



Journal of Consumer Research, Inc.

---

Show Me the Honey! Effects of Social Exclusion on Financial Risk-Taking

Author(s): Rod Duclos, Echo Wen Wan, and Yuwei Jiang

Reviewed work(s):

Source: *Journal of Consumer Research*, (-Not available-), p. 000

Published by: [The University of Chicago Press](#)

Stable URL: <http://www.jstor.org/stable/10.1086/668900>

Accessed: 16/12/2012 01:12

---

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at <http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



*The University of Chicago Press and Journal of Consumer Research, Inc. are collaborating with JSTOR to digitize, preserve and extend access to Journal of Consumer Research.*

<http://www.jstor.org>

# Show Me the Honey! Effects of Social Exclusion on Financial Risk-Taking

ROD DUCLOS  
ECHO WEN WAN  
YUWEI JIANG

This research examines the effects of social exclusion on a critical aspect of consumer behavior, financial decision-making. Specifically, four lab experiments and one field survey uncover how feeling isolated or ostracized causes consumers to pursue riskier but potentially more profitable financial opportunities. These daring proclivities do not appear driven by impaired affect or self-esteem. Rather, interpersonal rejection exacerbates financial risk-taking by heightening the instrumentality of money (as a substitute for popularity) to obtain benefits in life. Invariably, the quest for wealth that ensues tends to adopt a riskier but potentially more lucrative road. The article concludes by discussing the implications of its findings for behavioral research as well as for societal and individual welfare.

Social exclusion (i.e., being alone, isolated, or ostracized, sometimes with explicit declarations of dislike, but other times not; Baumeister et al. 2005; Williams 2007) is a rather common experience. Romantic relationships dissolve; people are ignored at parties or in office conversations; offers of friendship are rebuffed. Suggestive of the universality of the phenomenon, metaphors such as “getting the cold shoulder,” “being left behind,” or “getting dumped” are found in numerous languages around the world. And while one might hope that recent advances in communi-

cation technologies and social media decrease the prevalence of social exclusion, recent research shows that modern societies have in fact become lonelier places in the last 40 years. Twenge, Catanese, and Baumeister (2002) found, for instance, that people entertain fewer stable relationships and, as a result, feel generally less connected to others. In the same vein, Putnam (1995, 2000) found that Americans today are less likely to join organizations and visit friends than were their elder generations. Finally, statistics from the US Census Bureau (1998) reveal that the proportion of citizens living alone doubled from 13% in 1960 to 26% at the turn of the twenty-first century. Part of this growth, note Twenge et al. (2002), is caused by the sharp increase in divorce rates, another clear indicator of unstable social relations.

Rod Duclos (rod.duclos@ust.hk) is assistant professor of marketing at the Hong Kong University of Science and Technology, Clear Water Bay, Hong Kong. Echo Wen Wan (ewan@business.hku.hk) is associate professor of marketing at the University of Hong Kong, Pokfulam Road, Hong Kong. Yuwei Jiang (msjiang@polyu.edu.hk) is assistant professor of marketing at the Hong Kong Polytechnic University, Hung Hom, Hong Kong. This research was supported in part by the Asian Center for Branding and Marketing and the Research Grants Council of Hong Kong via grants DAG08/09.BM09 and GRF 640509 awarded to the first author; grant HKU 752908H awarded to the second author; and grants PolyU 4-ZZ6C, PolyU A-PK03, GRF 5442/10H, and ECS 5514/12H awarded to the third author. For their help with prior versions of this manuscript, the authors are indebted to Jim Bettman, Bob Wyer, and the members of the review team. Special thanks are also extended to Rashmi Adaval, Amy Dalton, Maria Galli, Jiewen Hong, Tom Meyvis, A+ Mukhopadhyay, A. V. Muthukrishnan, Jaideep Sengupta, Mark Wu, Rongrong Zhou, Fuzz, Paul, and Spot. For correspondence, please contact Rod Duclos.

Noting the prevalence and sometimes severe consequences of social exclusion, Mead et al. (2011) were the first to examine this phenomenon’s ramifications for consumption behavior. Most notably, these authors found that thwarting consumers’ need for social connection leads them to spend strategically in service of affiliation. For illustration, relative to control, excluded participants in their studies were more likely to buy a product symbolic of group membership, tailor their spending preferences to those of an interaction partner, spend money on an unappealing food favored by a peer, and try cocaine if doing so granted them an opportunity to commence social connections. Seeking to extend this work, the present paper examines the effects of social exclusion on another important consumption area, financial decision-making.

*Ann McGill served as editor and Baba Shiv served as associate editor for this article.*

*Electronically published December 6, 2012*

Consumers’ welfare largely depends on the soundness of their financial decisions (e.g., choosing mortgages, saving

to fund college education or retirement, using credit cards to fund current consumption, deciding how to pay for health care and insurance, investing in the stock market, etc.). In many such domains, however, consumers often lack appropriate information and/or knowledge, which renders them susceptible to serious biases with large personal and societal consequences. Consistent with this assessment, the 2011 Consumer Financial Literacy Survey by the National Foundation for Credit Counseling (NFCC) reports that 56% of Americans do not maintain a budget or track their expenditures; 33% do not have any nonretirement savings; 40% carry credit-card debt from month to month; 28% do not pay all their bills on time; 7% have debt in collection; and a record 41% would give themselves a grade of C, D, or F on their knowledge of personal finance.

Admittedly, many environmental and personal factors interact to shape one's financial decisions. The present work seeks to examine the influence of one such factor, social exclusion, on financial risk-taking. Specifically, this article intends to document when and explain why feeling excluded fosters riskier but potentially more lucrative decisions by consumers. With this in mind, our empirical inquiry previews as follows.

Study 1 examines whether feeling excluded from (vs. included in) a group exercise influences in a seemingly unrelated gambling survey participants' preferences for a riskier (i.e., low odds/high reward) but potentially more lucrative lottery. Study 2 ascertains the directional impact of social exclusion (vs. inclusion) on financial decisions. That is, does social exclusion foster risk taking or, in contrast, does inclusion breed preferences for safer alternatives? Seeking to consider the role of affect in the process, study 2 also examines whether negative mood in general and sadness in particular influence consumers' decision making. Study 3 sheds light on the mechanism by which consumers come to favor riskier investment schemes. Extending this effort, study 4 assesses when and why consumers may or may not make risky financial decisions. In parallel, studies 3 and 4 consider the possible influence of affect and self-esteem in the process. Finally, study 5 examines the impact of social exclusion on financial risk-taking outside the lab. Specifically, study 5 aims to ascertain whether our experimental findings replicate in the real world with heterogeneous populations (e.g., in age, income, education) facing various levels of chronic social exclusion. In sum, our five studies (i.e., four experiments and one field survey) initiate a line of research intended to test when and explain why social exclusion causes financial risk-taking.

## THEORETICAL BACKGROUND

In a social system, people obtain what they want via two primary means, popularity and money. Popularity refers to being liked, supported, or admired to the point where others are willing to provide (sometimes at a cost to themselves) what one needs to flourish in life and protect against unexpected or unwanted events. Similarly, monetary assets can help secure the resources one needs to maintain control over

one's life's course as well as the autonomy to choose and pursue the activities consistent with one's goals, beliefs, and values.

Because money and group membership can help acquire similar benefits, consumers are likely to turn to money (as a substitute for popularity) when their efforts to seek and/or maintain social connections are thwarted. Consistent with this idea, prior research on the symbolic power of money finds that, relative to socially included counterparts, excluded participants are less willing to donate funds for orphans; exhibit stronger desires for money (as suggested by their overestimation of coin sizes); and, finally, experience more distress when merely thinking about money they spent previously (Zhou, Vohs, and Baumeister 2009). Interestingly, this psychological distress can be reduced if participants are allowed to touch money again in a bill-counting task.

Extending this work, we propose that, in absence of social support, forlorn consumers will need significantly more money to secure what they need out of the social system. As such, experiencing interpersonal rejection should heighten the instrumentality of money as a means for obtaining benefits from the world. The ensuing quest for money, we predict, may foster riskier but potentially more lucrative financial decision-making. Separate lines of research in the social sciences support our theorizing and predictions about money as a means to secure control in life.

## Money and Control

For Furhnam (1984), money serves not only to acquire what one needs, wants, or desires but also to impress and control others. Similarly, works by Tang (1995) and Yamachi and Templer (1982) stress the power that money affords. Money empowers consumers to control their life by freeing them from budget constraints, thereby enabling them to select the products and services best suiting their prerogatives.

The literature on health and well-being also provides evidence suggesting a link between money and control in life. Using national probability samples, Lachman and Weaver (1998) found that, compared to low-income counterparts, high-wage earners exhibit a higher sense of "mastery" (i.e., control), which in turn predicts lower perceived constraints, fewer depression symptoms, better overall health, and ultimately greater life satisfaction. Echoing these results, a nationwide survey of 719 monozygotic and dizygotic twins revealed that, while (perceived) wealth positively influences life satisfaction, the relationship between these two variables is in fact mediated by subjective feelings of control. Financial resources appear to bolster one's feelings of protection against "environmental shocks" (i.e., unexpected negative events), which in turn promotes life satisfaction (Johnson and Krueger 2006). In the same vein, a 2-year longitudinal study of 756 people who had lost employment found that the critical mediating mechanisms in the chain of adversity from job loss to poor health are (i) financial strain and (ii)

Please use DOI when citing. Page numbers are not final.

reduction in personal control (Price, Choi, and Vinokur 2002).

Finally, research on the psychological and behavioral consequences of money also seems to suggest that wealth can indeed afford control in life. In a series of experiments, Vohs, Mead, and Goode (2006, 2008) found that money brings about a sense of self-sufficiency vis-à-vis others. Compared to control counterparts, participants primed with the concept of wealth became less likely to request help from others. Instead, being reminded of money led participants to play alone, work alone, and put more physical distance between themselves and a new acquaintance. Reminders of money also prompted participants to work harder on challenging tasks and increased their willingness to take on more personal work. This sense of self-sufficiency brought about by money is supportive of the instrumentality-of-money argument put forth earlier. Indeed, integrating this finding with the literatures reviewed above, we propose that money bolsters one's sense of control by increasing the perception that one can cope with life without relying on others. By affording access to critical resources necessary in dire circumstances, wealth provides a sense of control over one's environment. In contrast, lacking monetary resources reduces feelings of efficacy and instead causes stress and hardship. Hence, we argue that, in absence of social support, excluded consumers would need substantially more money to secure what they need to thrive in the world. As a result, social exclusion heightens the instrumentality of money as a means of securing benefits from the social system. The quest for wealth that ensues should then favor riskier but potentially more lucrative financial opportunities.

### Alternative Explanations

Prior work in marketing and psychology shows that affect influences risk taking in decision making (Isen and Patrick 1983; Leith and Baumeister 1996; Mittal and Ross 1998). Of particular relevance here is research by Raghunathan and Pham (1999) suggesting that sadness can foster riskier inclinations in both job selection and gambling decisions. As one might expect, experiencing social exclusion may very well engender a fair amount of negative mood in general and possibly sadness in particular. Hence, to document the direct and unique impact of social exclusion on financial risk-taking, our work will attempt to disentangle affect from social exclusion.

A second alternative explanation for the proposed effect may lie in the influence of self-esteem on risk taking. Prior research shows indeed that interpersonal rejection can also function as a threat to self-worth (Leary et al. 1995). Hence, our experimental work will also examine whether self-esteem plays any causal role in the exclusion/risk-taking relationship.

Finally, one might wonder whether financial risk-taking as a result of social exclusion is nothing more than the manifestation of self-defeating behavior (i.e., a "deliberate action with clear negative effects on the self or on the self's

projects"; Baumeister and Scher 1988). Lending apparent support to this view is work by Twenge et al. (2002) suggesting that the prospect of ending up alone in life (i.e., being rejected) can increase procrastinating with pleasurable activities rather than practicing for an upcoming test. As our studies will show, however, choosing a riskier gamble or investment plan in our paradigm cannot be construed as self-defeating behavior. Indeed, because the expected value of our risky financial products is never inferior to that of their safer counterparts, opting for the former cannot be construed as an inferior course of action.

## STUDY 1: SOCIAL EXCLUSION AND FINANCIAL RISK-TAKING

The main purpose of study 1 was to test whether social exclusion leads to riskier but potentially more lucrative financial decision-making. To this end, we invited participants to play Cyberball, an online ball-tossing exercise intended to manipulate one's state of social exclusion (Williams, Cheung, and Choi 2000; Williams and Jarvis 2006). Next, in a seemingly unrelated gambling study, participants indicated their preference between two hypothetical lotteries of equal expected utility. As theorized earlier, we predicted that socially excluded participants would favor the riskier option (i.e., low odds/high reward) more strongly than their included counterparts.

### Participants, Design, and Procedure

After signing a consent form, 59 undergraduate students from the University of Hong Kong were introduced to the rules of Cyberball (Williams et al. 2000), a computerized ball-tossing exercise that our cover story presented as a mental visualization task. Consistent with this scenario, participants were informed that, for the purpose of the study, they would be linked with two other players online. Each player was to mentally visualize his/her partners (e.g., their looks, personalities), the weather of the day, the environment, and so on, while using the icons and arrows on the computer screen to virtually catch and throw back a ball. Participants were also told that how much they threw or caught the ball didn't matter. These instructions were meant to induce feelings similar to those in a real-world ball-tossing game and to assure participants that not getting the ball did not harm task performance.

In reality, participants were assigned to one of two experimental conditions (social inclusion vs. exclusion). Participants in the inclusion condition received the ball one third of the time (i.e., 10 times out of 30 tosses) whereas their counterparts in the exclusion condition received it substantially less (i.e., three times at the beginning of the game and never again afterward). Upon completing the task, participants answered classic manipulation-check questions that measured on 1 (not at all) to 5 (very) scales the extent to which they felt "rejected" and "left out" during the game (Williams et al. 2000).

To assess financial risk-taking, we next invited partici-

Please use DOI when citing. Page numbers are not final.

pants to take part in a seemingly unrelated gambling study featuring two hypothetical lottery options. Option A, the safer alternative, offered high odds/low reward (i.e., an 80% chance of winning \$200 and a 20% of winning nothing) whereas riskier option B offered low odds/high reward (i.e., a 20% chance of winning \$800 and an 80% chance of winning nothing). After considering this information, participants were to report their relative preference between the two options on a 1 (strongly prefer option A) to 8 (strongly prefer option B) scale. Upon completion of this and other unrelated studies, participants were debriefed, paid, and thanked.

## Results

To confirm that our manipulation was successful, we averaged participants' ratings of how "rejected" and "left out" they felt ( $r = .56, p < .001; \alpha = .71$ ) before submitting the resulting score to a one-way ANOVA. As expected, receiving the ball infrequently while seeing the other two players toss it back and forth to each other fostered a sense of social exclusion ( $M_{\text{excl}} = 3.75$  vs.  $M_{\text{incl}} = 2.12; F(1, 57) = 48.82, p < .001$ ). And as hypothesized, excluded participants preferred the riskier lottery (i.e., option B) more strongly than their included counterparts ( $M_{\text{excl}} = 4.23$  vs.  $M_{\text{incl}} = 2.79; F(1, 57) = 6.051, p < .02$ ).

## Discussion

After being induced to feel either excluded or included in a ball-tossing exercise, participants who experienced social rejection exhibited greater risk-taking propensities in a subsequent gambling study. Although supportive of our predictions, study 1 leaves several questions unanswered. For instance, what is the directional impact of social exclusion on financial decision-making? Does exclusion lead to riskier behavior (as argued earlier), or, in contrast, does inclusion lead consumers to prefer safer options? Furthermore, could affect (rather than social exclusion itself) be the real driving force behind our findings? After all, it is conceivable indeed that interpersonal rejection also leads to negative mood (Warburton, Williams, and Cairns 2006). We next turn to study 2 to answer these questions.

### STUDY 2: CONSEQUENTIAL CHOICE

The purpose of study 2 was threefold. First, we sought to ascertain the directional impact of social exclusion (vs. inclusion) on financial decision-making. That is, we sought to examine whether it is social exclusion that fosters risk taking or inclusion that breeds consumers' preferences for safer investing. Second, we sought to examine an alternative explanation for our results in study 1. Indeed, as acknowledged earlier, one might wonder whether affect (rather than social exclusion itself) is the real driving force behind our effect. Third, we sought to examine the robustness of our findings when real financial consequences are at stake for consumers.

## Participants, Design, and Procedure

Upon signing a consent form, 168 undergraduate students from the University of Hong Kong were randomly assigned to one of four experimental conditions (exclusion vs. inclusion vs. baseline vs. negative mood). The first task participants completed was an alleged memory study for which they were to recall a personal experience. Per our theorizing, participants in the first two conditions elaborated on a social experience where they felt either included or excluded (Mead et al. 2011; Pickett, Gardner, and Knowles 2004). To assess the directional impact of social exclusion on risk taking, we added a baseline condition where participants recalled everything they ate and drank in the last week. Finally, to examine the viability of affect as an alternative explanation for our effect, we added a negative-mood condition where participants recalled an instance during which they experienced pain (e.g., migraine, toothache; see Chen et al. 2008).

Immediately after completing the alleged memory study, participants answered a battery of questions intended to measure social exclusion and affect (i.e., mood in general and sadness in particular). To this effect, we asked participants to indicate on 1 (not at all) to 5 (very) scales the extent to which they felt "rejected" and "left out" (to assess social exclusion) and "good, bad, friendly, pleasant, angry, happy, sad, etc." to assess overall affective state (Carter-Sowell, Chen, and Williams 2008; Williams et al. 2000).

To assess risk taking, we then invited participants to take part in a seemingly unrelated gambling study. Similar to study 1, participants indicated their relative preference between two options this time of unequal expected utility. Option A offered a 20% chance of winning \$200 and an 80% chance of winning nothing whereas option B offered a sure cash payment of \$30. To make our task consequential, we bound participants in this study to their choice and paid them accordingly. That is, participants who chose the uncertain gamble spun a digital lottery wheel and were paid \$200 if they won whereas those who chose \$30 in cash were paid immediately.

## Results

*Manipulation Checks.* To confirm that our manipulation was successful, we again averaged participants' ratings of how "rejected" and "left out" they felt ( $r = .66, p < .001; \alpha = .79$ ) before submitting the resulting score to a one-way ANOVA. As expected, planned contrasts revealed that participants in the exclusion condition ( $M_{\text{excl}} = 3.12$ ) reported feeling more excluded than their counterparts in the inclusion ( $M_{\text{incl}} = 1.80; F(1, 164) = 40.23, p < .001$ ), baseline ( $M_{\text{baseline}} = 2.04; F(1, 164) = 26.91, p < .001$ ), and negative mood ( $M_{\text{neg.mood}} = 2.43; F(1, 164) = 10.38, p < .01$ ) conditions.

*Choice of Payment Scheme.* To assess the impact of social exclusion on financial risk-taking, we compared the proportion of participants within each condition who chose

Please use DOI when citing. Page numbers are not final.

option A (i.e., the risky lottery) as their payment scheme. As expected, socially excluded participants ( $M_{\text{excl}} = 58\%$ ) selected the risky but more lucrative option more often than their counterparts in either the baseline ( $M_{\text{baseline}} = 31\%$ ;  $z = 2.30$ ;  $p < .03$ ), negative-mood ( $M_{\text{neg.mood}} = 30\%$ ;  $z = 2.36$ ;  $p < .02$ ), or inclusion condition ( $M_{\text{incl}} = 26\%$ ;  $z = 2.84$ ;  $p < .01$ ; see fig. 1).

*Affect.* To examine whether affect might in fact be the real driving force behind our findings, we first conducted a factor analysis to check the reliability of our mood measures (e.g., anger, happiness, sadness, etc.). Since all items loaded on only one factor ( $\alpha = .91$ ), we averaged them and used the resulting score in a series of planned contrast analyses.

As expected, we found that excluded participants' overall mood ( $M_{\text{excl}} = 2.59$ ) was less favorable than their counterparts' in the inclusion ( $M_{\text{incl}} = 4.13$ ;  $F(1, 164) = 107.35$ ,  $p < .001$ ) and baseline ( $M_{\text{baseline}} = 3.60$ ;  $F(1, 164) = 45.40$ ,  $p < .001$ ) conditions. Consistent with this finding, excluded participants exhibited greater sadness ( $M_{\text{excl}} = 3.30$ ) than their counterparts in the inclusion ( $M_{\text{incl}} = 1.72$ ;  $F(1, 164) = 45.95$ ,  $p < .001$ ) and baseline ( $M_{\text{baseline}} = 2.19$ ;  $F(1, 164) = 22.44$ ,  $p < .001$ ) conditions. Importantly, however, excluded participants did not differ from their negative-mood counterparts in terms of affect in general ( $M_{\text{excl}} = 2.59$  vs.  $M_{\text{neg.mood}} = 2.89$ ;  $F(1, 164) = 2.51$ ,  $p > .11$ ) or sadness in particular ( $M_{\text{excl}} = 3.30$  vs.  $M_{\text{neg.mood}} = 3.05$ ;  $F(1, 164) = 1.13$ ,  $p > .28$ ).

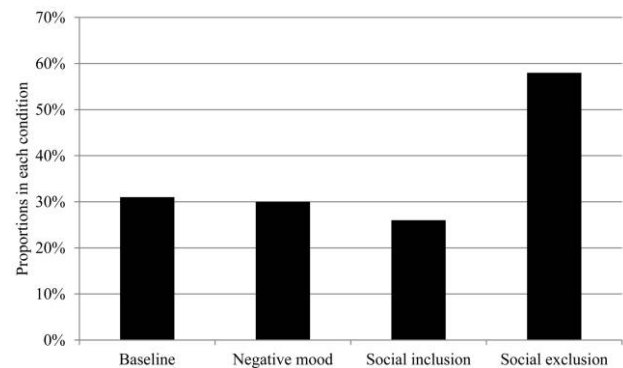
Although such null effects do not positively rule out mood as an alternative explanation for our findings, they certainly suggest that the financial risk-taking exhibited by excluded participants was not merely the result of negative mood. The absence of correlation (despite a large sample size) between participants' affect and their relative preference of payment scheme ( $z = -.10$ ,  $p = .19$ ) only reinforces this assessment.

## Discussion

Study 2 makes three contributions, the first of which concerns the directional impact of social exclusion (vs. inclusion) on financial decision-making. Indeed, by documenting that excluded participants chose a riskier payment scheme more often than their included and baseline counterparts, study 2 suggests that social rejection, not acceptance, drove our findings in studies 1 and 2. Second, study 2 clarifies the mechanism underlying our effect. Indeed, although we readily concur that social exclusion can/does generate some degree of negative mood, the latter (by itself) failed to replicate the risk-taking tendencies exhibited by socially excluded participants. This important finding suggests that affect (in general) and sadness (in particular) are improbable alternative explanations for our results. Third, by replicating and extending study 1's response pattern following a different manipulation of social exclusion as well as a different measure of risk taking, study 2 shows that our effect is not merely the by-product of a given manipulation (i.e., Cyberball) and that it holds even when real financial consequences are at stake for consumers.

FIGURE 1

PROPORTION OF PARTICIPANTS CHOOSING RISKY OPTION (STUDY 2)



## STUDY 3: MONEY AS A MOTIVATIONAL INSTRUMENT

By showing sadness and affect to be improbable alternative explanations for our findings, study 2 was instrumental in shedding light on what the underlying mechanism for our results is *not*. The main purpose of study 3, then, was to examine what may indeed mediate the relationship between social exclusion and financial risk-taking. With this in mind, study 3 was designed with two specific goals.

First, we sought to examine the motivational role of money in our studies; why would excluded consumers engage in risky financial decision-making? As reviewed earlier, people can obtain what they want from their social world via two primary routes, popularity and money (Zhou et al. 2009). Just as popularity ensures that other group members are willing to provide (sometimes at a cost to themselves) what one needs to flourish in life, money affords individuals the acquisition of the resources necessary to support their life and protect themselves against unexpected or unwanted events (Johnson and Krueger 2006; Lachman and Weaver 1998; Zhou et al. 2009). Since both routes can independently provide consumers control over their life's course as well as the autonomy to choose and pursue the activities consistent with their goals, beliefs, and values, we argued that consumers are likely to turn to money (as a substitute for popularity) when their efforts to seek or maintain social connections are thwarted. Building on this argument, we proposed that, in absence of social support, forlorn consumers may need and seek significantly more money to secure what they wish out of the social system. As such, experiencing interpersonal rejection should heighten the instrumentality of money for obtaining benefits from the world. The ensuing quest for wealth, we predict, may foster riskier but potentially more lucrative financial decision-making.

To test this idea, we once again induced participants in

Please use DOI when citing. Page numbers are not final.

a state of social exclusion before engaging them in a financial decision task. Upon completion of this task, we examined participants' beliefs about the instrumentality of money to satisfy one's aspirations in life. If our proposition is correct, a mediation analysis should uncover the instrumental role of money in the exclusion/risk-taking relationship.

Second, we sought to examine the possible influence of self-esteem in our process. Indeed, while study 2 showed that negative mood (in general) and sadness (in particular) did not produce the risk-taking tendencies proper to social exclusion, we wondered whether another lurking variable, self-esteem, may play a role. Hence, a secondary goal of study 3 was to examine the possible confound of self-esteem threat with social exclusion.

### Participants, Design, and Procedure

After signing a consent form, 35 undergraduate students from the University of Hong Kong were randomly assigned to one of two experimental conditions (exclusion vs. inclusion). As in study 2, under the pretense of a memory experiment, we invited participants to recall a social experience where they felt either included or excluded (Mead et al. 2011; Pickett et al. 2004). Upon completion of the task, participants reported on 1 (not at all) to 5 (very) scales the extent to which they felt excluded (e.g., "rejected," "left out"; Williams et al. 2000) before answering self-esteem questions such as "How good do you feel about yourself?" and "How high is your self-esteem?" (Carter-Sowell et al. 2008).

To assess risk taking, we asked participants to complete a seemingly unrelated gambling survey whose instructions prompted respondents to indicate their relative preference between two lotteries. Lottery A offered an 80% chance of winning \$500 and a 20% chance of winning nothing whereas lottery B offered a 20% chance of winning \$2,400 and an 80% chance of losing \$100. As in study 1, both lotteries offered the same expected utility (i.e., \$400) but asymmetrical odds (i.e., B was riskier than A). After careful consideration of this information, participants reported their relative preference between the two options on a 1 (strongly prefer option A) to 8 (strongly prefer option B) scale where higher numbers indicate a stronger preference for riskier option B.

Next, to confirm that they did indeed perceive lottery B as riskier, we asked participants to judge the relative risk level of the two lotteries on a 1 (option A is much riskier) to 9 (option B is much riskier) scale. Finally, to assess their beliefs about the instrumentality of money to achieve one's goals in life, we asked participants to report on 1 (strongly disagree) to 9 (strongly agree) scales their level of agreement with a series of statements adapted from Tang (1995) and Yamauchi and Templer (1982; e.g., Money allows me to determine my own life course; Money allows me to have freedom in making choices; Money allows me to pursue activities that I like).

### Results

*Manipulation Checks.* To confirm that our manipulation was successful, we once again averaged participants' ratings of how "rejected" and "left out" they felt ( $r = .73$ ,  $p < .001$ ;  $\alpha = .83$ ) before submitting the resulting score to a one-way ANOVA. As expected, participants in the exclusion condition ( $M_{\text{excl}} = 3.78$ ) reported feeling more excluded than their included counterparts ( $M_{\text{incl}} = 1.85$ ;  $F(1, 34) = 52.16$ ,  $p < .001$ ).

To confirm that social exclusion did not affect risk perceptions unduly, we also examined participants' risk estimates of lottery A relative to B. As expected, we found no difference across conditions ( $M_{\text{excl}} = 7.56$  vs.  $M_{\text{incl}} = 7.59$ ;  $F < 1$ , NS). In fact, these relatively high means on a 1 (option A is much riskier) to 9 (option B is much riskier) scale confirm that both groups concurred equally strongly that lottery B is substantially riskier than A.

*Lottery Preference.* Consistent with the results of studies 1 and 2, we found again that social exclusion significantly strengthened participants' inclination to select the riskier course of action ( $M_{\text{excl}} = 3.44$  vs.  $M_{\text{incl}} = 2.17$ ;  $F(1, 34) = 4.59$ ,  $p < .04$ ).

*Instrumentality of Money.* To examine the role of money's instrumentality, we first submitted participants' answers to our mediation questionnaire to a factor analysis. This analysis confirmed that all items loaded reliably on only one factor ( $\alpha = .84$ ). We thus averaged participants' answers to create an index score intended to capture their beliefs about the instrumentality of money in life. An ANOVA using this index score as the dependent variable revealed that participants in the exclusion condition perceived money to be more helpful to thrive in the world than their counterparts in the inclusion condition ( $M_{\text{excl}} = 7.54$  vs.  $M_{\text{incl}} = 6.64$ ;  $F(1, 34) = 4.56$ ,  $p = .04$ ). As predicted, this suggests that feeling socially excluded does indeed enhance the perceived value of money.

The main purpose of study 3, however, was to test whether social exclusion leads to riskier but more lucrative financial decision-making *because* of the belief that money can help thrive in the social world. To test this triangular chain of events, we followed Baron and Kenny's (1986) four-step approach to mediation. Accordingly, we first regressed participants' gambling preferences on their inclusion/exclusion condition (0 = inclusion, 1 = exclusion). Consistent with the ANOVA reported earlier, this analysis suggests that social exclusion strengthened preferences for the riskier lottery ( $\beta = .35$ ;  $t(34) = 2.14$ ;  $p < .04$ ). Second, we regressed the instrumentality index on participants' inclusion/exclusion condition ( $\beta = .34$ ;  $t(34) = 2.13$ ;  $p = .04$ ), which confirmed that exclusion led participants to see money as more instrumental in life. Third, we regressed participants' gambling preferences on the instrumentality index ( $\beta = .46$ ;  $t(34) = 2.98$ ;  $p < .01$ ), which revealed a positive and significant relationship between the two variables. Fourth and last, we regressed participants' gambling preferences on their inclusion/exclusion condition and instrumentality-in-

Please use DOI when citing. Page numbers are not final.

dex score. While the instrumentality index remained significant ( $\beta = .39$ ;  $t(33) = 2.36$ ;  $p < .03$ ), participants' inclusion/exclusion condition no longer predicted their gambling preferences ( $\beta = .21$ ;  $t(33) = 1.32$ ;  $p > .19$ ). A 95% confidence interval calculation around the indirect effect (Preacher, Rucker, and Hayes 2007; Shrout and Bolger 2002) showed that this indirect effect was significantly different from zero (95% confidence interval [CI] = .05 to .91), which provides evidence that the effect of social exclusion on gambling preferences was fully mediated by participants' perception of the instrumentality of money in life (see fig. 2).

*Self-Esteem.* To examine the influence of self-esteem on our findings, we averaged participants' responses to our self-esteem questions ( $r = .68$ ,  $p < .001$ ;  $\alpha = .81$ ) before submitting the resulting score to an ANOVA. As suspected, excluded participants ( $M_{\text{excl}} = 2.04$ ) exhibited lower self-esteem than their included counterparts ( $M_{\text{incl}} = 3.53$ ;  $F(1, 34) = 29.55$ ,  $p < .001$ ). Hence, in addition to fostering feelings of social exclusion, our manipulation also threatened participants' ego. To establish whether, in turn, self-esteem might have played a causal role in the exclusion/risk-taking relationship, we once again followed Baron and Kenny's (1986) approach to mediation. The ensuing regression analyses revealed, however, that neither step 3 nor step 4 could be validated. Participants' self-esteem score did not predict their gambling preferences ( $\beta = -.03$ ;  $t(34) = -.17$ ;  $p > .86$ ). Furthermore, when both predictors were included in the model, the effect of social exclusion ( $\beta = .62$ ;  $t(33) = 2.87$ ;  $p < .01$ ) remained significant whereas that of self-esteem ( $\beta = .39$ ;  $t(33) = 1.83$ ;  $p = .08$ ) was only marginally so. These results fail to support self-esteem as a viable alternative explanation for our findings.

Discussion

The main goal of study 3 was to examine why social exclusion leads to greater financial risk-taking. Building on Zhou et al.'s (2009) work on the symbolic power of money, we proposed that social exclusion fosters riskier but potentially more lucrative courses of action because of the belief in money's instrumentality to thrive in a social world. To

test this idea, we induced participants in a state of social exclusion before engaging them in a new financial decision. Replicating the findings of studies 1 and 2, we found that feeling rejected led again to riskier gambling preferences. More importantly, we found this effect to be mediated by the perceived instrumentality of money. Excluded consumers perceived money as more helpful to obtain what they want out of the world around them. This, in turn, led them to pursue riskier but potentially more rewarding financial endeavors.

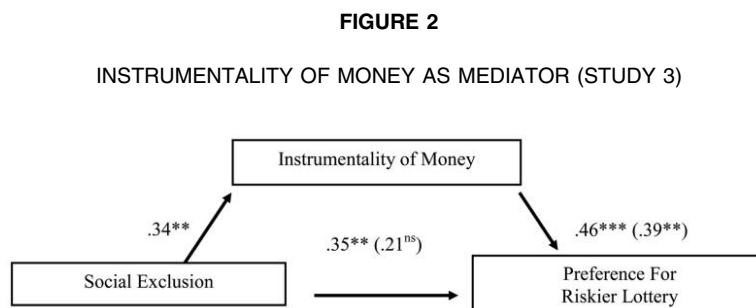
A secondary goal of study 3 was to examine the possible influence of self-esteem in our studies. Specifically, we sought to establish whether ego threats could provide a viable alternative explanation for our results. While we found that our manipulation did indeed threaten participants' self-esteem (in addition to fostering feelings of social exclusion), follow-up mediation analyses failed to support the self-esteem/risk-taking relationship. Hence, while we readily concur that social exclusion can indeed bruise self-worth, the latter does not seem to trigger the same risk-taking propensity. As such, self-esteem threat appears to be an improbable alternative explanation of our findings.

STUDY 4: CHALLENGING MONEY'S INSTRUMENTALITY

Study 3 provided mediation evidence for the process hypothesized; feeling excluded heightens the instrumentality of money in life, which in turn fosters riskier but potentially more lucrative financial decision-making. Hoping to complement these results with moderation data, we designed study 4 on the following premise. If social exclusion does indeed lead consumers to want more money as a means to secure control in life, then it stands to reason that "killing" the belief that money can help secure such control should inhibit subsequent financial risk-taking.

Participants, Design, and Procedure

To test the above hypothesis, we randomly assigned 128 undergraduates from the University of Hong Kong to one of four conditions in a 2 (social inclusion vs. exclusion) by



NOTE.—Significance levels are denoted by \* at  $p \leq .10$ ; \*\* at  $p \leq .05$ ; and \*\*\* at  $p \leq .01$ .

Please use DOI when citing. Page numbers are not final.



2 (lay beliefs about instrumentality of money to secure control: baseline vs. not instrumental) between-subjects design. As in studies 2 and 3, we manipulated social inclusion/exclusion by asking participants to recall a social experience that left them feeling either included or excluded (Mead et al. 2011; Pickett et al. 2004). For validation, we once again assessed participants' self-esteem (Carter-Sowell et al. 2008; see study 3) and how "rejected" and "left out" they felt (Williams et al. 2000; see studies 1–3).

To manipulate beliefs in the instrumentality of money, we engaged participants in an alleged reading-comprehension task. To this effect, participants reviewed a brief research report suggesting that learning foreign languages could improve overall academic achievement (i.e., baseline) or that money was often mistakenly believed to afford more freedom and control in life (i.e., not instrumental). By leaving participants' lay beliefs about money untouched, we hoped to replicate our earlier findings following the first report. In contrast, by "killing" the belief in money's instrumentality, we hoped to reduce financial risk-taking following the second report. Of note, to avoid differences in elaboration across conditions, our two reports mirrored each other in structure, syntax, and length (i.e., 220 words).

To assess risk taking, we next invited participants to complete a seemingly unrelated investment survey. Consistent with this scenario, instructions informed participants that our purpose was to learn about financial decision-making. To this end, they were granted \$100,000, which they were to invest (as they would their own money) for 12 months in one of two possible stock portfolios. Option A offered a 50% chance of returning \$50K and a 50% chance of losing \$25K. Option B offered a 90% chance of returning \$18K and a 10% chance of losing \$37K. As in studies 1 and 3, both investment plans offered the same expected utility (i.e., \$12.5K) but asymmetrical risk (i.e., A is riskier than B). Participants were to report their relative preference between the two plans on a 1 (strongly prefer option A) to 8 (strongly prefer option B) scale before reporting the portfolios' relative risk on a 1 (option A is much riskier) to 8 (option B is much riskier) scale.

In conclusion, participants completed several (seemingly unrelated) surveys about general feelings and attitudes in life. Of importance was for us to assess affect (i.e., PANAS; Watson, Clark, and Tellegen 1988) and participants' beliefs about the instrumentality of money to achieve goals in life (Tang 1995; Yamauchi and Templer 1982; see study 3).

## Results

**Manipulation Checks.** To validate our exclusion manipulation, we once again averaged participants' ratings of how "rejected" and "left out" they felt ( $r = .76, p < .001; \alpha = .86$ ) before submitting the resulting score to a one-way ANOVA. As expected, participants in the exclusion condition reported feeling more excluded than their included counterparts ( $M_{\text{excl}} = 3.22$  vs.  $M_{\text{incl}} = 1.63; F(1, 126) = 101.88, p < .001$ ).

To examine whether our manipulations might have in-

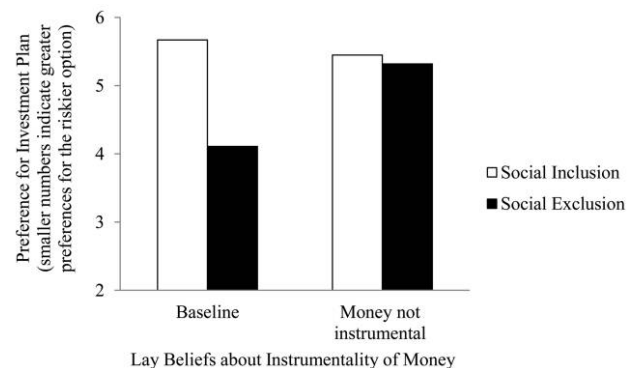
centally biased risk perceptions, we compared participants' risk estimates of portfolio A relative to B. As expected, our two-way ANOVA found no main effects and no interaction (all  $F < 1$ , all  $p > .49$ ). With means from all four cells below 2.75 on a 1 (option A is much riskier) to 8 (option B is much riskier) scale, participants from all conditions agreed equally strongly that portfolio A was indeed riskier than B.

**Investment Plan Preference.** Having validated our manipulations, we turned our attention to the impact of social exclusion and lay beliefs on financial risk-taking. A two-way ANOVA revealed no main effect by lay beliefs ( $F(1, 124) = 1.78, p > .18$ ) but a main effect by social exclusion ( $M_{\text{excl}} = 4.72$  vs.  $M_{\text{incl}} = 5.56; F(1, 124) = 5.12, p < .03$ ; lower numbers reflect stronger preferences for risky option A). More interesting, however, was the interaction of the two factors ( $F(1, 124) = 3.70, p = .057$ ) and the accompanying contrast analyses. Confirming our theorizing, planned comparisons in the baseline of the lay-beliefs condition revealed a simple effect of social exclusion. Recalling interpersonal rejection fostered preferences for riskier option A ( $M_{\text{excl}} = 4.11$  vs.  $M_{\text{incl}} = 5.67; F(1, 124) = 9.35, p < .01$ ), which replicates our earlier findings. When money's instrumentality to secure control in life was purported as a fallacy, however, social exclusion no longer nurtured risk taking ( $M_{\text{excl}} = 5.32$  vs.  $M_{\text{incl}} = 5.45; F < 1, \text{NS}$ ), which validates our hypothesis (see fig. 3).

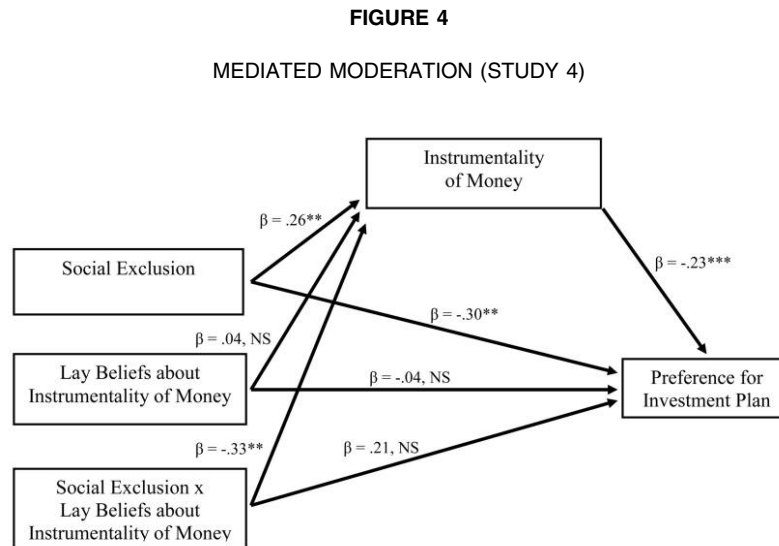
**Instrumentality of Money.** To examine the role of lay beliefs about money's instrumentality in our findings, we once again submitted participants' answers to our mediation questionnaire to a factor analysis. As in study 3, all items loaded reliably on only one factor ( $\alpha = .78$ ). We thus averaged participants' answers to create an index score of money's instrumentality.

We next examined whether this index mediated the relationship between the social exclusion by lay beliefs interaction and the dependent variable. To this end, we fol-

**FIGURE 3**  
PREFERENCE FOR INVESTMENT PLAN (STUDY 4)



Please use DOI when citing. Page numbers are not final.



NOTE.—Significance levels are denoted by \* at  $p \leq .10$ ; \*\* at  $p \leq .05$ ; and \*\*\* at  $p \leq .01$ .

lowed Baron and Kenny's (1986) and Muller, Judd, and Yzerbyt's (2005) four-step approach to mediated moderation.

First, we regressed participants' portfolio preferences on their exclusion condition (0 = inclusion, 1 = exclusion), lay beliefs condition (0 = baseline, 1 = money not instrumental), and interaction. Consistent with the ANOVA reported earlier, we found no main effect by lay beliefs ( $\beta = -.05$ ;  $t(124) = -.41$ ;  $p > .68$ ) but a main effect by exclusion ( $\beta = -.36$ ;  $t(124) = 3.06$ ;  $p < .01$ ) and a significant interaction ( $\beta = .28$ ;  $t(124) = 1.92$ ;  $p = .057$ ). Second, we regressed the instrumentality-index score on participants' exclusion condition, lay beliefs, and their interaction. Once again, we found no main effect by lay beliefs ( $\beta = .04$ ;  $t(124) = .35$ ;  $p > .72$ ) but a main effect by exclusion ( $\beta = .26$ ;  $t(124) = 2.15$ ;  $p < .04$ ) and a significant interaction ( $\beta = -.33$ ;  $t(124) = -2.23$ ;  $p < .03$ ). Third, we regressed participants' portfolio preferences on the instrumentality-index score ( $\beta = -.28$ ;  $t(126) = -3.27$ ;  $p = .001$ ), which revealed a negative and significant relationship between the two variables. Fourth and last, we regressed participants' portfolio preferences on their exclusion condition, lay beliefs condition, the exclusion by lay beliefs interaction, and money's instrumentality-index score. Of importance here was the fact that the instrumentality index remained significant ( $\beta = -.23$ ;  $t(123) = -2.64$ ;  $p = .009$ ) whereas the exclusion by lay beliefs interaction no longer predicted participants' portfolio preferences ( $\beta = .21$ ;  $t(123) = 1.41$ ;  $p = .16$ ). A 95% confidence interval calculation around the indirect effect (Preacher et al. 2007; Shrout and Bolger 2002) showed that this indirect effect was significantly different from zero (95% CI = .01 to .96). These results confirm that money's perceived instrumental-

ity mediated fully the relationship between the social exclusion by lay beliefs interaction and the dependent variable (see fig. 4).

*Mood and Self-Esteem.* To examine mood's role in our findings, we first composed positive- ( $\alpha = .89$ ) and negative-affect ( $\alpha = .92$ ) scores by averaging participants' responses to the PANAS (Watson et al. 1988). Using these scores as dependent variables, two-way ANOVAs revealed no main effect (positive affect:  $F_{\text{exclusion}}(1, 124) = .64$ ,  $p > .42$ ;  $F_{\text{lay beliefs}}(1, 124) = .05$ ,  $p > .82$ ; negative affect:  $F_{\text{exclusion}}(1, 124) = .08$ ,  $p > .78$ ;  $F_{\text{lay beliefs}}(1, 124) = .14$ ,  $p > .70$ ) and no interaction (positive affect:  $F(1, 124) = 2.35$ ,  $p > .12$ ; negative affect:  $F(1, 124) = .00$ ,  $p > .99$ ). While we could have stopped here, we nonetheless proceeded with a follow-up ANCOVA using both positive- and negative-affect scores as covariates and replicated our earlier results ( $F_{\text{exclusion}}(1, 122) = 5.54$ ,  $p = .02$ ;  $F_{\text{lay beliefs}}(1, 122) = 1.71$ ,  $p > .19$ ;  $F_{\text{interaction}}(1, 122) = 4.39$ ,  $p < .04$ ). The interactive effects of social exclusion and lay beliefs about money's instrumentality on financial risk-taking seem thus to go well above and beyond the mere effect of affect.

To examine the role of self-esteem in our findings, we averaged participants' self-esteem measures ( $\alpha = .77$ ) to compose an index score. Using this score as dependent variable, a two-way ANOVA revealed a main effect by exclusion ( $M_{\text{excl}} = 2.76$  vs.  $M_{\text{incl}} = 3.57$ ;  $F(1, 124) = 35.03$ ,  $p < .001$ ) but none by lay beliefs ( $F(1, 124) = .02$ ,  $p > .89$ ) and no interaction ( $F(1, 124) = .04$ ,  $p > .84$ ). The absence of interaction suggests that self-esteem cannot account for our results. Follow-up analyses confirmed this assessment. Regressing participants' investment preferences on self-esteem revealed no relationship between the two variables

Please use DOI when citing. Page numbers are not final.

( $\beta_{\text{self-esteem}} = .07$ ;  $t(126) = .81$ ;  $p = .42$ ). Moreover, a two-way ANCOVA using self-esteem as covariate did not reduce the significance of the exclusion by lay beliefs interaction on risk taking ( $F(1, 123) = 3.66$ ,  $p = .058$ ).

## Discussion

Using a mediation approach, study 3 showed that social exclusion leads consumers to want more money as a means to secure control in life, which in turn fosters riskier but potentially more lucrative financial decisions. Aiming to provide corroborating evidence with a moderation approach, study 4 tested whether “killing” the belief that money can in fact help secure such control would inhibit subsequent financial risk-taking.

As in studies 1–3, we again found in the baseline condition (i.e., when beliefs about the instrumentality of money were left untouched) that feeling excluded fostered financial risk-taking; participants chose to invest in riskier but potentially more profitable stocks. In contrast, when money’s instrumentality was purported to be a fallacy (i.e., when the benefits of securing additional monetary resources were made obsolete), risk taking was eliminated. Follow-up analyses confirmed that this interaction was mediated by participants’ beliefs about the efficacy of money in affording control over life’s course (i.e., mediated moderation).

Study 4 makes three contributions. First, by providing additional evidence for the hypothesized process through moderation and confirming it via mediation, study 4 solidifies and extends our earlier findings. Second, study 4 casts further doubt (both statistically and experimentally) on affect- and esteem-based accounts to explain our results. Indeed, neither self-esteem nor PANAS measures could explain the interactive nature of participants’ risk proclivities. Third and last, study 4 confirms that excluded participants’ risk perceptions of our stock portfolios did not differ from their included counterparts’, thereby casting doubt on any optimistic bias by excluded participants.

## STUDY 5: FIELD SURVEY

Study 5 was designed with three goals in mind. First, we sought to assess the generalizability of our findings by looking at additional forms of financial decisions. Second, for external validity purposes, we attempted to replicate our effect in the real world by using a more random and heterogeneous sample of consumers. Third, we sought to examine whether our findings could extend to chronic dispositions of social exclusion (i.e., beyond experimental manipulations).

### Participants, Design, and Procedure

Study 5 was part of a large-scale data-collection effort and administered by a team of trained research assistants (blind to our hypotheses) who were dispatched around shopping malls, subway stations, and parks in Hong Kong. In total, 278 men (47.4%) and 308 women (52.6%) took part

in study 5 ( $N = 586$ ). The age of respondents averaged 29, ranging from 18 to 60.

To introduce our survey, we informed respondents that our research intended to collect information about a variety of consumption behaviors. In addition to stressing the anonymity of their responses, we assured participants that we were only interested in people’s genuine opinions and that there were no “right” or “wrong” answers (Olson, Fazio, and Hermann 2007).

Similar to study 1, our first question asked participants to imagine a lottery where two options were available. Option A offered an 80% chance of winning \$200 and a 20% of winning nothing whereas option B offered a 20% chance of winning \$800 and an 80% chance of winning nothing. After reflecting on this information, participants indicated their relative preference between the two options on a 4-point scale (1 = I strongly prefer A; 2 = I prefer A; 3 = I prefer B; 4 = I strongly prefer B).

To get a sense of participants’ risk taking with their own finances, we next asked them to report (a) what proportion of disposable income they actually invested in low- versus high-risk schemes (e.g., savings account vs. stocks); (b) how often they bet on horse racing (1 = never, 2 = rarely, 3 = sometimes, 4 = often); and (c) how often they gambled in casinos (1 = never, 2 = rarely, 3 = sometimes, 4 = often). In the conclusion of the questionnaire, we asked participants their age, gender, and how often they felt socially excluded (1 = never, 2 = rarely, 3 = sometimes, 4 = often).

## Results

A series of regression analyses using age and gender as covariates replicated and extended our earlier findings. The more often respondents felt excluded, the more strongly they preferred risky option B in our lottery scenario ( $\beta = .086$ ;  $t(582) = 1.831$ ;  $p = .068$ ). Expectedly, chronic feelings of social exclusion also correlated with consumers’ risk taking in their own personal finances. Indeed, the more often respondents felt excluded, the less they invested in low-risk schemes such as savings accounts ( $\beta = -4.437$ ;  $t(582) = 2.604$ ;  $p < .01$ ). Conversely, the more often respondents felt excluded, the more often they bet on horse races ( $\beta = .224$ ;  $t(582) = 4.048$ ;  $p < .001$ ) and gambled in casinos ( $\beta = .176$ ;  $t(582) = 3.980$ ;  $p < .001$ ).

## Discussion

As a simple correlational field survey, study 5 does not claim to establish definitive cause-and-effect relationships. Taken together with our four lab experiments, however, study 5 makes two noteworthy contributions. First, by documenting that social exclusion affects financial decisions beyond lottery choices and investment plans, study 5 suggests that the realm of financial decisions influenced by interpersonal rejection might be far-reaching. Second, by replicating in the real world the same risk-taking propensities exhibited in laboratory settings (see studies 1–4), study 5 testifies to the actual consequences of social exclusion for

Please use DOI when citing. Page numbers are not final.

consumers' personal finances. In doing so, study 5 also confirms that the impact of social integration (or lack of thereof) goes beyond experimental manipulations and applies to consumers' chronic feelings of social acceptance and rejection.

## GENERAL DISCUSSION

Seeking social acceptance and maintaining close relationships constitute two of the most fundamental needs of human beings (Baumeister and Leary 1995). To satisfy these needs, consumers are willing to invest or sacrifice important resources such as time and money to ensure a sustained state of well-being (Duclos et al. 2012). What happens, however, when these efforts are unsuccessful? After all, feeling alone or rejected is a quite common experience. Romantic relationships dissolve, people are ignored at parties or in office conversations, and offers of friendship are frequently rebuffed. The purpose of this research, then, was to examine the impact of social exclusion on one important aspect of consumption behavior, financial decision-making. Building on recent research from marketing and psychology, we proposed that experiencing interpersonal rejection may foster riskier but potentially more lucrative financial decisions. The cause, we argued, is that, in absence of social support, forlorn consumers may need and seek significantly more money to secure what they want out of the social system.

To test our proposition, we invited participants in study 1 to play Cyberball, an online ball-tossing game intended to manipulate one's state of social inclusion/exclusion (Williams et al. 2000). Next, in a seemingly unrelated study, participants indicated their preference between two hypothetical gambles of equal expected utility but of asymmetrical odds. As predicted, socially excluded participants favored the riskier option more strongly than their included counterparts.

Adopting an essay-writing procedure to manipulate social exclusion (Mead et al. 2011; Pickett et al. 2004) and a personally consequential measure of financial risk-taking, study 2 found that socially excluded participants were twice as likely to gamble (vs. select a lesser but sure cash payment) as their counterparts in the baseline, inclusion, and negative-mood conditions who did not differ from one another. These results replicated and extended study 1's results by contrasting the specific impact of social exclusion on financial decision-making (relative to the inclusion and baseline conditions) and by showing affect as an improbable explanation for our effect.

With negative mood in general and sadness in particular as improbable alternative explanations for our findings (see study 2), our purpose in study 3 was to shed light on what may indeed mediate the relationship between social exclusion and financial risk-taking. To this end, we once again induced participants in a state of social exclusion (vs. inclusion) via an essay-writing procedure before soliciting their preference between two new lotteries of equal value but asymmetrical risk. Replicating the results of studies 1 and 2, we found that feeling rejected fostered again riskier decisions. More importantly, we found that this effect was

mediated by the perceived instrumentality of money. In absence of social support, excluded participants started to acutely seek and value money as a means to secure what they want out of the social system. Of note, additional mediation analyses revealed that, while interpersonal rejection did indeed threaten consumers' self-worth, the latter did not in turn trigger risk taking. Hence, self-esteem also appears to be an improbable alternative explanation of our findings.

Complementing this effort with moderation evidence, study 4 assessed when and why consumers may or may not make risky financial decisions. To this end, we manipulated social exclusion before manipulating the belief that money can in fact help secure control over life's course. When the benefits of additional monetary resources were made obsolete, excluded participants no longer sought riskier but potentially more rewarding investment portfolios. Furthermore, this interaction was mediated (i.e., mediated moderation) by money's perceived instrumentality in securing control in life. Hence, using a multifactorial design, study 4 provided both moderation- and mediation-based evidence for the hypothesized process while once again suggesting that affect and self-esteem are improbable alternative explanations.

Finally, seeking to extend our lab findings, we took our investigation to the streets in a field survey. As exhibited by riskier investment portfolios and more frequent betting on horse racing and casino gambling, consumers who reported feeling chronically excluded manifested the same risk-taking propensities in their own personal finances as participants did in our first four experiments. Hence, across five studies (i.e., four lab experiments and one field survey) using a variety of manipulations, dependent measures, and population samples, we documented a consistent pattern of greater financial risk-taking as a result of social exclusion.

## Theoretical, Managerial, and Societal Implications

Theoretically, three main contributions emerge from the present work. First, our findings extend the social exclusion and financial decisions literatures. Prior research shows that issue capability and gender (He, Inman, and Mittal 2008) and consumers' self-regulatory goals (Zhou and Pham 2004) affect consumers' financial decisions. By showing that interpersonal rejection leads consumers to pursue riskier financial opportunities, our research uncovers a shift in consumers' idiosyncratic risk-to-benefit ratio as a result of social exclusion. The articulation of this new finding bridges the gap between the two literatures and extends our understanding of how consumers trade risk for financial reward.

The second contribution of the present work stems from extending Zhou et al.'s (2009) work on the symbolic power of money. By highlighting the motivation behind (i.e., the why of) financial risk-taking, we showed that social exclusion heightens the instrumentality of money. In absence of social support, forlorn consumers begin to acutely seek and value money as an alternative means to secure what they want out of the social system. This quest, in turn, engages

Please use DOI when citing. Page numbers are not final.

them in riskier but potentially more profitable financial decision-making.

The third theoretical contribution comes from clarifying the process underlying the aforementioned effect. Our findings suggest that neither negative mood nor self-esteem seems to provide viable alternative explanations for our effect. This is not to say, of course, that these factors were absent from our research. In fact, we showed in studies 2, 3, and 4 that social exclusion can indeed impair affect and self-esteem. What we established, however, is that these factors did not by themselves engender riskier financial decisions. This goes to show the specific and unique properties of social exclusion for financial risk-taking.

Self-defeating behavior is defined as "a deliberate action with clear negative effects on the self or on the self's projects" (Baumeister and Scher 1988). With respect to our studies, one might wonder whether the financial risks taken as a result of social exclusion were in fact nothing more than the manifestation of self-defeating behavior. A closer look at our procedures, however, should alleviate such a concern. Indeed, in all our studies, the risky financial products always featured an expected value equal or superior to that of their safer alternatives. For instance, an investment plan offering a 50% chance of returning \$50K and a 50% chance of losing \$25K is neither superior nor inferior to one offering a 90% chance of returning \$18K and a 10% chance of losing \$37K. Both entail the same expected utility (i.e., \$12.5K), which leaves consumers free to select whichever plan better balances their idiosyncratic risk-to-benefit ratio. As such, choosing a riskier course of action in our studies can never be construed as self-defeating behavior.

By illustrating the significant impact that common experiences such as feeling rejected or accepted can have on people's daily lives, our findings also contribute new insights for policy makers, managers, and consumers. Indeed, few would deny the importance of financial (mis)management for well-being. And given the realm of consumption behaviors necessitating some form of balancing between risk and financial reward (e.g., saving to fund college education or retirement, deciding how to pay for health care and insurance, investing in the stock market, etc.), understanding how consumers trade risk for reward is important both managerially and societally. Of course, many environmental and personal factors interact to shape one's financial decisions. But by (a) identifying the consequences of one such factor, social exclusion, for financial risk-taking, as well as (b) shedding light on the mechanism and motivation behind it, our research can help economic agents make more informed decisions. For instance, consumers may choose to delay important financial decisions (e.g., choosing a mortgage, a car loan, or a retirement scheme) following a breakup or a fallout with friends. Government agencies and consumer advocates might want to investigate (and possibly regulate) some of the sales practices in the financial-services industry (e.g., lenders, brokers, etc.). Given the consequences of social exclusion for risk taking, some marketers with questionable ethics may be tempted to isolate (either physically

or psychologically) prospective clients during the negotiation process since doing so may result in larger commissions. Others may opt to target demographic groups likely to suffer from social exclusion (e.g., the elderly, divorcees, widow(er)s, etc.). As such, consumers would benefit from being aware of the tricks available to unscrupulous financial-services providers.

### Limitations and Future Research

Our research adopted the established view and working definition of social exclusion (i.e., being alone, isolated, or ostracized, sometimes with explicit declarations of dislike, but other times not; Baumeister et al. 2005; Williams 2007). It was thus outside the scope of this article to examine possible nuances between exclusion and loneliness. On the face of it, however, the former certainly appears more of an active and dynamic experience whereas the latter seems more of a passive state. Speaking to this distinction, Lee and Shrum (2012) find that, whereas being implicitly ignored may increase conspicuous consumption, being explicitly rejected can instead increase prosocial behavior. Future research might thus investigate whether, and if so how, social exclusion and loneliness differ in their consequences for financial risk-taking.

In the same vein, we reckon that the impact of social exclusion might also vary as a function of how often one experiences the phenomenon and/or character traits. One's need to belong, for instance, or one's attachment style might very well moderate either upward or downward one's reaction to interpersonal rejection. Hence, investigating the interaction of social exclusion with personality dimensions is needed for a more integrated theory of how social exclusion influences financial decisions.

Although the thrust of this research was to examine financial risk-taking as a result of social exclusion, we also sought to ascertain whether social inclusion might, in contrast, foster risk aversion. To this effect, we found that socially included participants exhibited risk aversion similar to counterparts in a baseline condition (study 2). Under special circumstances, however, it is also possible for social inclusion to foster risk taking. Studying lending behavior on the online community prosper.com, a peer-to-peer platform connecting people who wish to invest money with people needing to borrow, Zhu et al. (2012) found that lenders may indeed be willing to bear more risk (i.e., lend money to borrowers with higher defaulting risk) if two conditions are met. First, lenders must perceive that they have strong ties with fellow Prosper members; second, they must believe that fellow community members will come to their rescue should difficulties arise. Short of this, Prosper members' risk taking vanishes to resemble that of baseline (nonmember) participants, thereby mirroring our own findings.

Of course, financial decision-making is not the only consumption domain where risk plays a prominent role. As noted earlier, prior research found that consumers' willingness to try cocaine, an illegal and potentially lethal drug, may increase if doing so boosted their chance of com-

Please use DOI when citing. Page numbers are not final.

mencing social connections (Mead et al. 2011). Other behaviors of interest for researchers, policy makers, and citizens at large might include driving. Does social exclusion lead to more risk taking on the road? Or, conversely, can one's need to belong and affiliate indirectly lead to reckless driving? Speaking to this possibility, statistics from the US Department of Transportation suggest that 63% of drivers under 30 talk and/or text while behind the wheel, thereby multiplying by three their likelihood of crashing. In total, nearly 1,000 deaths a year in the United States are linked to the use of handheld devices while driving. Not surprisingly then, several European countries have already banned the use of cell phones (which one might construe as an attempt to remain connected to others) and similar legislation is under way in many American states.

We conclude by hoping that this work will help spur interest in a relatively new construct in consumer research. Given the pervasiveness of this phenomenon in society and its consequences for a wide array of human behaviors, the study of social exclusion certainly holds promise for a variety of social scientists in years to come.

## REFERENCES

- Baron, Reuben M., and David A. Kenny (1986), "The Moderator-Mediator Variable Distinction in Social Psychological Research: Conceptual, Strategic, and Statistical Considerations," *Journal of Personality and Social Psychology*, 51 (6), 1173–82.
- Baumeister, Roy F., C. Nathan Dewall, Natalie J. Ciarocco, and Jean M. Twenge (2005), "Social Exclusion Impairs Self-Regulation," *Journal of Personality and Social Psychology*, 88 (4), 589–604.
- Baumeister, Roy F., and Mark R. Leary (1995), "The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation," *Psychological Bulletin*, 117 (3), 497–529.
- Baumeister, Roy F., and Steven J. Scher (1988), "Self-Defeating Behavior Patterns among Normal Individuals: Review and Analysis of Common Self-Destructive Tendencies," *Psychological Bulletin*, 104 (1), 3–22.
- Carter-Sowell, Adrienne, Zhansheng Chen, and Kipling D. Williams (2008), "Ostracism Increases Social Susceptibility," *Social Influence*, 3 (3), 143–53.
- Chen, Zhansheng, Kipling D. Williams, Julie Fitness, and Nicola C. Newton (2008), "When Hurt Will Not Heal: Exploring the Capacity to Relieve Social and Physical Pain," *Psychological Science*, 19 (8), 789–95.
- Duclos, Rod, James R. Bettman, Paul N. Bloom, and Gal Zauberman (2012), "Charitable Giving: How Ego-Threats Impact Donations of Time and Money," Working Paper, Hong Kong University of Science and Technology.
- Furnham, Adrian (1984), "Many Sides of the Coin: The Psychology of Money Usage," *Personality and Individual Differences*, 5 (5), 501–9.
- He, Xin, J. Jeffrey Inman, and Vikas Mittal (2008), "Gender Jeopardy in Financial Risk Taking," *Journal of Marketing Research*, 45 (August), 414–24.
- Isen, Alice M., and Robert Patrick (1983), "The Effect of Positive Feelings on Risk Taking: When the Chips Are Down," *Organizational Behavior and Human Decision Processes*, 31 (2), 194–202.
- Johnson, Wendy, and Robert F. Krueger (2006), "How Money Buys Happiness: Genetic and Environmental Processes Linking Finances and Life Satisfaction," *Journal of Personality and Social Psychology*, 90 (4), 680–91.
- Lachman, Margie E., and Suzanne L. Weaver (1998), "The Sense of Control as a Moderator of Social Class Differences in Health and Well-Being," *Journal of Personality and Social Psychology*, 74 (March), 763–73.
- Leary, Mark R., Ellen S. Tambor, Sonja K. Terdal, and Deborah L. Downs (1995), "Self-Esteem as an Interpersonal Monitor: The Sociometer Hypothesis," *Journal of Personality and Social Psychology*, 68 (3), 518–30.
- Lee, Jaehoon, and L. J. Shrum (2012), "Conspicuous Consumption versus Charitable Behavior in Response to Social Exclusion: A Differential Needs Explanation," *Journal of Consumer Research*, 39 (October), 530–44.
- Leith, Karen Pezza, and Roy F. Baumeister (1996), "Why Do Bad Moods Increase Self-Defeating Behavior? Emotion, Risk Taking, and Self-Regulation," *Journal of Personality and Social Psychology*, 71 (6), 1250–67.
- Mead, Nicole L., Roy F. Baumeister, Tyle F. Stillman, Catherine D. Rawn, and Kathleen D. Vohs (2011), "Social Exclusion Causes People to Spend and Consume Strategically in the Service of Affiliation," *Journal of Consumer Research*, 37 (5), 902–19.
- Mittal, Vikas, and William T. Ross (1998), "The Impact of Positive and Negative Affect and Issue Framing on Issue Interpretation and Risk Taking," *Organizational Behavior and Human Decision Processes*, 76 (3), 298–324.
- Muller, Dominique, Charles M. Judd, and Vincent Y. Yzerbyt (2005), "When Moderation Is Mediated and Mediation Is Moderated," *Journal of Personality and Social Psychology*, 89 (December), 852–63.
- Olson, Michael A., Russell H. Fazio, and Anthony D. Hermann (2007), "Reporting Tendencies Underlie Discrepancies between Implicit and Explicit Measures of Self-Esteem," *Psychological Science*, 18 (4), 287–91.
- Pickett, Cynthia L., Wendi L. Gardner, and Megan Knowles (2004), "Getting a Cue: The Need to Belong and Enhanced Sensitivity to Social Cues," *Personality and Social Psychology Bulletin*, 30 (9), 1095–1107.
- Preacher, Kristopher J., Derek D. Rucker, and Andrew F. Hayes (2007), "Addressing Moderated Mediation Hypotheses: Theory, Methods, and Prescriptions," *Multivariate Behavioral Research*, 42 (1), 185–227.
- Price, Richard H., Jin Nam Choi, and Amiram D. Vinokur (2002), "Links in the Chain of Adversity Following Job Loss: How Financial Strain and Loss of Personal Control Lead to Depression, Impaired Functioning and Poor Health," *Journal of Occupational Health Psychology*, 7 (4), 302–12.
- Putnam, Robert D. (1995), "Bowling Alone: America's Declining Social Capital," *Journal of Democracy*, 6 (1), 65–78.
- (2000), *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.
- Raghunathan, Rajagopal, and Michel Tuan Pham (1999), "All Negative Moods Are Not Equal: Motivational Influences of Anxiety and Sadness on Decision Making," *Organizational Behavior and Human Decision Processes*, 71 (1), 56–77.
- Shrout, Patrick E., and Niall Bolger (2002), "Mediation in Experimental and Nonexperimental Studies: New Procedures

Please use DOI when citing. Page numbers are not final.

- and Recommendations," *Psychological Methods*, 7 (4), 422–45.
- Tang, Thomas L. P. (1995), "The Development of a Short Money Ethic Scale: Attitudes toward Money and Pay Satisfaction Revisited," *Personality and Individual Differences*, 19 (6), 809–16.
- Twenge, Jean M., Kathleen R. Catanese, and Roy F. Baumeister (2002), "Social Exclusion Causes Self-Defeating Behavior," *Journal of Personality and Social Psychology*, 83 (3), 606–15.
- US Bureau of the Census (1998), *Statistical Abstract of the United States*, Washington, DC: US Government Printing Office.
- Vohs, Kathleen D., Nicole L. Mead, and Miranda R. Goode (2006), "The Psychological Consequences of Money," *Science*, 314 (5802), 1154–56.
- (2008), "Merely Activating the Concept of Money Changes Personal and Interpersonal Behavior," *Current Directions in Psychological Science*, 17 (3), 208–12.
- Warburton, Wayne A., Kipling D. Williams, and David R. Cairns (2006), "When Ostracism Leads to Aggression: The Moderating Effects of Control Deprivation," *Journal of Experimental Social Psychology*, 42 (March), 213–20.
- Watson, David, Lee Anna Clark, and Auke Tellegen (1988), "Development and Validation of Brief Measures of Positive and Negative Affect: The PANAS Scales," *Journal of Personality and Social Psychology*, 54 (6), 1063–70.
- Williams, Kipling D. (2007), "Ostracism," *Annual Review of Psychology*, 58, 425–52.
- Williams, Kipling D., Christopher K. T. Cheung, and Wilma Choi (2000), "Cyberostracism: Effects of Being Ignored over the Internet," *Journal of Personality and Social Psychology*, 79 (5), 748–62.
- Williams, Kipling D., and Blair Jarvis (2006), "Cyberball: A Program for Use in Research on Interpersonal Ostracism and Acceptance," *Behavior Research Methods*, 38 (1), 174–80.
- Yamauchi, Kent T., and Donald I. Templer (1982), "The Development of a Money Attitude Scale," *Journal of Personality Assessment*, 46 (5), 522–28.
- Zhou, Rongrong, and Michel Tuan Pham (2004), "Promotion and Prevention across Mental Accounts: When Financial Products Dictate Consumers' Investment Goals," *Journal of Consumer Research*, 31 (June), 125–35.
- Zhou, Xinyue, Kathleen D. Vohs, and Roy F. Baumeister (2009), "The Symbolic Power of Money: Reminders of Money Alter Social Distress and Physical Pain," *Psychological Science*, 20 (6), 700–706.
- Zhu, Rui, Utpal M. Dholakia, Xinlei Chen, and René Algesheimer (2012), "Does Online Community Participation Foster Risky Financial Behavior?" *Journal of Marketing Research*, 49 (3), 394–407.

Please use DOI when citing. Page numbers are not final.