Reminders of Money Elicit Feelings of Threat and Reactance in Response to Social Influence

JIA (ELKE) LIU
DIRK SMEESTERS
KATHLEEN D. VOHS

When consumers are reminded of m... to th... conform, shrug off, or react against others' attempts to infl... the... search on reminders of money suggests that either of the ... wo outcom... probable. The current research proposed that the self-su... otivation in...uced by money reminders causes consumers to perceive s... al in... as as threats to their autonomy. We predicted that consumers reminded of mone... ld deviate from social influence, an effect that would be ca... y feeling thr...tened. Across three experiments, money-primed particip... behaved opposite to the source of influence, displaying reactance stem... from h...tened feelings of threat. However, this reactance response was ...inated ...n money-primed participants were not personally invested in a de... sc...quently, they showed indifference in the face of social influ... Hence, r...s of money boost the motivation to be autonomous and ser...mers to potential constraints on their personal decision-making free...

Money has bigger effects on peo...'s t...ts, feelings, and behavior than simpl...hat it ca...as an exchange medium or store of va...ple could behave toward money as if it is the ulti...e to... quintessential vehicle to get what they wa...nd need. ...often people behave toward money as ...it i... drug that possesses an abundance of motivati... ...ewar... properties (Lea and Webley 2006).

Nascent resea... the p...ogy of money suggests that mere rem...ers ...t are e...ough to drastically change people's preferences for work, play, and interpersonal relationships (Vohs, Mead, and Goode 2006, 2008). Prior work has found two distinct patterns of responding, which can be summarized as showing that people reminded of money adopt a more heightened sense of autonomy than they would otherwise and that they become indifferent to the wants and needs of others. The current work pitted these two outcomes against each other by studying people's responses to social influence.

Social influence is the change in responses or behavior that one person (i.e., the source or agent) causes in another (i.e., the receiver). Social influence attempts come in many forms, ranging from explicit directives (such as when an authority issues a command) to casual influences (such as when a passerby gives an unsolicited opinion).

How would consumers who have been reminded of money react to social influence attempts? One prediction is that the idea of money would lead to a detached, unconcerned, and nonchalant stance, which might translate to indifference in the face of social influence (which we accordingly termed the *indifference hypothesis*). Another prediction is that the idea of money would stimulate a motivation to protect one's autonomy and freedom, which might result in reactance to influence attempts (which we accordingly termed the *reactance hypothesis*). Three ex-

Jia (Elke) Liu is ...nt professor of marketing at the University of Groningen, PO Box 80... AV Groningen, the Netherlands (Jia.Liu@rug.nl). Dirk Smeesters is ...rofessor of marketing at the Rotterdam School of Management, Erasmus University, PO Box 1738, 3000 DR Rotterdam, the Netherlands (DSmeesters@rsm.nl). Kathleen D. Vohs is the McKnight Presidential Fellow, Land O'Lakes Professor of Excellence in Marketing, and associate professor of marketing at the Carlson School of Management, University of Minnesota, 3-150 321 19th Avenue South, Minneapolis, MN 55455 (vohsx005@umn.edu). The authors would like to thank Simona Botti and Clayton Critcher for their insights and comments.

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periments, bridging the self-sufficiency theory of money (Vohs et al. 2006, 2008) and social influence literature (Cialdini 2009; Cialdini and Goldstein 2004), tested these competing hypotheses.

We present the findings of three experiments, in which participants were exposed to various social influence techniques, such as an authority command (experiment 1) or unsolicited peer opinions (experiments 2 and 3). The findings of these experiments showed that participants primed with money were more likely than others to respond in a manner opposite of the intent of the influence agent. In each case, reactance was induced because social influence attempts elicited feelings of threat among people reminded of money. Yet, not all circumstances involving social influence necessarily lead to threat and reactance from money-reminded people. We found that social influence in the context of decisions that are relatively unimportant (here, making a decision for another person) leads to indifference among people reminded of money.

Our research contributes to understanding social influence and the psychology of money. First, it demonstrates the mediating role of threat in producing reactance among money-primed consumers who experience social influence attempts. Second, we identify novel conditions in which a subtle style of social influence (i.e., an offhand comment) can backfire. Last, we refine the self-sufficiency theory of money by showing that activating the idea of money elicits people's striving to protect their freedom and autonomy when others attempt to exert their influence.

THE INFLUENCE OF OTHERS

Social influence is a powerful, and often unrecognized, determinant of behavior. One study demonstrated that people's beliefs about what factors cause their behavior are decoupled from what does seem to cause their behavior (Nolan et al. 2008). People in this study underestimated social influence to be the least likely of potential causes of their behavior. As a matter of fact, though, their behavior was best predicted by what they thought others were doing. Nolan et al.'s conclusion (also Goldstein, Cialdini, and Griskevicius 2008) was that people are greatly influenced by perceptions of others' actions but, for the most part, do not know it.

Social influence is direct and explicit when there is a clear statement of what the receiver is expected to do, such as when one receives a directive from an authority (Conway and Schaller 2005). Social influence attempts also can be casual, such as when a person offhandedly offers an opinion (Cialdini 2009). Across situations and circumstances, social influence is quite effective in bringing about the behavior desired by the influence agent because people's predominant response is to behave in line with the tactics inherent in social influence attempts (Cialdini 2009; Kardes 2002). For instance, people tend to follow the opinions, advice, and orders of authority figures (Blass 1991; Conway and Schaller 2005). Consumers often rely on word-of-mouth communication to inform their decisions (Herr, Kardes, and Kim 1991), as others' experiences provide an easy heuristic about what to decide (Brown and Reingen 1987).

Yet not all social influence attempts result in the intended outcome (Cialdini and Goldstein 2004). People might ignore or react against a social influence attempt, depending on dispositional and situational variables. Conditions that render influence attempts ineffectual include the receiver being relatively insensitive to social factors (Wooten and Reed 2004), possessing a personality type that prioritizes following one's inner states (e.g., low self-monitors; Snyder 1974), or suspecting that the source of social influence has an ulterior motive (Campbell and Kirmani 2000).

Behaving in opposition to an influence attempt signals psychological reactance, in which people feel threatened because the influence attempt is perceived as impinging on their autonomy or personal freedom (Brehm 1966; Chartrand, Dalton, and Fitzsimons 2007). As a result, people seek to restore a sense of freedom by responding in the direction opposite of the influence agent's intent, a consequence that can occur even when the direction of influence is consonant with one's underlying preferences (Brehm 1966; Clee and Wicklund 1980; Wicklund 1974). As a result, reactance can heighten the desire to perform the constrained behavior, as seen in outcomes such as choosing a nonrecommended option over a recommended one, as well as worsened attitudes and feelings toward the source (Fitzsimons and Lehmann 2004; Kivetz 2005).

MONEY AND THE INFLUENCE OF OTHERS

Why would the idea of money be of any consequence for how people respond to social influence? A recent theory of the psychology of money (Vohs et al. 2006, 2008) argued that mere reminders of money elicit a self-sufficient state wherein people seek freedom to pursue their own goals and become indifferent to the presence and actions of others who are irrelevant for their goal pursuit. The term *self-sufficiency*, as used to describe the effects of being reminded of money, consists of two components. On the one hand, people reminded of money eagerly pursue personal goals. They agree to take on more work than is necessary and persist longer than others on difficult and impossible tasks (Vohs et al. 2006). People reminded of money also plan to work more in the next 24 hours than do other people (Mogilner 2010). On the other hand, people reminded of money act as if they are immune to others. They desire solo versus joint leisure activities, are insensitive to social exclusion, and appear uninterested in forming friendships (Mead et al. 2011; Vohs et al. 2006; Zhou, Vohs, and Baumeister 2009).

Prior research has treated equally these two facets, people's dogged pursuit of personal goals and their immunity to others. No experiments, though, have pitted the two facets against each other. In the current experiments, therefore, we created circumstances in which others' behavior could be construed as attempts to constrain participants' freedom of action by influencing their preferences and choices. Hence,

two predictions can be derived from prior research. If immunity to others is the dominant facet of the self-sufficiency state, then the prediction is that social influence attempts would be inadequate to change people's behaviors—that is, people's behavior would not change as a function of social influence. We labeled this the *indifference hypothesis*. If personal goal pursuit is the dominant facet, however, then the prediction is that social influence attempts would conjure up feelings of threat and produce contrarian reactions that are opposite of the source's intent. We labeled this the *reactance hypothesis*.

Indifference Hypothesis. Support for the indifference hypothesis comes from several sources. First, one definition of the term *self-sufficiency* means to perform actions without the involvement of others, such as its use in research on postinjury recovery (Bergman 1991). This perspective extrapolated to a social influence context suggests that rather than bend toward or resist against others' influence, one might be indifferent or immune to it. Second, research has shown that reminders of money produce an indifference orientation toward motivationally relevant stimuli, such as interpersonal interactions and tasty foods. After sitting at a desk above which hung photographs of hard currency, participants said that they preferred solo leisure activities more than activities that involved others too (Vohs et al. 2006). Compared to others, participants who had recently completed a word puzzle that contained money-themed phrases stated that they planned to do less socializing and that the idea of volunteering their time to help others in need was less appealing (Mogilner 2010; Pfeffer and D[illegible]09). In two striking examples of an indifference response, exposing participants to images of money [illegible] pleasure of eating a piece of chocolate (Quoidbach et al. 2010). Another experiment found that participants who had handled cash and then were socially excluded reported distress ratings that were on par with those of participants who had been socially included (Zhou et al. 2009). These findings are consistent with an indifference hypothesis, that people reminded of money buffer from the influence of others and therefore might be unperturbed by social influence attempts.

Reactance Hypothesis. Support for the reactance hypothesis also can be found from prior theory and findings. Despite having a positive overtone in everyday language, the term *self-sufficiency* as used in psychotherapy writings has a discernibly disagreeable meaning. Self-sufficiency is considered to be a barrier to intimacy among people with narcissistic personality disorder (Alperin 2001). Almond (2004) described patients with defensive narcissistic self-sufficiency as being hypercompetent and afraid of losing control. The widely used Narcissistic Personality Inventory (Raskin and Terry 1988) contains a subscale entitled "Self-Sufficiency" that is composed of items such as, "I can live my life in any way I want to," which seem to portend reactant behavior.

Second, reactance theory claimed that the attractiveness of the constrained behavior freedom increases the likelihood of reactance (Brehm 1966). Accordingly, people who put more weight on decision freedom and related choice options are more likely to perceive an action as a threat to their autonomy and hence are more likely to become reactant (Hong and Faedda 1996). The self-sufficiency orientation induced by money boosts the importance of being autonomous and socially independent (Vohs et al. 2006). For instance, when reminded of money, people tend to physically distance themselves from others, a behavior that can signal a preference for independence and separation from others (Holland et al. 2004). Money reminders make personal freedom and autonomy more valuable and attractive, people primed with money may become more sensitive and defensive to any attempt that can potentially violate their freedom and self-sufficiency.

A third source of support comes from experiments in which a request or suggestion is made to participants who have been reminded of money. Two experiments revealed that reminders of money led to refusals to seek help when working through difficult tasks (Vohs et al. 2006). To be sure, offering to help someone is not the same as making a request of the person, but as a matter of fact, needing help can be seen as a threat to one's autonomy (Ackerman and Kenrick 2009). Also germane are findings that participants reminded of money, compared to others, more often flatly refused help from a peer who directly asked them for assistance (Vohs et al. 2006).

We favored the reactance hypothesis over the indifference hypothesis, chiefly because the link between self-sufficiency in the clinical sense and relating to others conveys a strong link between being self-sufficient and resisting others' influence. This suggests that the idea of money stimulates the motivation to be autonomous and hints that people are likely to behave in opposition to social influence that may impinge on their personal freedom. Nonetheless, there was ample support for both predictions but no direct tests of the competing motives to date.

We present three experiments in which participants are subjected to a social influence attempt. Participants receive either an authority command (experiment 1) or an unsolicited opinion of another person (experiments 2 and 3) regarding a product. We expected money primes to elicit reactance in participants' expression of their product choice and liking (favoring the reactance hypothesis). In experiment 3, we also tested a boundary condition of the reactance hypothesis. It showed that money-primed participants become indifferent to social influence when they are not personally invested in a decision. That is, when freedom to pursue a goal decreases in importance, immunity to others appears to be the result of reminders of money.

EXPERIMENT 1: WHEN AUTHORITIES COMMAND

Experiment 1 served as an initial test of whether the indifference or reactance hypothesis would prevail. The idea of

money was or was not activated via the theme of a scrambled phrases task (Vohs et al. 2006). Participants then read about a situation in which they imagined that they had to decide which of two software packages to buy. Social influence was manipulated via instructions from an authority figure to buy one of the two software packages. Authority commands reliably produce compliance behavior, as people feel strongly compelled to obey those in charge (Blass 1991; Milgram 1974). Authority commands can elicit feelings of threat, but typically such feelings are not strong enough to produce deviant behavior (Conway and Schaller 2005). In the current experiment, a feeling of threat was expected to compel participants in the nonmoney condition to conform to the directives (Fuegen and Brehm 2004).

Therefore, we expected that the authority command would elicit threat among all participants and, furthermore, that this would be highest among participants in whom the idea of money had been activated. The latter prediction follows from the reactance hypothesis's notion that activating the idea of money increases the importance of autonomy, which sensitizes people to potential constraints on their freedom. This sensitivity was hypothesized to be manifested in very strong feelings of threat in the presence of perceived limits on one's freedom, which was expected to compel money-reminded participants to rebel against the wishes of an authority figure. The competing indifference hypothesis predicts that participants reminded of money would not chang their behavior as a function of what the authority want nor would they feel threatened by an authority command

Method

Participants. Eighty-three undergraduat participated in exchange for partial f course requirements. Participants were ra ly assigne the conditions of a 2 (prime: mone oney) × 2 (authority: command vs. no co mand) b n-participants design.

Procedure. Particip told that they would participate in several unrela dies first of which was introduced as a la task al. 2006). Participants formed gramm ally orrect ases with four out of five words that w ste mbled order (Srull and Wyer 1979). Money tion participants descrambled money-related phrases i f the 30 items. Non-money-primed condition participant descrambled 30 phrases unrelated to money.

Then, participants read a detailed description of a scenario in which a student must decide which of two computer software packages, called Wobble or Hawk, to purchase for a university course (adapted from Conway and Schaller 2005). In the command condition, the teacher of the course, Dr. Whim, stated, "It seems clear to me that Wobble is the better system, so I think you should go with that. I'll be disappointed if you do not go for Wobble." In the no-command condition, Dr. Whim instead said, "I do not want to influence your choice, so I'm not even going to tell you what I think. I'll be disappointed if you do not go for what you really think." The scenario also provided limited information about the two software systems. Wobble and Hawk were the same price and had the same user interface and manual, whereas Wobble was somewhat faster and Hawk somewhat more reliable (Conway and Schaller 2005). After reading the scenario, participants were told that we were interested in their preferences and choices about the software. But before doing so, they were told, they would perform another task in order to give them time to ponder the information they received.

Next, participants completed threat measure (DeMarree, Wheeler, and Petty 5; Lit hs, and Smeesters, forthcoming). Participants told a word would be flashed on-screen so kly tha ir subconscious would be able to per e it hey told that after the word left the screen word would appear, and they should use their ling e ent to select which word they thought the wor had just been flashed. Trials began with sk of *X*s erving as an orienting stimulus for 2,000 illise s, followed by subliminal presentation (17 econds) target words, which was a nonsensi string of letters. A postmask of *X*s covered the target for 1 milliseconds. Afterward, four words were p ted a emained on the screen until participants made the n of which word they believed was flashed on-screen. Half of the 12 trials were target trials, in which one four response options was a threat-related word. The position of the threat-related words in the response options was randomized, as was the order of the trials. To create an overall measure of threat, we computed a composite measure by summing the number of threat-related words selected. Scores ranged from 0 to 6; higher scores indicated a stronger feeling of threat (DeMarree et al. 2005).

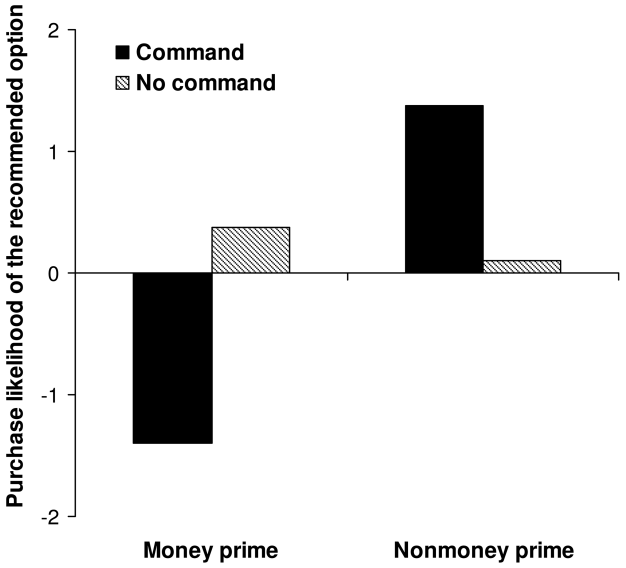
After the implicit threat assessment, participants indicated their software package decision by answering three questions. The first two questions asked, "What is the likelihood that you would choose Wobble [Hawk] as the software you would use for this course?" (1 = not likely at all; 9 = very likely). A third question asked, "Which one of the two software packages would you choose as the software you would use for this course?" (forced choice between Wobble and Hawk).

Finally, we tested for the influence of two alternate explanations. Participants completed an assessment of current mood (Positive and Negative Affect Scale; Watson, Clark, and Tellegen 1988) and feelings of power. For the latter, participants rated their current feelings on six items related to power (Stapel and Van der Zee 2006; Wiggins 1979): forceful, domineering, dominant, submissive, self-doubting, and meek (1 = not at all; 7 = very much; $\alpha = .64$).

Participants completed a postexperimental questionnaire that probed for suspicion about any relation between the tasks (Bargh and Chartrand 2000). None of the participants indicated suspicion or detected the rationale behind the study.

FIGURE 1

EXPERIMENT 1: PURCHASE LIKELIHOOD OF THE RECOMMENDED OPTION AS A FUNCTION OF PRIME AND AUTHORITY CONDITIONS



Results

Purchase Likelihood of the Recommended In line with the reactance hypothesis, we pred ed the combination of money prime and authority lead participants to reject the recommen ion ch soft-ware package to buy. We tested th ypothes first computing purchase likelihood by ing the lik hood of purchasing Hawk from the like ood urchasing Wobble (Conway and Schaller 2 ; higher indicated a greater likelihood of pur sing Wobble. A 2 (authority: command vs. no comm (prime: money vs. nonmoney) between-participa NO revealed a main effect of prime con on p likelihood ($F(1, 79) = 9.87$, $p < .01$) ac on, w btained the predicted interaction of nd authority condition ($F(1, 79) = 14.90$, 001, e fig. 1). The main effect of authority conditio not significant ($F < 1$).

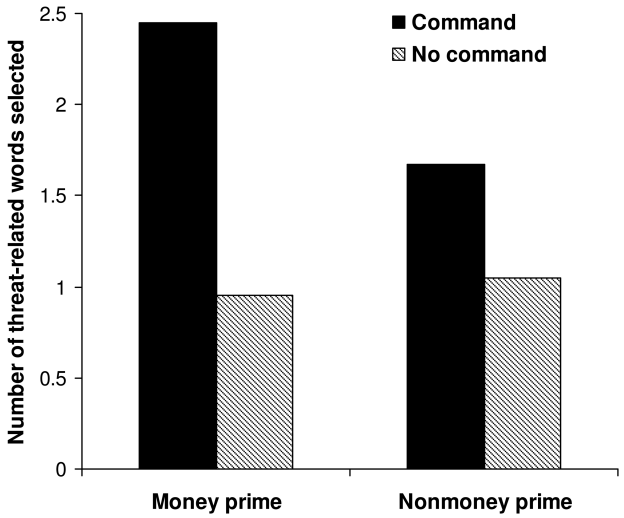
As expected, parti pants in the nonmoney condition expressed a higher purchase likelihood of the option that was recommended by the authority figure ($M = 1.38$, SD = 2.01), relative to that option's purchase likelihood in the no-command condition ($M = 0.10$, SD = 1.76; $F(1, 79) = 5.30$, $p < .05$). In line with the reactance hypothesis, when participants were primed with money, the authority command backfired. Participants in the command condition expressed a higher purchase likelihood of the option that was not recommended ($M = -1.40$, SD = 1.85) compared to that option's purchase likelihood in the no-command condition ($M = 0.38$, SD = 1.60; $F(1, 79) = 9.93$, $p < .01$).

Similar results were found on the binary choice measure. A logistic regression revealed a marginally significant main effect of prime condition ($\chi^2(1) = 3.55$, $p = .059$), which was qualified by the expected interaction between prime and authority conditions ($\chi^2(1) = 8.30$, $p < .01$). Participants in the nonmoney condition mostly followed the authority's advice by choosing more often the software that was recommended as compared to the software package choice in the no-command condition (71.4% vs. 42.9%; $\chi^2(1) = 3.56$, $p = .059$). Money primes again reversed this pattern—participants who received the authority command chose the recommended software significant ften than did participants who did not receive th mma 0% vs. 52.4%; $\chi^2(1) = 4.77$, $p < .05$). The of a rity condition was not significant ($\chi^2(1)$ 1).

Threat. We hypot zed t bei reminded of money and receiving an auth mma would elicit the highest feelings of thre We th with a 2 (authority) × 2 (prime) betw -particip NOVA on the composite threat mea re was no effect of prime condition ($F(1, 79) = 2.$, $p >$ but the expected main effect of authori ndition o red ($F(1, 79) = 23.08$, $p < .001$). P ipants who received a command selected more threat-r ed wor ($M = 2.05$, SD = 1.20) than those who did n ceive command ($M = 1.00$, SD = 0.83). Importan teraction between authority and prime conditions was significant ($F(1, 79) = 3.98$, $p < .05$; fig. 2). ned comparisons showed that compared to not re- ng a command, receiving an authority command led participants to select more threat-related words in both the money ($M_{command} = 2.45$, $SD_{command} = 1.19$; $M_{no\ command} = 0.95$, $SD_{no\ command} = 0.86$; $F(1, 79) = 22.83$, $p < .001$) and

FIGURE 2

EXPERIMENT 1: THREAT SCORES AS A FUNCTION OF PRIME AND AUTHORITY CONDITIONS



nonmoney prime conditions ($M_{command} = 1.67$, $SD_{command} = 1.11$; $M_{no\ command} = 1.05$, $SD_{no\ command} = 0.80$; $F(1, 79) = 4.00$, $p < .05$), with the effect being larger in the money condition (hence the interaction). Decomposed another way, when participants received a command, having earlier been reminded of money led participants to choose more threatening words relative to not being reminded of money ($F(1, 79) = 6.25$, $p < .05$). In the no-command condition, though, there was no difference in the number of threat-related words selected between the money and the nonmoney prime conditions ($F < 1$, NS).

Mediation. Next, we tested whether threat scores mediated the effect of the authority × prime interaction on purchase likelihood of the recommended option. We tested a mediated moderation model in which prime condition first moderated the effect of the independent variable (authority condition) on the mediator (threat scores). Although participants in both the money and the nonmoney prime conditions felt more threatened when receiving a command compared to the no-command condition, those with a money prime felt significantly more threatened than those in the nonmoney prime condition. Second, the prime condition was expected to moderate the effect of the mediator on the dependent variable (purchase likelihood). We expected that feelings of threat would increase participants' inclination to follow the authority's command in the nonmoney condition. However, for participants in the money prime condition, enhanced feelings of threat should translate to a decreased inclination to follow the authority's command because activating the idea of money heightens the importance of freely choosing one's actions.

We tested this model with three equations (Muller, Judd, and Yzerbyt 2005), using the bootstrapping method (Preacher, Rucker, and Hayes 2007). As can be seen in table 1, the first two equations duplicated the authority × prime interaction effects on the purchase likelihood of the recommended option and threat scores. When including the threat scores and the interaction between threat scores and prime condition to the equation predicting the dependent variable, the effect of the authority × prime interaction on the purchase likelihood of the recommendation was no longer significant, whereas the effect of the interaction between threat scores and prime condition remained significant. Subsequent testing of conditional indirect effects (based on 5,000 bootstraps) indicated that threat scores mediated the effect of authority condition on purchase likelihood of the recommended option in both the money (95% confidence interval [CI]: −2.1786 and −0.3147) and the nonmoney prime (95% CI: 0.0588 and 1.8348) conditions.

We conducted the same mediated moderation model on the binary choice measure and found similar mediation results (table 1). The threat scores mediated the effect of authority condition on the choice measure in both the money (95% CI: −0.3991 and −0.0231) and the nonmoney prime (95% CI: 0.0202 and 0.2935) conditions.

Hence, the experience of threat that arose from the authority's command led to divergent reactions. Among participants for whom the concept of money had been activated, threat caused them to choose the nonrecommended option, whereas threat led participants in the nonmoney condition to choose the recommended option.

Alternate Explanations. We tested whether our manipulations of money reminders alone or in combination with an authority command changed feelings of power or mood. For the former, none of the main effects or the interaction of prime and authority conditions exerted a significant effect on feelings of power (F's < 1).

For mood, the positive affect subscale ($\alpha = .73$), a 2 (authority) × 2 (prime) between-participants ANOVA revealed a main effect of authority condition ($F(1, 79) = 4.26$, $p < .05$). Participants in the no-command condition reported more positive affect ($M = 2.45$, SD = 0.60) than those in the command condition ($M = 2.1$, SD = 0.56). There were no other significant effects on the positive affect subscale (F's < 1). On the negative affect subscale ($\alpha = .53$), there was a significant effect of prime condition ($F(1, 79) = 5.72$, p < .05). Participants primed with money ($M = 1.78$, SD = 0.4) reported less negative affect than those in the nonmoney condition ($M = 2.00$, SD = 0.37). The effects of authority condition and the interaction between prime and authority conditions were not significant (F's < 2, p > .). None of these mood differences predicted the mediator (threat scores) or any of the dependent measures (likelihood of purchase and choice; t's < 1.53, p's >

Discussion

Experiment 1 revealed evidence supportive of the reactance hypothesis, that the idea of money can lead social influence attempts to backfire, as in the case of an authority command. In the nonmoney prime condition, we replicated the long-established finding that people tend to comply with authority commands. Participants in this neutral condition indicated higher levels of threat when learning of an authority command as compared to when there was no command, but feeling threatened did not make them react against the authority's recommendation but rather led them to follow the authority command, suggesting perhaps a fear of the authority (Conway and Schaller 2005).

As predicted, reminders of money reversed this effect. When participants were primed with money, an authority command decreased the likelihood of choosing the recommended option. This result is consistent with the reactance hypothesis and not in line with the indifference hypothesis. The indifference hypothesis predicted that an authority command would have had no impact on the choices made by participants reminded of money. Instead, activating the idea of money appeared to sensitize participants to potential restrictions of their freedom. As a result, these participants felt highly threatened after receiving an authority command, which motivated them to react against the recommended course of action.

Arguably, experiment 1 used a paradigm inherent in

TABLE 1

MEDIATED MODERATION ANALYSES IN EXPERIMENTS 1–3

	β	t or χ^2	p-value
Experiment 1—authority command:			
Purchase likelihood:			
Step 1: authority × prime predicting purchase likelihood of the recommended option	3.07	$t(79) = 3.86$	$p < .001$
Step 2: authority × prime predicting threat scores	−.88	$t(79) = 1.99$	$p < .05$
Step 3:			
Threat scores × prime and	2.31	$t(77) = 7.45$	$p < .001$
authority × prime predicting purchase likelihood of the recommended option	.90	$t(77) = 1.29$	$p > .20$
Choice:			
Step 1: authority × prime predicting choice	2.69	[illegible]	$p < .01$
Step 2: authority × prime predicting threat scores	−.88	[illegible]	$p < .05$
Step 3:			
Threat scores × prime and	2.78	[illegible]	$p < .001$
authority × prime predicting choice	1	[illegible]	$p > .37$
Experiment 2—other's opinion:			
Positive opinion:			
Step 1: opinion valence × prime predicting product liking		[illegible] = 2.80	$p < .01$
Step 2: opinion valence × prime predicting threat scores		[illegible]54) = 2.23	$p < .05$
Step 3:			
Threat scores and	−.59	$t(53) = 4.71$	$p < .001$
opinion valence × prime predicting product liking	−.98	$t(53) = 1.81$	$p = .076$
Negative opinion:			
Step 1: opinion valence × prime predicting product liking	[illegible].90	$t(54) = 3.13$	$p < .01$
Step 2: opinion valence × prime predicting threat scores	−1.28	$t(54) = 2.54$	$p < .05$
Step 3:			
Threat scores and	.70	$t(53) = 5.60$	$p < .001$
opinion valence × prime predicting product liking	−.91	$t(53) = 1.86$	$p = .068$
Experiment 3—choice for others:			
Step 1: opinion × prime predicting choice	2.43	$\chi^2(1) = 7.85$	$p < .01$
Step 2: opinion × prime predicting threat scores	.82	$t(94) = 1.74$	$p = .086$
Step 3:			
Threat scores and	−1.44	$\chi^2(1) = 4.93$	$p < .05$
opinion × prime predicting choice	2.23	$\chi^2(1) = 5.90$	$p < .05$

which was a sense of threat (authority [illegible], which was exacerbated by the idea of mon[illegible]. A more powerful test of whether the reactance or ind[illegible]ce hypothesis prevails would involve a situation [illegible] do[illegible]t induce threat by default. Therefore, experiment 2 used [illegible]ffhand communication, in which a p[illegible] casually offered an opinion about a drink that partic[illegible]nts [illegible]re readying to taste. Experiment 2 also had the [illegible] of [illegible]ing to a live interaction task in which soc[illegible]l [illegible]ce attempt takes place, which improved [illegible] [illegible]rnal v[illegible]ty of our hypothesis testing.

EXPERIME[illegible]2: OTHERS' OPINIONS

People are swayed by the opinions of others. Abundant research has demonstrated that word of mouth, or peer opinions, is one of the most influential information sources and exerts strong influence on consumers' product evaluation (Brown and Reingen 1987; Herr et al. 1991). Experiment 2 tested the prediction that money-reminded participants would find an uninvited opinion to be threatening.

In line with the reactance hypothesis, we expected that because people who are reminded of money value freely choosing their actions, they would perceive others' opinions as a threat to their freedom. Therefore, we predicted that after hearing an unsolicited opinion from a passerby, as opposed to when no opinion was offered, participants for whom the idea of money had been activated would feel threatened. Experiment 1 used an implicit measure to tap feelings of threat, with the assumption that threat should be highly accessible for participants who sense that their freedom is being restricted. The current experiment tested threat in two ways, as a replication and extension of experiment 1's findings. We again used an implicit measure of perceived threat and added an explicit threat measure as well. We used two measures because the threat that money-reminded participants were hypothesized to experience might only be registered on an implicit level, yet, if feelings of threat were strong enough, it could reach into consciousness and be observed at an explicit level (Baumeister, Masicampo, and Vohs 2011). Participants for whom the idea of money was not activated were not expected to find another's opinions threatening.

The consequence of feeling threatened would be to behave in a manner opposite to the opinion offered. That is, compared to a condition in which nonvalenced information about the product is given, money-reminded participants were predicted to like the product more if they had heard negative information about it, whereas they were predicted to like the product less if they had heard positive information about

it. Participants in the nonmoney condition, in contrast, were expected to find another's opinions helpful and nonthreatening, as is the typical reaction (Brown and Reingen 1987), and therefore were expected to form opinions that matched the information they received. That is, compared to a condition in which nonvalenced information is given, nonmoney participants were expected to like the product more if they had heard positive information about it and less if they had heard negative information about it.

Method

Participants. Ninety-one undergraduates (42 women) participated in exchange for partial fulfillment of course requirements. They were randomly assigned to the conditions of a 2 (prime: money vs. nonmoney) × 3 (opinion valence: positive vs. negative vs. none) between-participants design.

Procedure. Participants were told that they would participate in several unrelated studies. First, participants completed filler questionnaires on a computer, the background of which served as the priming manipulation (Vohs et al. 2006). In the money prime condition, the screen depicted Euro currency (in notes and coins). In the nonmoney prime condition, it depicted shells, which were chosen because they are similar in size to coins. As a historical side note, shells were among the first objects used as early representations of currency (Weatherford 1998). Scores on these filler questionnaires had no relationship with the results.

Next, participants moved to a room with a table on which rested plastic cups and a glass pitcher filled with a beverage. The experimenter told participants that a company was launching a new sports drink named Vigor and was asking students to taste and evaluate the drink. A same-sex confederate (unaware of the study's purpose and hypotheses) posing as another participant was also in the room completing questionnaires.

The experimenter left to allow participants to taste the drink. After a minute, the confederate started toward the door. Before leaving, the confederate turned to participants and said that he had also tasted the drink. In the positive-opinion condition, the confederate said, "This drink tastes really good. I like it." In the negative-opinion condition, the confederate said, "This drink tastes really bad. I just hate it." In the no-opinion condition, the confederate said, "I also tasted the drink," without offering an opinion. Then the confederate exited the room.

The experimenter returned after a short while and told participants that they would perform another task to give them an opportunity to think about the taste of the drink before evaluating it. At this point, participants completed the implicit threat measure that was described in experiment 1.

After completion of the implicit threat measure, participants evaluated their liking of the product, Vigor. We used the following four statements, "I really like Vigor," "I really enjoyed the taste of Vigor," "I would buy Vigor when it goes on sale," and "I would expect Vigor to be successful when it is launched" ($\alpha = .96$), to assess the liking of the product (Tanner et al. 2008). Liking of the confederate was measured by two statements: "How likable was the other person?" and "Would you like to spend more time with the other person if possible?" ($\alpha = .89$). All items were answered on 7-point scales (1 = strongly disagree; 7 = strongly agree).

Next, participants completed a four-item measure to explicitly assess whether they perceived the communication from the confederate as a threat to their freedom (adapted from Conway and Schaller 2005). It as if the other person was trying to take away my freedom to form my opinion about the drink," "I considered advice from the other person to be an intrusion," "I resisted the attempts of others to influence me," and "Advice and recommendations usually induce me to do just the opposite" (1 = strongly disagree; 7 = strongly agree; $\alpha = .82$).

After completing the implicit threat measure, participants filled out the mood and feeling of power measures as in experiment 1. In addition, we were concerned that reminders of money might induce a competitive norm (Fiske 1991), which might lead participants to perceive the confederate as a competitive person (Smeesters, Wheeler, and Kay 2009) and to construe the situation as a competitive setting (Kay, Wheeler, and Smeesters 2008). To assess whether participants reminded of money had adopted a competitive mind-set, participants rated the extent to which the confederate's behavior was competitive and businesslike ("How competitive was the other person?" and "How businesslike did the other person seem?") and the extent to which their interaction was competitive or businesslike ("How competitive would you rate your interaction with the other person?" and "How businesslike would you rate your interaction with the other person?"). These items ($\alpha = .82$) were rated on 7-point scales (1 = not at all; 7 = very much). Finally, participants completed a postexperimental questionnaire.

Results

Liking of the Product. A 2 (prime: money vs. nonmoney) × 3 (opinion valence: positive vs. negative vs. none) between-participants ANOVA was conducted on the composite index of participants' liking of the product. This analysis revealed the predicted interaction between prime and opinion valence ($F(2, 85) = 17.09$, $p < .001$). The main effects of prime and opinion valence were not significant (F's < 1).

Breakdowns revealed that the effect of opinion valence condition on liking of the product was significant in both the nonmoney ($F(2, 85) = 8.60$, $p < .001$) and the money prime conditions ($F(2, 85) = 8.49$, $p < .001$). Non-money-primed participants liked the product more after a positive opinion was offered ($M = 4.81$, SD = 1.25) than when no opinion was offered ($M = 3.98$, SD = 1.09; $F(1, 85) = 3.73$, $p = .057$), whereas they liked the product less when a negative opinion was offered than when no opinion was

offered ($M = 3.07$, SD = 1.14; $F(1, 85) = 4.32$, $p < .05$), as depicted in figure 3.

Type of opinion given also affected liking of the product for participants in the money prime condition. As predicted, this pattern was a reversal from that in the nonmoney prime condition (fig. 3). Money-primed participants liked the product less after hearing a positive opinion about it ($M = 3.09$, SD = 1.40) than when no opinion was offered ($M = 3.96$, SD = 0.85; $F(1, 85) = 4.03$, $p < .05$), whereas they liked the product more after hearing a negative opinion ($M = 4.85$, SD = 1.25) than when no opinion was offered ($F(1, 85) = 4.04$, $p < .05$). Hence, whereas non-money-primed participants were swayed by the opinions of the confederate, money-primed participants stated the opposite reactions to those of the confederate.

Liking of the Confederate. A 2 (prime) × 3 (opinion valence) between-participants ANOVA on the composite measure of liking of the confederate revealed a main effect of prime condition ($F(1, 85) = 13.26$, $p < .001$). Reminders of money decreased participants' liking of the confederate ($M_{money} = 3.37$, $SD_{money} = 0.87$; $M_{nonmoney} = 4.02$, $SD_{nonmoney} = 0.84$). Moreover, this analysis revealed the predicted interaction between prime and opinion valence conditions ($F(2, 85) = 3.45$, $p < .05$). The opinion manipulation did not affect liking of the confederate in the nonmoney condition ($F < 1$). As predicted, the opinion valence condition had a significant effect on the liking of the confederate in the money prime condition ($F(2, 85) = 5.47$, $p < .0$). Participants in the money condition liked the confederat less after he or she had offered a positive (M = , SD = 0.75; $F(1, 85) = 5.80$, $p < .05$) or negati opinion ($M = 2.98$, SD = 0.86; $F(1, 85) = 10.21$, $p <$ c

to the no-opinion condition ($M = 3.95$, SD = 0.73). The main effect of opinion valence condition was not significant ($F(2, 85) = 2.31$, $p > .10$).

Implicit and Explicit Threat. A 2 (prime) × 3 (opinion valence) between-participants ANOVA on the composite threat scores revealed a main effect of prime condition ($F(1, 85) = 7.88$, $p < .01$; table 2). Participants selected more threat-related words in the money condition than in the nonmoney condition. As predicted, there was also a significant prime × opinion valence interaction ($F(2, 85) = 3.44$, $p < .05$). The opinion manipulation d affect the number of threat-related words selected oney condition ($F < 1$, NS), but it did in the y con n ($F(2, 85) = 5.36$, $p < .01$). Money-p ed ipa selected more threat-related words in positive 85) = 8.73, $p < .01$) and negative-op n c tions (1, 85) = 7.56, $p < .01$), compared to th ion ndition. The number of threat-related w se d ot differ between the positive- and th ative-op conditions ($F < 1$). Finally, the main opinion alence condition was not significant (2, 8 2.10, $p > .12$).

W nd paralle sults on the explicit measure of perce threat. First, participants in the money condition re- ed high hreat scores than those in the nonmoney con- ($F(1$) = 4.99, $p < .05$; table 2). Next, there was als ant prime × opinion valence interaction ($F(2, 85) = 3.39$, $p < .05$). The opinion manipulation did not participants' feelings of threat in the nonmoney con- n ($F < 1$), but it did in the money condition ($F(2, 85) = 4.36$, $p < .05$). Specifically, money-primed participants reported higher threat scores in the positive- ($F(1, 85) = 6.64$, $p < .05$) and negative-opinion conditions ($F(1, 85) =$

FIGURE 3

EXPERIMENT 2: LIKING ODUCT AS A FUNCTION OF PRIME AND OPINION VALENCE CONDITIONS

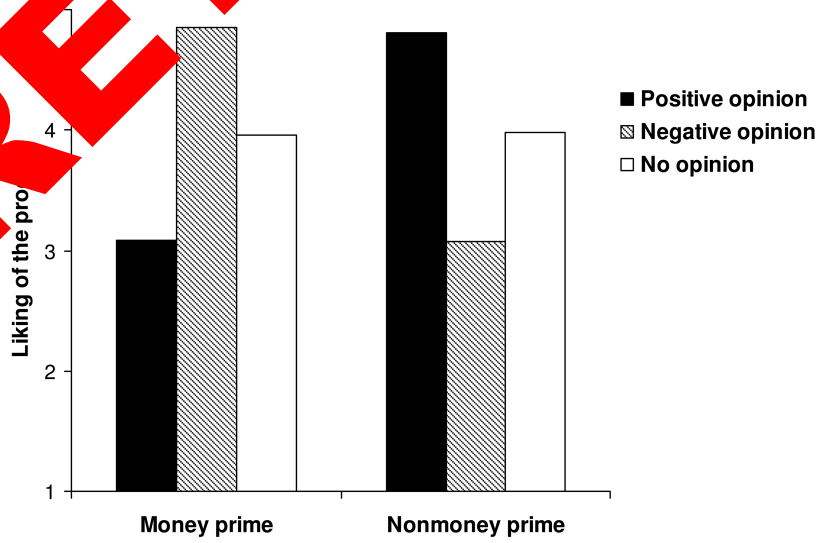


TABLE 2

EXPERIMENT 2 RESULTS: IMPLICIT AND EXPLICIT MEASURES OF THREAT

	Money				Nonmoney			
Threat measure	Positive opinion	Negative opinion	No opinion	Average	Positive opinion	Negative opinion	No opinion	Average
Implicit threat	2.06 (1.24)	2.00 (1.07)	.93 (.92)	1.69 (1.18)	1.06 (1.14)	.93 (.96)	1.14 (.86)	1.04 (.99)
Explicit threat	3.70 (.93)	3.72 (1.32)	2.86 (.75)	3.44 (1.08)	2.97 (.74)	2.90 (.74)	3.14 (.75)	3.00 (.74)

NOTE.—Standard deviations are in parentheses.

6.65, $p < .05$), compared to the no-opinion condition. Threat scores in the former two conditions did not differ ($F < 1$). Finally, the main effect of opinion valence condition was not significant ($F(2, 85) = 1.27$, $p > .28$).

Last, the two threat measures correlated with each other ($r = .59$, $p < .01$). This suggests that both measures tap the same underlying factor that is due, we contend, to participants' perceptions of restricted freedom and autonomy.

Mediation. Were participants' evaluations of the drink altered because a feeling of threat was evoked by being reminded of money and being given an unsolicited opinion? We tested a mediated moderation model to account for the prime × opinion valence interaction on ratings of the drink, with threat scores as the proposed mediator.

Because the opinion valence factor had three levels (positive, negative, and no opinion), we built two mediated moderation models, one for differences between the positive versus the no-opinion conditions and a second for differences between the negative versus the no-opinion conditions. We tested for mediation by both implicit and explicit threat and found similar results. For brevity of description, we report the results of the implicit model; explicit threat tests are available upon request.

In the first model, we tested whether the number of threat-related words selected mediated the effect of the interaction term representing the prime condition and hearing a positive opinion (vs. no opinion) on participants' ratings of the product. We tested this model in the three equations (Preacher et al. 2007; table 1). Tests of conditional indirect effects (based on 5,000 bootstraps) indicated that threat scores mediated the effect of hearing positive opinion on liking of the drink in the money condition (95% CI: −1.4107 and −0.1524) but not in the nonmoney condition (95% CI: −0.3952 and 0.4675). That is, participants in the money condition reported disliking the product after hearing positive comments from the confederate because they felt threatened.

A second mediated moderation model tested whether threat scores accounted for the difference in ratings of the product among money and nonmoney participants who heard a negative (vs. no) opinion about the product. The same set of equations was conducted as in the first model and, as can be seen in table 1, similar effects were found. Tests of conditional indirect effects (based on 5,000 bootstraps) indicated that threat scores mediated the effect of negative versus no opinion on ratings of the product in the money condition (95% CI: −1.4255 and −0.1896) but not in the nonmoney condition (95% CI: −0.3770 and 0.5581). That is, participants in the money condition reported liking the product more after hearing negative comments because they felt threatened.

Manipulation Checks and Alternative Explanations. None of the participants suspected that the drink was not Vigor; consequently, none recognized the sports drink as Aquarius Lemon, which was the money had tasted. We assessed whether our manipulations affected mood states or feelings of power: none of the main effects or the interaction of prime and opinion valence conditions exerted a significant effect on positive affect ($\alpha = .57$), negative affect ($\alpha = .63$), or feelings of power ($\alpha = .67$; F's < 1.78, p's > .18). We measured the extent to which participants' perceived the confederate behaved in a competitive or businesslike manner and the extent to which the interaction with the confederate seemed competitive or businesslike. Results of a series of ANOVAs suggested that these alternate explanations were not supported, as neither main effect nor their interaction had significant effects on these measures (F's < 1).

Discussion

Experiment 2 tested whether being reminded of money and being offered an unsolicited opinion about a product would change participants' opinions of the product, which they did. The confederate's passing comments exerted a backfiring effect on evaluations of the drink among participants for whom the idea of money had been activated. They liked it more when the confederate said that the drink was bad and less when the confederate said the drink was good. This effect runs counter to what typically happens when people are given innocuous information about a product, event, or activity from others; then, evaluations are swayed in the direction of the other's comments (Herr et al. 1991), which is what we observed among our non-money-primed participants.

Activating the idea of money not only produced contrarian evaluations of the product but also contributed to a feeling of threat when the confederate offered an opinion about the product. Hearing a positive or a negative opinion from the confederate led to a sense of threat, which in turn altered money-primed participants' ratings of the product. The experience of threat did not account for ratings of the product by non-money-primed participants.

The current study, together with experiment 1, provided convergent evidence for the reactance hypothesis: freedom

to choose was of utmost importance among participants for whom the idea of money had been activated, resulting in reactance when a threat to their autonomy was present. However, previous findings demonstrated that people reminded of money can also appear to be immune to the presence of others, suggestive of the indifference hypothesis. For instance, they appear uninterested in forming friendships (Mead et al. 2011), and they are unaffected by social exclusion (Zhou et al. 2009). Experiment 3 aimed to reconcile these seemingly conflicting findings by showing when the indifference hypothesis may emerge in the context of social influence.

EXPERIMENT 3: CHOOSE FOR OTHERS

The self-sufficient theory of money implies two consequences of money reminders: pursuit of personal goals and immunity to others. When pitted against each other in the context of social influence, it seems that freedom to pursue personal goals is more important than immunity to others. In support of this notion, the prior two experiments showed that when others are perceived as constraining one's goal pursuit, people reminded of money are reactive, instead of indifferent, to others. This reactive tendency toward others is a way to defend one's autonomy and freedom (Brehm 1966).

Would money-reminded people always react to social influences? We proposed that the indifference hypothesis might be supported when others are irrelevant to goal pursuit or when freedom to pursue a goal is unimportant. Previous research has found support for the former conjecture (Vohs 2011). Participants reminded of money (or not) were instructed to form impressions of handwriting samples. Afterward, all participants were given a surprise recall task for the handwriting content, which was personal information about a peer. As the guideline of reasoning would predict, participants in the money condition remembered less of the information than their counterparts in the nonmoney condition. This suggests that money reminders led participants to be indifferent to others because remembering another's personal information was irrelevant to the focal goal of forming impressions of the handwriting.

In this experiment, we intended to demonstrate that the indifference hypothesis would be supported when the freedom of goal pursuit was declared unimportant. To this end, we instructed participants to make a choice for another person and tested whether money reminders would lead to reactance or indifference to a social influence attempt. Research has suggested that people often perceive choices for others as being as important as choices for the self (Laran 2010; Tetlock 1992; Tetlock and Lerner 1999). The self-sufficient state brought about by the idea of money, however, might undermine the importance of choices for others.

The self-sufficient state brought on by reminders of money lessens people's perceptions of dependence on others (Vohs et al. 2006). Decreased dependence, it has been established, worsens accuracy in judging others' emotions (Galinsky et al. 2006) and estimating others' interests (Keltner and Robinson 1997), findings that suggest that others are seen as less important than they would be otherwise. Triangulating these notions, we predicted that participants reminded of money would perceive choices for others as less important than those who had not been reminded of money. As a result, when choosing for others, participants reminded of money would be unaffected by a peer's opinion, consistent with the indifference hypothesis. However, when choosing for the self, we expected that participants reminded of money would deviate from a peer's opinion to defend their autonomy because choices for the self are important.

Method

Participants. One hundred and [illegible] undergraduates (75 women) participated in exchange for partial fulfillment of course requirements. They were randomly assigned to the conditions in a 2 (choice: self vs. another) × 2 (prime: money vs. no money) × 2 (opinion: given vs. not given) between-participants design.

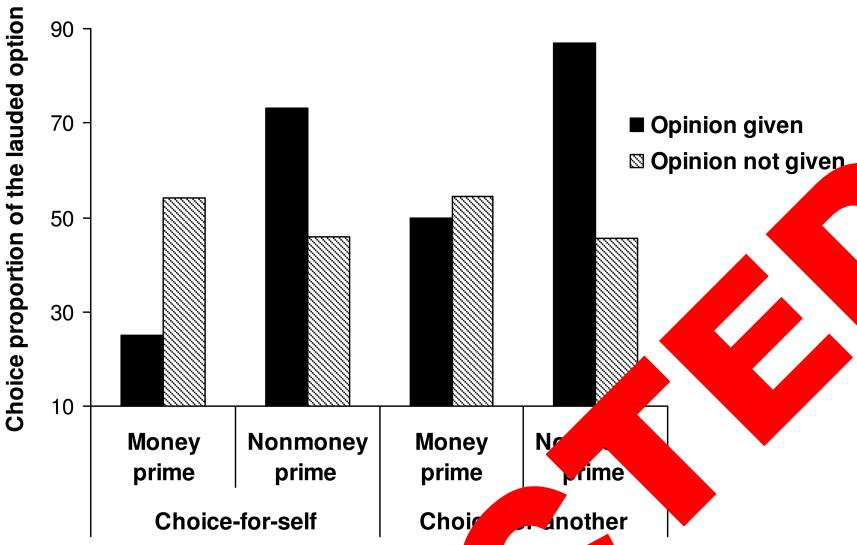
Procedure. Participants were told that they would participate in several unrelated studies. First, they completed the same priming procedure as in experiment 2, which involved filler questionnaires embedded in a money or shell background. As expected, there was no relationship between the primes on the filler questionnaires and the dependent measures.) After the prime manipulation, participants completed the Inclusion of the Other in the Self Scale (Aron, Aron, and Smollan 1992). The scale displays seven pairs of circles that vary from two side-by-side circles that do not overlap (least intimate) to wholly overlapping circles (most intimate). For this experiment, we selected the second, third, fourth, and fifth circle pairs. The participants' job was to write the name of the person with whom they have a relationship that corresponds to that degree of closeness.

Next, participants moved to a room with a table on which rested a picture of two chocolates named Lavazzo and Lavento. The experimenter told participants that this task concerns different choice styles. In the choice-for-another condition, the experimenter told participants to choose a chocolate for the person they named as corresponding to the fourth depiction of circles (which indicates a relationship of middling closeness as the fourth image is the middle item of the original scale). In the choice-for-self condition, the experimenter told participants to choose a chocolate for themselves. No further information on the chocolates was provided. A same-sex confederate (unaware of the study's purpose and hypotheses) also was present ostensibly as a fellow participant who was completing questionnaires.

Then, the experimenter left to allow participants to think about the choice and complete a computer task. After approximately half a minute and before participants went to the computer, the confederate started toward the door. Before leaving, the confederate turned to participants and said that he or she also had conducted the same task. In the opinion-given condition, the confederate said, "I tried both chocolates before. I really like Lavazzo." The confederate pointed

FIGURE 4

EXPERIMENT 3: CHOICE PROPORTION OF THE LAUDED OPTION AS A FUNCTION OF CHOICE, PRIME, AND OPINION CONDITIONS



to the picture of Lavazzo. In the opinion-not-given condition, the confederate said, "I also did this task," without expressing an opinion. Then the confederate exited the room.

Participants then completed the implicit threat measure (experiments 1 and 2) and made their choices. Participants rated how important the choice was to them ("This means a lot to me," "This choice is unimportant," "I care a lot about this decision" (1 = strongly disagree, 7 = strongly agree; $\alpha = .86$). Making choice and choice importance ratings were randomized, which did not influence the results.

Finally, participants completed the same mood and power measures as in previous experiments. They also filled out a postexperimental questionnaire, which indicated that none of the participants guessed the purpose of the study or indicated suspicion with respect to relations between the different phases. Further, no participant recognized the brand of chocolate (Lavazzo) from which the two pieces came.

Results

Choice of the Lauded Option. A logistic regression with prime, choice, opinion conditions, and their interaction as independent variables and choice of chocolate as the dependent variable revealed a significant main effect of opinion condition ($\chi^2(1) = 5.68$, $p < .05$), which was qualified by the expected interaction between prime, choice, and opinion conditions ($\chi^2(1) = 7.91$, $p < .01$; fig. 4). No other effect was significant. We further analyzed this three-way interaction by running separate logistic regressions in the choice-for-self and choice-for-another conditions. Among choice-for-self participants, there was a significant interaction between prime and opinion conditions ($\chi^2(1) = 7.85$, $p < .01$). Specifically, participants in the nonmoney prime condition mostly followed the peer's opinion by more often choosing the lauded chocolate (73.1%), relative to when there was no opinion given (45.8%; $\chi^2(1) = 3.74$, $p = .053$). The money prime, in contrast, reversed this pattern. Participants who heard the peer's opinion chose the lauded chocolate (25%) less often than did participants who did not hear an opinion (54.2%; $\chi^2(1) = 4.11$, $p < .05$). Hence, replicating the first two experiments, when participants made a choice for themselves, a reactance pattern was observed.

However, the reactance effect disappeared when participants chose for another person. In the choice-for-another condition, there was a significant main effect of opinion condition ($\chi^2(1) = 7.63$, $p < .01$), which was qualified by the significant prime × opinion interaction ($\chi^2(1) = 5.49$, $p < .05$). Participants in the nonmoney prime condition again chose the lauded option more often when there were peer opinions (87%), compared to when there was no opinion given (45.5%; $\chi^2(1) = 7.63$, $p < .01$). In the money prime condition, however, the presence (vs. the absence) of the opinion did not influence the choice of the lauded option (50% vs. 54.5%; $\chi^2(1) < 1$, NS). Therefore, when choosing for another person, the indifference hypothesis was supported.

Threat. A 2 (choice: self vs. others) × 2 (prime: money vs. nonmoney) × 2 (opinion: given vs. not given) between-participants ANOVA on the number of threat-related words

selected revealed significant choice × prime ($F(1, 179) = 7.09$, $p < .01$) and choice × opinion interactions ($F(1, 179) = 3.90$, $p < .05$), which were qualified by a significant three-way interaction between choice, prime, and opinion conditions ($F(1, 179) = 5.37$, $p < .05$; fig. 5). We further analyzed this three-way interaction by conducting separate 2 (prime) × 2 (opinion) ANOVAs within each choice condition. In the choice-for-self condition, the analysis yielded a significant main effect of prime condition ($F(1, 179) = 8.58$, $p < .01$) and a significant main effect of opinion condition ($F(1, 179) = 7.77$, $p < .01$), which were qualified by a marginally significant prime × opinion interaction ($F(1, 179) = 3.32$, $p = .070$). Specifically, in the nonmoney condition, participants who had received unsolicited opinions ($M = 1.38$, SD = 1.27) and those who had not did not differ in how many threat-related words they selected ($M = 1.17$, SD = 1.01; $F < 1$, NS). However, as in the previous experiments, participants in the money condition selected more threat-related words after they had received unsolicited opinions ($M = 2.46$, SD = 1.35) than after they had not ($M = 1.42$, SD = 1.02; $F(1, 179) = 10.42$, $p < .01$).

In the choice-for-another condition, the ANOVA analysis did not reveal any significant effect (F's < 2.14, p's > .14). Therefore, when choosing for another person, an unsolicited opinion by another consumer did not elicit threat feelings in participants, even if they had been reminded of money.

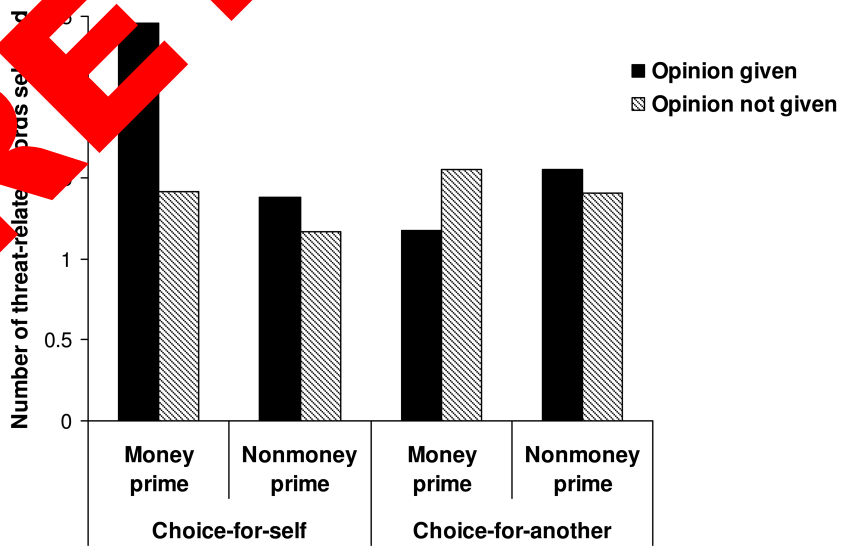
Mediation. Because there was no effect of prime and opinion conditions or the prime × opinion interaction on the threat score among participants in the choice-for-other condition, we conducted a mediated moderation model for participants in the choice-for-self condition only.

dicted that prime condition would moderate the effect of opinion condition on the number of threat-related words selected. Specifically, we predicted that participants reminded of money would select more threat-related words in the opinion-given condition than in the no-opinion condition. We also predicted that threat feelings would directly influence participants' choice of the lauded option. We tested this model with three equations, displayed in table 1. Subsequent testing of conditional indirect effects (based on 5,000 bootstraps) indicated that the number of threat-related words that participants selected mediated the effect of opinion condition on the choice of lauded option in the money condition (95% CI: 0.0[illegible] and [illegible]97) but not in the nonmoney condition (95% [illegible] −0.0[illegible] and 0.0915). These conditional indirect effects also indicate why the prime × opinion interaction did not become completely insignificant in the last equation. That is, when controlling for threat scores, the effect of opinion on our choice measure was still significant in the money condition (due to no mediation) but not in the nonmoney condition.

Choice importance. We averaged the three questions about choice importance. A 2 (choice) × 2 (prime) × 2 (opinion) between-participants ANOVA on the averaged choice importance measure revealed a main effect of choice condition ($F(1, 179) = 25.47$, $p < .001$) and a main effect of prime condition ($F(1, 179) = 4.97$, $p < .05$), which were qualified by a significant choice × prime interaction ($F(1, 179) = 15.51$, $p < .001$). No other effect was significant. In the choice-for-self condition, participants in the money prime ($M = 4.27$, SD = 1.16) and nonmoney prime ($M = 3.96$, SD = 1.22) conditions did not differ in terms of the importance they placed on the choice ($F(1, 179) = 1.53$, p

FIGURE 5

EXPERIMENT 3: THREAT SCORES AS A FUNCTION OF CHOICE, PRIME, AND OPINION CONDITIONS



> .21). In the choice-for-another condition, however, participants in the money prime condition ($M = 2.64$, SD = 1.10) placed less importance on the choice than did their counterparts in the nonmoney prime condition ($M = 3.76$, SD = 1.43; $F(1, 179) = 19.15$, $p < .001$).

Decomposed otherwise, when participants were reminded of money, they perceived the choice for another as less important than for themselves ($F(1, 179) = 39.76$, $p < .001$). By contrast, nonmoney prime condition participants perceived the choice as equally important, regardless of whether it was for themselves or another person ($F < 1$).

Alternate Explanations. We assessed whether our manipulations inadvertently affected positive affect ($\alpha = .75$), negative affect ($\alpha = .76$), or feelings of power ($\alpha = .69$). As expected, they did not (F's < 1.87, p's > .17).

Discussion

Experiment 3 found that money reminders engendered reactance to an unsolicited opinion when choosing for the self but indifference when choosing for another person. Specifically, when choosing for themselves, participants in the money condition chose the lauded chocolate less often than the other chocolate, whereas participants in the nonmoney condition followed the opinion they had been given by choosing the lauded chocolate more often than the other chocolate. As in previous experiments, the reactance effect in the money condition was mediated by threat feelings, which demonstrated again that money reminders made people aware that their decision autonomy could be asserted. Yet there was no uptick in threat when participants chose for another person.

As expected, we showed that participants reminded of money perceived a choice made on behalf of another as less important than a choice for themselves. Decision freedom in the former case apparently did not need to be defended. Notably, although money-reminded participants deemed choices for themselves to be more important than choices for another person, they did not value choices for themselves any more than did participants in the nonmoney condition. Hence, participants in the money and nonmoney conditions valued choices made for themselves equally, but money reminders highlighted the importance of freedom and led participants to more readily defend it via reactance.

GENERAL DISCUSSION

This article examined how the idea of money influences consumers' response to social influence. We pitted two hypotheses against each other: one that posited that consumers reminded of money would be insensitive to others' attempts to influence their choices and behavior (indifference hypothesis) and another that posited that reminders of money would trip off a motivation to reclaim threatened freedom by behaving with reactance (reactance hypothesis). Across three experiments, we found support for the reactance hypothesis, and in one experiment (experiment 3) we also constructed a situation in which the indifference hypothesis was supported.

Experiment 1 showed that an authority command compelled participants who had been reminded of money earlier to choose the option that was not recommended by the authority, whereas without a money reminder participants were more inclined to choose the option recommended by the authority, evidence that supports the reactance hypothesis. Experiment 2 confirmed the effect in the context of an offhand comment made by a peer. Participants' opinions in the nonmoney condition conformed to the opinions of a peer, whereas participants in the money condition went in the opposite direction. Experiment 3 altered whether participants were choosing for the self or another person, under the prediction that money reminders devalue the importance of choices for another related to the self, which in turn would qualitatively change participants' reactions to social influence. As expected, encountering an unsolicited opinion engendered reactance when participants were contemplating a choice for themselves but indifference when participants were choosing for another.

In addition, we examined clear evidence across the studies as to what process accounted for our effects. Thrice measuring implicit threat and once measuring explicit threat, we found evidence for its mediating role in producing contrary reactance, such robust evidence of mediation is noteworthy.

Social influence is an important vehicle for consumers to gather product information (Herr et al. 1991) and set up behavior anchors (Goldstein et al. 2008). Consumers tend to comply with social influence because conforming with others facilitates behavior efficiency and maintenance of social relationships (Cialdini and Goldstein 2004). This was indeed the case in the nonmoney conditions in our studies. Participants behaved in line with the source's influences, in that they obeyed an authority source (experiment 1) and assimilated to the implicit verbal influence (experiments 2 and 3) of others. This corroborates the established finding that these paradigms typically induce assimilative behavior (Conway and Schaller 2005; Herr et al. 1991). In this article, we demonstrated an important boundary condition, under which social influence backfires, pushing consumers to behave opposite of the influence intent. When the concept of money was subtly activated, even an offhand remark produced opposite opinions on consumers' product evaluations because others' opinions were perceived as a constraint on their decision freedom.

This research has potential implications for advertisers and marketers. Money cues are frequently present in the social environment (e.g., television spots mentioning savings or discounts, in-store signage with dollar signs, billboards advertising the state lottery). These money cues may function in the same way as the money primes in our studies and lead consumers to retaliate against perceived influences on their behavior. As one example, in an effort to promote their business around northern California, Bank of America erected signs around the city of Berkeley stating that their automated teller machines were "sprinkled liberally" around

town. This thinly veiled ploy to appeal to the people of Berkeley (who are known for their liberal, left-leaning political orientation) would, according to the current studies, likely be met with distrust and rejection because it combined a reminder of money (Bank of America being a bank) with an influence attempt. We look forward to research that tests other marketing implications of the current work.

The Self-Sufficiency Theory of Money Revisited

This research highlighted that money-primed people strive for autonomy and freedom in contexts where others aimed to steer their preferences and decisions. We tested two competing hypotheses, indifference and reactance, that were derived from the notion of self-sufficiency. Supportive of an indifference orientation, past research has found that activating the idea of money results in people preferring to work and play alone, as well as registering no psychological changes from being ostracized (Vohs et al. 2006; Zhou et al. 2009). Supportive of a reactance orientation, past research has found that activating the idea of money leads to perseveration on challenging tasks when help is offered and refusals to give help when it had been requested (Vohs et al. 2006).

Yet no direct tests had assessed which facet of self-sufficiency (autonomous goal striving vs. interpersonal insensitivity) dominates behavior. The current experiments did just that, and our findings consistently documented support for the reactance hypothesis. If others are perceived as a threat to one's freedom, then people reminded of money are not insensitive to others' actions and indeed react quite strongly. Nonetheless, we showed that people reminded of money can become indifferent to others when their ability to behave autonomously decreased in importance. Particularly, we found that when people were making a choice on another's behalf, they did not experience threat or show opposition in their choices when social influence factors were present.

The current research, together with earlier work, suggests that autonomous goal striving is the more dominant facet of money-induced self-sufficiency. When others are perceived as thwarting one's autonomy, people reminded of money are in fact sensitive to their actions and mount a defense to restore perceptions of competence. Yet it appears that when one of the facets of money reminders decreases in importance (i.e., when others are irrelevant to one's focal goal or people devalue pursuit of the goal), then being reminded of money can cause people to become immune and indifferent to others.

Our research also paves the way for new theoretical and empirical avenues. First, three studies showed that money-induced reactance did not vary as a function of the blatancy of the influence attempt. Future studies that manipulate social influence blatancy may shed more light on the relationship between influence blatancy and money-induced reactance. Second, experiment 3 found that participants reminded of money devalued the choice for a person with whom they had a moderately intimate relationship and consequently were indifferent to an attempt to influence their choice in this context. Taking this finding to its extreme, it is likely that when money-primed people choose for a person with whom they are hardly acquainted, social influence would elicit a solidly indifferent pattern. However, would social influence engender reactance when money-reminded people choose for an intimate partner—someone for whom the self and other share significant overlap? We eagerly await research on this question. Third, research on the effect of an influence attempt from an intimate partner would illuminate the psychology of money as it pertains to interpersonal functioning.

Conclusion

Three experiments tested and moved hypothesis pertaining to the relationship between subtle reminders of money and personal action freedom. When the concept of money had been activated, people defended themselves against social influence attempts via reactance, presumably as a route to reassert their ability to behave autonomously. Mired in threat, people reminded of money retaliated by offering evaluations and making choices that ran counter to the direction of social influence attempt. These findings offer fresh insights into the self-sufficiency theory of money and advance new ideas about money's ability to stimulate a longing for freedom.

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