughts (i.e., we examined decision frame by considering how word fragments were completed); in doing so we tested Hypothesis 2 that money cues would trigger a business decision frame. Word-completion tests have been shown to assess implicit cognitive processes (for a review see Fazio & Olson, 2003), thus allowing us to test whether or not participants’ choice of words and their implicit thought processes were influenced by the prime. Participants were given a list of words with letters missing and were asked to make meaningful words using the first word that came to mind. Of the six word fragments, three (M A R _ _ , D E _ _ , and T R A _ _) could be completed as business-related words (market, deal, and trade) or as unrelated words (e.g., marble, dear, and track). The other three word fragments (F A _ _ , N _ A _ , and C O _ _) were used as controls that could be completed as non-business words (fade, neat, and coat).

Results and discussion

We hypothesized that those participants primed with money would be more likely to use words related to business compared to those in the control condition. Given that the dependent variable is a count variable, we ran a loglinear Poisson regression model using the number of business related words generated by participants as the dependent variable, and prime (money vs. control), type of prime (descrambling task vs. image), and their interaction as the predictors. Consistent with our prediction, the only significant predictor of number of business related words was prime

($M_{\text{money}} = .92$, $SD = .79$ vs. $M_{\text{neutral}} = .49$, $SD = .54$), $b = .55$, odds ratio = 1.74, Wald $\chi^2 = 3.68$, $p = .054$. Prime type ($b = .11$, odds ratio = 1.12, Wald $\chi^2 = .07$, $p = .79$, ns) and the interaction of prime and prime type ($b = .24$, odds ratio = 1.27, Wald $\chi^2 = .24$, $p = .63$, ns) were not independent predictors of number of business related words generated by participants.

These findings suggest that money primes increased the accessibility of business-related concepts. As we have discussed, our research goes beyond previous research by investigating the mechanism underlying connections between the presence of money primes and outcomes. We argue that a business decision frame mediates the connection between money cues and unethical outcomes. We test this mediation hypothesis (Hypothesis 3) in Studies 3 and 4 using different measures of unethicality (both intention and behavior measures) and decision frame. Our purpose in employing different measures is to improve the generalizability of our results beyond any particular measure.

Study 3

Method

Participants

Participants were 91 undergraduates at a university in the United States (61 males) who participated in exchange for course credit in their introductory business course. Their mean age was 24 years ($SD = 4.9$). They had an average of 3.3 years ($SD = 2.5$) of part-time work experience and 3.7 years ($SD = 3.8$) of full-time work experience.

Materials and procedure

Participants were randomly assigned to either the money or control conditions, and they were given the same descrambling task used in previous studies (Vohs et al., 2006). Next, participants played a deception game (Gneezy, 2005) in which they had to decide whether to lie to another participant to potentially earn \$5 rather than \$2. Because participants in both conditions could earn money, it is a conservative test of our hypotheses. The task was described to participants as an online decision making task in which they were led to believe that they were randomly paired with another player who was also completing the task and that neither of them would know the other's identity.

The game involves two players, and two possible monetary payments: Option A gives \$5 to Player 1 and \$2 to Player 2 and Option B gives \$2 to Player 1 and \$5 to Player 2. Only Player 1 knows what the options are. Player 2 knows that there are two options but has no other information. However, Player 2 chooses between the two options based on a message that Player 1 sends. Importantly, Player 1 can send one of two messages. One of the messages (Message 1) is a lie: Option A will earn Player 2 more money than option B. The other message (Message 2) is true: Option B will earn Player 2 more money than option A. In sum, the deception game assesses Player 1's willingness to lie to benefit herself or himself at the cost of the other player.

The structure of the game was presented to the participants and then they were told that they had been randomly assigned to the role of Player 1. In reality, however, all participants played the role of Player 1. The procedure was then summarized again to ensure that all participants understood the task. After reading the instructions, participants selected either Message 1 (the lie) or Message 2 (the truth). The dependent variable was whether they chose to send the truthful message or the lie. After the message was ostensibly transmitted to the other party, participants responded to a question (adapted from Tenbrunsel and Messick (1999)) assessing the extent to which they agreed with the statement that "This was

primarily a business decision" (1 = strongly disagree, 7 = strongly agree). Participants were debriefed and paid in cash at the end of the session.

Results and discussion

As predicted, participants who were primed with money cues were more likely to lie. The money prime led to twice as much lying (46%) as the control (22%), ($b = -1.08$, odds ratio = .34, Wald $\chi^2 = 5.38$, $p = .020$). Next, we carried out a bootstrapping procedure to determine whether decision frame mediated the relationship between money prime and lying. Consistent with Preacher and Hayes's (2004) guidelines, mediation was tested by estimating the direct and indirect effects and deriving bias-corrected confidence intervals for the indirect effect of condition on individuals' unethical behavior through the mediator, decision frame. Results of the bootstrapping analysis revealed that priming condition had a statistically significant effect on decision frame ($b = .83$, $SE = .34$, $p = .018$), which in turn significantly affected lying ($b = -.66$, $SE = .20$, $p = .001$). Indeed, the effect of the condition was reduced to non-significance (from $b = -1.08$, $SE = .47$, $p = .023$, to $b = -.81$, $SE = .51$, $p = .11$) when decision frame was included in the equation. The bootstrap analysis (with 5000 iterations) showed that the 95% bias-corrected confidence interval for the size of the indirect effect excluded zero (-1.329 , $-.089$), suggesting that decision frame mediated the effect of money prime on lying (MacKinnon, Fairchild, & Fritz, 2007).

While we found support for our proposed underlying mechanism in Study 3, we were unable to rule out alternative explanations for why the mere presence of money could lead to unethical behavior. Previous research suggests that money primes could be related to things besides a business decision frame. Thus, in Study 4, in addition to our proposed underlying mechanism, business decision frame, we empirically test for the influence of possible alternative explanations of self-sufficiency, competitive decision frame, power, and affect. Furthermore, in Study 3 we measured the mediator after the dependent variable, thus, there is a concern that those who chose to engage in unethical behavior (i.e., lied) then justified it by claiming it was a business decision. We address this issue in Study 4 by including a second dependent variable to investigate whether the decision frame measured after the first dependent variable mediates the effect of priming on a second dependent variable as well as the first dependent variable.

Study 4

Method

Participants

Participants were 65 undergraduates at a university in the United States (44 males) who participated in exchange for course credit in their introductory business course. Their mean age was 24 years ($SD = 4.3$). They had an average of 4.4 years ($SD = 4.1$) of part-time work experience and 3.1 years ($SD = 4.0$) of full-time work experience.

Materials and procedure

Participants were randomly assigned to either the money or control conditions and they completed the same descrambling task used in previous studies (Vohs et al., 2006). Next, we used a hiring scenario (adapted from Butterfield et al. (2000)) to assess the effect of the money prime on unethical decisions. Participants were instructed to carefully read the scenario and to try to put themselves in the shoes of the main character and experience the person's thoughts and feelings. They were presented with a hiring situation

in which as the managing director they were responsible for recruiting a new assistant marketing manager. Further, they were told that they interviewed a candidate who appeared to be qualified for the job. When the interview was finished and a few minutes were left, the candidate was asked what he could do for the company that someone else could not. In response, the candidate implied that if he were hired he could provide the company with access to confidential information that would benefit the company. Next, all participants were asked to indicate how likely they would be to hire this candidate for the job on a 9-point scale (1 = not likely at all, 9 = very likely).

Afterwards, participants were asked to answer a few questions regarding their likelihood of hiring the candidate. These questions constituted measures of our proposed underlying mechanism, business decision frame, as well as alternate explanations (self-sufficiency, competitive decision frame, power, and affect). To assess whether participants reminded of money had adopted a business decision frame, participants rated the extent to which their decision was primarily a business decision, how businesslike the situation was, and how businesslike they behaved, $\alpha = .71$ (adapted from Liu et al. (2012) and Tenbrunsel and Messick (1999)). Similarly, for a competitive decision frame, participants were asked to rate the extent to which their decision was primarily a competitive decision, how competitive the situation was, and how competitive they behaved, $\alpha = .70$ (adapted from Liu et al. (2012) and Tenbrunsel and Messick (1999)). The order of the frame questions was counterbalanced. Afterwards, participants filled out a survey containing PANAS items to measure current affect (Watson, Clark, & Tellegen, 1988), as well as six items measuring feelings of power, $\alpha = .65$ (Liu et al., 2012). Furthermore, we included a few items measuring self-sufficiency. For this, participants rated their current feelings on five items: self-sufficient, self-determined, self-reliant, self-sustaining, independent, $\alpha = .86$. All items were rated on 7-point scales (1 = not at all, 7 = very much).

At the end of the study, about 5–10 min later, we administered a second dependent variable. Participants were asked to complete a visual perception task (Gino, Norton, & Ariely, 2010) in which they could earn more money by lying. In each trial of the visual perception task, participants were presented with a square divided into two triangles with 20 dots scattered inside the two triangles. The pattern of dots would appear for one second and then disappear, and participants were asked to indicate which triangle, the left or right triangle, contained more dots. Participants were told that they would be paid based on their performance and that the payoff for each triangle was different. They were informed that since for most people it is harder to see the dots on the right side, they would be paid five cents for each trial that is identified as “right trial” (i.e., having more dots on the right). However, they would be paid a half a cent for each trial identified as “left trial.”

Importantly, the program paid participants based on their clicks, regardless of correct answer and, therefore, participants had an opportunity to cheat and earn more money. They could simply indicate on each trial that there were more dots on the right side.

Participants were not explicitly told that they could earn more money by cheating. Rather we gave them 100 practice trials without pay in which they received feedback as to how much they could have earned if they were actually playing. The practice trials were intended to help participants notice that they had an opportunity to cheat and that the program would pay based on their answer regardless of whether it was correct. After the practice trials, participants played 100 trials for payment. They could earn up to \$5 by always indicating more dots on the right side. In the 100 trials, there were three types of trials. There were 16 right trials in which the answer was clearly “more on right” (i.e., the ratio of the number of dots on the right to the number of dots on the left was greater than or equal to 3:2), 34 left trials in which the answer was clearly “more on left” (i.e., the ratio of the number of dots on the right to the number of dots on the left was less than or equal to 2:3), and 50 ambiguous trials (i.e., the ratio of the number of dots on the right to the number of dots on the left was between 2:3 and 3:2). At the end, participants were paid based on their answers.

Results and discussion

We looked at the effect of priming on participants' hiring decision in the two conditions. Consistent with our prediction, participants in the money condition ($M = 5.13$, $SD = 2.46$) were more likely to hire the candidate with confidential information than those in the control condition ($M = 3.71$, $SD = 2.44$), $t(63) = -2.34$, $p = .023$, $d = .58$. Moreover, we found that the effect of priming on a business decision frame was significant such that those in the money condition ($M = 5.03$, $SD = 1.12$) were more likely to see the situation as a business one than those in the control condition ($M = 4.25$, $SD = 1.69$), $t(63) = -2.19$, $p = .032$, $d = .54$. We tested whether money cues affected any of the variables representing alternate explanations for our findings: a competitive decision frame ($M_{\text{money}} = 5.48$ vs. $M_{\text{neutral}} = 5.07$), feelings of power ($M_{\text{money}} = 4.56$ vs. $M_{\text{neutral}} = 4.25$), self-sufficiency ($M_{\text{money}} = 5.44$ vs. $M_{\text{neutral}} = 5.67$), affect (both positive mood, $M_{\text{money}} = 4.75$ vs. $M_{\text{neutral}} = 4.73$; and negative mood, $M_{\text{money}} = 2.41$ vs. $M_{\text{neutral}} = 2.71$). Prime condition did not have a significant effect on any of the variables representing alternative explanations. See Table 1 for the descriptive statistics and correlations for all measures. The lack of main effects for the alternative explanations is consistent with Liu, Smeesters, and Vohs's (2012) finding that money primes did not impact feelings of power, affect, or the construal of the situation as a competitive one.

Table 1
Descriptive statistics and correlations.

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10
1. Money condition	.48	.50										
2. Hiring decision	4.38	2.54	.28*									
3. Right clicks	68.62	18.57	.30*	.29*								
4. Clear-left trials	21.83	7.54	.32**	.30*	.98**							
5. Ambiguous trials	33.42	9.59	.24*	.26*	.98**	.93**						
6. Business frame	4.62	1.49	.27*	.47**	.25*	.26*	.24*					
7. Competitive frame	5.27	1.28	.16	.04	.19	.20	.13	.15				
8. Power	4.40	.80	.20	-.20	.19	.21	.18	-.16	-.10			
9. Self-sufficiency	5.44	.91	-.12	-.36**	-.05	-.04	-.05	-.04	-.01	.19		
10. Positive affect	4.74	1.11	.01	-.15	-.02	-.02	-.02	.24*	.03	.27*	.53**	
11. Negative affect	2.55	1.05	.15	.19	.21	.18	.24*	-.09	-.14	-.10	-.44**	-.35**

* Correlation is significant at the .05 level (2-tailed).

** Correlation is significant at the .01 level (2-tailed).

We further tested to see whether participants primed with money were more likely to engage in unethical behavior on the second dependent variable, the visual perception task. Indeed, as predicted, participants primed with money clicked right more often ($M = 74.50$, $SD = 17.51$) compared to those in the neutral condition ($M = 63.44$, $SD = 18.16$), $t(62) = -2.47$, $p = .016$, $d = .62$, earning 57 more cents on average. Then we examined “clear” cheating by looking at the number of times participants chose right when there were clearly more dots in the left side. As predicted, in trials where there were clearly more dots on the left participants in the money condition indicated that there were more dots on the right more frequently ($M = 24.40$, $SD = 7.09$) than did those in the neutral condition ($M = 19.56$, $SD = 7.29$), $t(62) = -2.69$, $p = .009$, $d = .67$. We also examined the number of times participants indicated that there were more dots on the right side in ambiguous trials. Again, participants in the money condition indicated that there were more dots on the right side more frequently ($M = 35.87$, $SD = 9.40$) than participants in the neutral condition ($M = 31.26$, $SD = 9.37$), $t(62) = -1.96$, $p = .05$, $d = .49$. In sum, these results indicate that the money prime increased cheating.

Next, to test our mediation hypothesis, we examined if the effect of condition on the decision to hire the candidate with confidential information was mediated by a business decision frame using a bootstrapping procedure that generated a confidence interval for the indirect effect. The bootstrap analysis showed that the 95% bias-corrected confidence interval for the size of the indirect effect excluded zero (.073, 1.386), suggesting a significant indirect effect. Indeed, the priming condition was no longer a significant predictor of the likelihood to hire the candidate with confidential information after controlling for a business decision frame (from $b = 1.42$, $SE = .61$, $p = .023$, to $b = .86$, $SE = .58$, $p = .14$), but business decision frame significantly predicted the likelihood of hiring the candidate with confidential information ($b = .72$, $SE = .19$, $p < .001$). Running simple mediations using bootstrapping procedures, none of the alternate explanations (self-sufficiency, competitive decision frame, power, or affect) mediated the effect of the prime on the hiring decision.

Moreover, we ran a multiple mediation model using multiple regression analyses (Preacher & Hayes, 2008) to test for the indirect effect of our mediator, business decision frame, on our dependent variable, controlling for the alternate explanations. Thus, we tested for the unique specific indirect effect of the mediator (business frame) while controlling for the other measured variables. Using a multiple mediation model, the bootstrapping procedure (with 5000 iterations) revealed that the indirect effect of business decision frame on decision to hire the candidate with confidential information was significant and its 95% bias-corrected confidence intervals did not include zero (.005, 1.290). This suggests that our mediator demonstrates unique ability to mediate the relationship between the prime condition and the dependent variable, above and beyond the other measured variables. Similarly, we ran a multiple mediation model to test for the indirect effect of business decision frame on the second dependent variable, cheating. The bootstrapping procedure (with 5000 iterations) revealed that the indirect effect of business decision frame on cheating was significant and its 95% bias-corrected confidence intervals did not include zero (.018, 7.620). In sum, business decision frame, even when controlling for the measured alternative explanations, mediated the effect of the money prime on both dependent variables.

General discussion

In four studies we showed that mere exposure to the money construct is associated with unethical outcomes and that the mechanism tying them together is the adoption of a business

decision frame. The results of Studies 1 and 2 demonstrated the connections between money primes and unethical intentions, and a business decision frame, respectively. The results of Studies 3 and 4 demonstrated support for our mediation hypothesis: money primes led to a business decision frame, which led to unethical intentions and behavior. Our rationale for predicting this effect was based on the problem of objectification, whereby social relations, which we assume are the fundamental basis of morality, can become de-emphasized so that moral considerations are obscured and a cost–benefit analysis ensues which focuses on the self to the exclusion of others. The explicit demonstration that mere exposure to the construct of money elicits unethical behaviors is an important contribution to psychological research on money, for it expands known consequences of such exposure (e.g., people being less likely to ask for help, less helpful to others, and more likely to choose to work alone). The consistency of results across these studies, particularly given the use of different measures and operationalizations of variables, provides strong evidence for our proposed effect.

Theoretical and practical implications

This research extends the prior work on the potential effects that result from the activation of the concept of money. To our knowledge, we are the first to empirically test the link between mere exposure to money and unethical outcomes. Testing this link is important because money is a central pursuit of business organizations, and, as recent scandals illustrate, immorality in organizations can have devastating effects. Perhaps most significantly, the current findings move beyond the effects of primes on outcomes to study the mechanisms that produce such effects. Self-sufficiency has been suggested as an explanation for the effect of money on behavior (Vohs et al., 2008). However, self-sufficiency itself has not been directly empirically demonstrated as a mechanism connecting money primes to behavior. In Study 4, we empirically ruled out self-sufficiency as an explanation for our results, as well as ruling out a competitive decision frame, feelings of power, and affect.

We explained the effect of money primes on outcomes by evoking the concept of a decision frame. Our research provides strong support for the signaling-processing theory of decision making (Tenbrunsel & Messick, 1999), suggesting that the mere presence of money as an environmental cue can signal a business decision frame and thus a business decision, one that is not necessarily moral. By doing so, we contributed to the growing body of literature suggesting that the dirty money metaphor to which we alluded earlier also may be applied to business per se. Previous research has shown, for instance, that the economic education business students receive promotes greed (e.g., Wang, Malhotra, & Murnighan, 2011), that business students cheat more than other students (e.g., McCabe & Treviño, 1995), and that priming business elicits competitive and self-interested behaviors (Kay et al., 2004).

Moreover, our findings extend prior work investigating factors that influence people's likelihood to engage in unethical behavior. Past research in this area has focused on the rational and deliberate aspects of ethical decision making (e.g., Rest, 1986), but recently the literature on moral psychology has emphasized non-rationalist models (e.g., Greene & Haidt, 2002). For instance, some recent work has asserted the prevalence of nonconscious and automatic influences on moral behavior (e.g., Banaji, Bazerman, & Chugh, 2003; Haidt, 2007). Indeed, our research suggests that the environment in which people operate might influence their likelihood to engage in immoral behavior. That is, the current research showed that heightening the accessibility of the idea of money (via a prime) can subconsciously prompt unethical intentions and behavior.

Practically speaking, organizations should consider the implications that exposure to money may have for organizational members' intentions and behavior. Of course, we cannot suggest eliminating money, since money is a necessary feature of business organizations. Yet, this research suggests that organizations should be aware of the potential of environmental or contextual cues for influencing employees' unconscious unethical behavior. Rather than assuming that individuals are fully conscious of the ethical impact of their choices, organizations should warn employees against the potential moral obstacles related to organizations' functioning as businesses. Leaders should also proactively attempt to influence employees' perceptions of business so as to broaden their employees' construal of business as an activity narrowly constituted of self-interest and cost–benefit concerns.

Such an organizational attempt at bypassing the business decision frame by emphasizing ethical values as central to business concerns, however, may not be sufficient. Given the power of subtle environmental cues—such as the idea of money, discussed in this paper—organizations should identify the structural, institutional, and systematic factors that promote unethical behavior. Perhaps the suggestion given by Tenbrunsel, Smith-Crowe, and Umphress (2003) might prove useful in this regard. These authors argued that organizations could decrease unethical behavior by promoting an “ethical infrastructure,” which they argue is a structure constituted by formal and informal systems of communication, surveillance, and sanctioning mechanisms that should be aligned with strong organizational climates pertaining to ethics, justice, and respect. By fortifying their ethical infrastructures, organizations may then be able to override environmental cues leading to unethical behavior by spreading ethical norms and values, while reducing the attractiveness of unethical outcomes.

Limitations and future research

The conclusions that are drawn from these results should take into account the limitations of the studies. First, and most obvious, the reported experiments were conducted in a laboratory setting with one money prime. As we were interested in how mere exposure to money influenced ethical behavior, we felt that the control provided by this method was critical; however, we do recognize that this methodology potentially limits the generalizability of our findings. Future research could benefit from investigating this effect using different methodological approaches (including different money primes) and samples. A particular boundary condition for our findings, for instance, could be culture. We suspect that our findings may not generalize to cultures less dominated by values of capitalism and, correspondingly, cultures that are less materialistic (Kasser, Cohn, Kanner, & Ryan, 2007). Our expectation is consistent with research demonstrating that materialistic values are associated with more cheating and petty theft (Cohen & Cohen, 1996; Kasser & Ryan, 1993). Differences across cultures in this regard would not be surprising given the recent work on moral foundations by Haidt and Kesebir (2010), and Rai and Fiske (2011) that embraces cultural variation. Another likely boundary condition for our theorizing and findings is the nature of the social relationship to which money is introduced. We suspect, for instance, that in “communal sharing” relations (e.g., “blood” relationships; Fiske, 1992), the effects of money primes on unethical outcomes, mediated by a business decision frame, would be considerably less likely to occur, because cost–benefit reasoning and objectification of others would be inconsistent with the nature of the fundamental relation. A final boundary condition to note is the case in which self-interest and ethical behavior align. Here too we suspect our posited causal linkage would not hold.

Another important area of future research is to understand what it is about a business frame that leads to more unethical

behavior. While we argued that a business frame is associated with objectification and a calculative cost–benefit analysis, this is an untested assumption. In addition, we assumed that individuals link business to a particular set of norms and principles. Recent empirical work by Reynolds, Leavitt, and DeCelles (2010) suggests that beyond holding just a simple description of what business represents, individuals also hold a normative valuation of business such that it is implicitly assumed to be inherently moral or immoral, and that this implicit assumption interacts with contextual cues to shape moral behavior. Future research should further examine the relationship between money cues, business frame, and individuals' implicit assumptions regarding the inherent morality of “business.” Further, it is an empirical question the extent to which the influence of a business frame entails deliberative reasoning, intuition, or some combination; we encourage researchers to try to disentangle these underlying processes. Finally, it also is an empirical question whether or not the differences we conceptually argued exists between business and economic frame (Pillutla & Chen, 1999) as empirically verified.

Conclusion

Considering the significant role of money in business organizations and everyday life, the idea that subtle reminders of money elicit changes in morality has important implications. Our findings demonstrate that the mere presence of money, an often taken-for-granted and easily overlooked feature of our daily lives, can serve as a prompt for immoral behavior operating through a business decision frame. These findings suggest that money is a more insidious corrupting factor than previously appreciated, as mere, subtle exposure to money can be a corrupting influence.

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