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# Your Money or Your Self-Esteem: Threatened Egotism Promotes Costly Entrapment in Losing Endeavors

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*The present research explored egotism—maintaining favorable views of the self—as a motivation underlying entrapment in losing endeavors. Four studies suggested that threatened self-esteem would cause decision makers to invest and lose more money in a previously chosen course of action. Ego-threatened participants consistently lost more money than nonthreatened participants across diverse entrapping situations regardless of whether the outcome was ostensibly determined by luck (Experiments 1 and 4), ability (Experiment 2), or interpersonal competition (Experiment 3). Thus, pursuing favorable views of the self could be costly to decision makers' financial well-being and may produce self-defeating behaviors.*

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**Keywords:** *ego threat; self-esteem; egotism; entrapment; decision making*

If at first you don't succeed, try, try again. Then quit. No use being a damn fool about it.

—W. C. Fields

Do people often end up squandering significant amounts of money and other valuable resources because concerns over self-esteem cloud their judgment? People tend to become entrapped in previously chosen situations and throw away good money after bad decisions. As a result, ultimate losses are heavily increased. This has been demonstrated as a reliable and robust phenomenon (Bazerman, Giuliano, & Appelman, 1984; Brockner, 1992; Brockner & Rubin, 1985; Garland, 1990; Staw, 1976, 1997; Teger, 1980). Laboratory findings and field studies simply confirm what has been noted as a recurrent tragedy in everyday life: People get locked into unpromising career choices (Drummond & Chell, 2001), supervisors become overcommitted to

those employees about whom they had expressed favorable opinion in hiring decisions (Bazerman, Beekun, & Schoorman, 1982; Schoorman, 1988), coaches grant more playing time to higher drafted players in the NBA and keep them longer than the players' performance would warrant (Staw & Hoang, 1995), senior executives in banks escalate their institution's commitment to problem loans (Staw, Barsade, & Koput, 1997), and entrepreneurs and venture capitalists become entrapped in unprofitable projects (Antonides, 1995). As an example, the Long Island Lighting Company started with a budget of \$70 million in 1966 to construct a nuclear power facility. This relatively small initial commitment snowballed by 1989 into expenditures of \$5.5 billion—for a plant that never became operational (Ross & Staw, 1993).

The present research proposes and tests the hypothesis that egotism—the motivation to maintain and enhance favorable views of self—may help explain people's commitments to losing courses of action. The idea that egotism might impact entrapment in failing projects is inspired by the self-justification theory (Brockner, 1992; Brockner & Rubin, 1985; Staw, 1976, 1979, 1981, 1997). The self-justification theory, an extension of the dissonance theory (Festinger, 1957), argues that self-serving

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motives drive people not only to distort the negative consequences to rationalize their previous behaviors but also actively to commit additional resources to justify their formerly chosen but failing actions. Staw (1981) once suggested, although without empirical evidence, that self-esteem might influence justification behaviors. Brockner et al. (1986) also pointed out that participants remained committed to an ineffective course of action because negative performance feedback on a project had unfavorable implications for self-identity, especially when participants were told that the performance on the task was diagnostic of their general intelligence and competence in social domains. The current research builds on these pioneering works and explores the motivation to maintain self-esteem as an important motivation that underlies entrapment. The core idea is that people want to justify their former decisions because admitting to an unwise decision is threatening to the self. Their efforts to justify their initial decision by sticking with it (despite accumulating losses) contribute to one important pattern of self-defeating behavior.

The view that egotism may contribute to costly entrapment in losing endeavors fits several previous findings. First, research participants responded to identical investment dilemmas with higher second investments (thus being more entrapped) when they themselves held responsibility for the first investment than when someone else took responsibility (Schoorman & Holahan, 1996; Staw, 1976). Clearly, one's own egotism is more at stake when one is responsible for the initial decision than when someone else is. Conversely, diffusing responsibility by telling participants that they were just one of the group members who were responsible for initiating a failing project, as opposed to personally bearing all the responsibility, reduced the escalation tendency (Whyte, 1991). Second, participants who spent time and energy to persuade other people in their group to agree with their original choice invested more money in the failing course of action than participants who did not make the extra effort (Kameda & Sugimori, 1993). When an authority figure had resisted the participant's initial decision, the participant was more likely to feel committed and to become entrapped (Fox & Staw, 1979). Apparently, when decision makers persuade others to believe in their choice of the project, their egotism is tied to its success. Third, recent field studies have shown that turnover of senior bank managers leads to de-escalation of commitment to problem loans. New, incoming managers are more willing to terminate problem loans because the new managers do not feel responsible for having made the initial (bad) decision to approve the loans in the first place, and therefore it is not ego threatening to admit that

that initial decision was unwise (Staw et al., 1997). Fourth, there is evidence that concerns over reputation contribute to entrapment and escalation among managers. Managers worried that giving up a project might make other people think negatively of their ability, resulting in less promotion opportunities (Kanodia, Bushman, & Dickhaut, 1989). All of these findings indicate that individuals commit more to a losing course of action when their ego involvement is higher in the course of action.

The present research took a very different approach to examining the possible effects of egotism on entrapment. It explored how the current state of decision makers' self-esteem, specifically threatened egotism, impacted their subsequent behaviors in entrapping situations. We hypothesized that if people become entrapped in losing situations partly to defend their favorable views of the self, then threatened egotism should exaggerate the costly persistence (insofar as it increases the need for defending one's self-esteem). Four experiments were conducted to test such a hypothesis. In each study, some participants were confronted with an explicit threat to their favorable views of self while the others did not receive such an ego threat. All participants then made investment decisions in a potential entrapping situation. Across the four experiments, two methods were used to manipulate ego threat: In Experiments 1 and 2, ego threat was induced by proposing on participants a negative personality, specifically choking under pressure; in Experiments 3 and 4, ego threat was induced by failure performance feedback on a creativity test (Baumeister, Heatherton, & Tice, 1993). A variety of entrapping situations was used in the four experiments: The payoff of the investment was ostensibly determined either by luck (Experiments 1 and 4), an ability to solve a puzzle (Experiment 2), or outcomes of interpersonal competition (Experiment 3).

The present research also included measures of trait self-esteem because of its conceptual relevance regarding responses to ego threat. Previous findings have been inconsistent as to how trait self-esteem affects responses to ego threat. On one hand, some research suggests that people with high self-esteem have more available resources to maintain their positive self-image (Josephs, Larrick, Steele, & Nisbett, 1992; Steele, 1988). Therefore, people with high self-esteem may not be averse to admitting a decision mistake, resulting in early withdrawal from a losing situation. Furthermore, high self-esteem individuals may be less influenced by situational ego threat. On the other hand, some research indicates that people with high self-esteem are more likely to perceive ego threat and behave aggressively (Baumeister, Smart, & Boden, 1996). By this reasoning, high self-esteem people may be especially sensitive to

the loss of self-esteem that would accompany admitting a mistake and therefore might persist even longer in losing endeavors. Hence any relationship between self-esteem and entrapment was plausible.

#### EXPERIMENT 1

Experiment 1 used a chance-based procedure called the counter game to measure entrapment (Brockner & Rubin, 1985). Participants were told that as long as they continued to play, they might have a chance to win a jackpot, but they must periodically put in more money to continue playing. This situation thus resembles genuine gambling (Gibson & Sanbonmatsu, 2004). The counter game also resembles some nongambling but externally determined outcomes, such as whether to keep investing in a stock or whether to continue waiting for a bus when it is already quite late and might never come.

Participants in the ego threat condition were told that they might have a negative personality trait of choking under pressure (Baumeister et al., 1993). Participants in the control condition were not exposed to the threatening information. The prediction was that participants in the ego threat condition would invest more money in the counter game than participants in the no threat control condition.

#### *Method*

##### *PARTICIPANTS*

In Experiment 1, 44 undergraduate students participated to fulfill a course requirement. The data of 2 participants were excluded from the analyses because they did not believe that there was a jackpot. The final sample consisted of 42 participants (16 women).

##### *PROCEDURE*

Participants were told that the experiment was about personality and decision making. Participants first read over and signed the consent form, then completed a demographic survey that was followed by Fleming and Courtney's (1984) version of the Janis and Field (1959) self-esteem scale. Upon participants' arrival, \$5 of quarters were on the table. The experimenter introduced the counter game to the participants as follows:

You get \$5.00 as deposit for the counter game. It provides you the opportunity to win an additional \$10.00 jackpot. You are free to do with it as you wish. Your final payment depends on the outcome of the game.

Participants were randomly assigned either to the ego threat condition or to the control condition. In the

ego threat condition, participants were also told, "If you're the kind of person who usually chokes under pressure or if you don't think that you have what it takes to win the money, then you might want to play it safe. But it's up to you." In the control condition, the participants did not receive any mention of choking under pressure throughout this experiment. The counter game was then administered through a computer program. The instructions were presented on the computer screen. They said that the counter would run from 0 to 500; the counter would stop and ask participants whether to continue the game or not at each multiple of 25; to continue to play, the participant had to invest an additional 25 cents each time (for another 25 trials), and participants would win a jackpot of \$10 if a beep sounded when the counter stopped. Participants were not told the exact probability of winning the jackpot.

Participants started the game after the experimenter double-checked that participants understood the game instructions. In the ego threat condition, the experimenter mentioned the threatening information of choking under pressure again. When participants pressed on the start button, a sample beep would sound and then the game began. Participants were left alone when they played the game. The experimenter returned after participants rang a bell and signaled the experimenter that they had decided to withdraw or the counter had run up to 500. Then participants were checked for suspicion, paid, debriefed, and dismissed.

#### *Results*

Scoring of self-esteem was based on the three main subscales (general self-regard, competence, and popularity; e.g., Baumeister et al., 1993) from the Fleming and Courtney (1984) scale. The self-esteem scores ranged from 50 to 116 ( $M = 88.52$ ,  $SD = 15.84$ ), with 91 as the median. Gender did not have any main effect or interaction with either trait self-esteem or the ego threat manipulation. Therefore, it was not retained as an independent variable in the main analyses.

A hierarchical regression model was used to examine the effect of ego threat and trait self-esteem on entrapment. The continuous variables used in the regression were centered. The money participants lost served as the dependent measure—the indicator of entrapment. The two predictors, ego threat and trait self-esteem, were entered as main effects in Step 1 of the regression. The interaction of ego threat and trait self-esteem was entered in Step 2.

The Step 1 analyses revealed a significant main effect for ego threat,  $\beta = .27$ ,  $t(39) = 1.99$ ,  $p = .05$ . As predicted, ego-threatened participants lost more money than those in the control condition (see Table 1). The

**TABLE 1: Means and Standard Deviations of Money Lost (Dollars) in Experiments 1, 2, 3, and 4**

<i>Experiment</i>	<i>Esteem-Threatened Group</i>		<i>Control Group</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1: Counter game	3.67	1.59*	2.43	1.94
2: A jigsaw puzzle	2.12	0.91*	1.47	0.77
3: Dollar auction	3.71	1.58**	2.46	1.89
4: Counter game	4.04	1.34**	2.40	1.94

\* $p < .05$ . \*\* $p < .01$ .

effect size  $d$  was .70 (Cohen, 1977). Trait self-esteem was also related to money lost,  $\beta = .43$ ,  $t(39) = 3.18$ ,  $p = .003$ . The higher the trait self-esteem, the more money they lost.

The Step 2 analyses showed that there was no interaction between ego threat and trait self-esteem,  $\beta = -.12$ ,  $t < -1$ ,  $ns$ .

### Discussion

The results of Experiment 1 provided initial evidence that threatened egotism can contribute to entrapment in a losing endeavor, thereby resulting in greater financial losses. When the experimenter suggested that the participant might be the sort of person who was prone to choke under pressure and therefore should play it safe, the participant invested and lost a larger amount of money than when no such ego threat was administered.

Participants with high self-esteem became more deeply entrapped than those with low self-esteem, regardless of whether they received the ego threat. Conceivably this is because people with high self-esteem regard themselves as luckier than people with low self-esteem (e.g., Taylor & Brown, 1988) so that their subjective chances of winning would seem greater. Another possibility is that people with high self-esteem are more vulnerable to ego threats and more prone to react assertively (e.g., Baumeister et al., 1993). Then again, the effect of self-esteem was not confined to the ego threat condition. The fact that trait self-esteem did not moderate the effect of ego threat is consistent with the general pattern that both low and high self-esteem people are motivated to defend their self-esteem, especially following ego threats (Blaine & Crocker, 1993). Past work has not found trait self-esteem to predict differential entrapment (Brockner & Rubin, 1985), and this initial finding should be regarded with caution.

### EXPERIMENT 2

Experiment 2 sought to replicate the results of Experiment 1 with several important procedural changes.

First, a different entrapment task (a jigsaw puzzle) was used, and it was presented as involving skill more than luck, so there was more reason for participants to anticipate that they could succeed by dint of their own efforts alone. In fact, the puzzle was solvable, although the time limit made it unlikely that many participants would achieve success, and none did. Second, there was no measure of mood or emotional state in the first study. Previous studies have shown that bad moods promoted risk-taking and self-defeating behaviors (Leith & Baumeister, 1996), so it was conceivable that the entrapment was mediated by some emotional reaction to the ego threat. Experiment 2 therefore added a mood measure (the Positive Affect and Negative Affect Scale, i.e., PANAS; Watson, Clark, & Tellegen, 1988). The main prediction for Experiment 2 was that the effects of Experiment 1 would be replicated such that challenging self-esteem would elicit greater investment in the losing endeavor.

### Method

#### PARTICIPANTS

In the second experiment, 39 undergraduate students (19 men) participated to fulfill part of a course requirement.

#### PROCEDURE

Participants were run individually. They were escorted by the experimenter to a laboratory room upon arriving. Participants were told that this experiment was about personality and jigsaw puzzle solving. They first signed the consent form, were given \$4 as payment for their participation, and completed a demographic survey and Fleming and Courtney's (1984) version of the Janis and Field (1959) scale.

Participants were randomly assigned either to the ego threat condition or to the no threat control condition. In the ego threat condition, the experimenter told participants,

The \$4 on the table is yours. You may keep it or you may use it to buy puzzle pieces and a chance to win an additional \$10 if you solve the puzzle. If you are the kind of person who usually chokes under pressure, or if you don't think that you have what it takes to win the money, then you might want to play it safe and just go for the \$4. But it is up to you.

In the control condition, choking under pressure was not mentioned, and the participants heard only the first two sentences from the aforementioned instructions.

Participants were given printed instructions about the jigsaw puzzle task and then were left alone to work on the puzzle. The instructions said that the ability to

solve a complicated jigsaw puzzle under time constraints reflected a person's ability to perform well under trying conditions. Participants were given 19 free puzzle pieces to start with. They needed to buy more pieces at the rate of 5 cents a piece to solve the puzzle. If they successfully solved the puzzle within 15 minutes, they would win an additional \$10 prize and would not be charged for the additional puzzle pieces they had purchased. However, if they failed to solve the puzzle within that time limit, they would have to pay for the pieces they purchased out of their \$4 stake (and of course would not win any additional prize). Additional pieces could be purchased up to 10 at a time, with no restriction on the total number purchased. Participants were given the picture of the puzzle but were not told how many additional pieces they needed to solve the puzzle. The puzzle was selected on the basis of being very difficult to solve in 15 minutes, although it could be done. To participants in the ego threat condition, just before the game started, the experimenter mentioned again the threatening information of choking under pressure.

Participants filled out the current version of the PANAS (Watson et al., 1988) before they began working on the puzzle. After participants decided to stop or after 15 minutes elapsed, participants rang a bell to signal the experimenter. Participants then completed a follow-up survey, were checked for suspicion, paid, debriefed, and dismissed.

## Results

### MANIPULATION CHECK VALIDATION STUDY

It seemed desirable to ascertain that participants perceived the ego threat manipulation as threatening to their esteem, however it was not possible to ask participants directly whether they felt threatened as such a question might be inappropriately reactive and might bias their subsequent responses to the puzzle. To address this issue, a separate study was conducted in which 46 undergraduate students (20 women) rated the instructions used in Experiments 1 and 2. Participants were randomly assigned into two conditions. Half of the participants received the same instructions as participants in the ego threat condition in Experiments 1 and 2, and the other half read the same instruction as participants in the control condition. All participants then rated their feelings about the instructions on an 11-point scale, ranging from -5 (*threatening to my self-esteem*) to 0 (*neutral*) to 5 (*boost to my self-esteem*). The results indicated that the ego-threatening instructions were in fact threatening. Participants who read the instructions intimating that people who were prone to choke under

pressure should play it safe reported that the instructions were more threatening to their self-esteem ( $M = -.67$ ,  $SD = 1.93$ ) than participants who read the instructions in the control condition ( $M = .56$ ,  $SD = 1.19$ ),  $F(1, 44) = 6.94$ ,  $p = .012$ .

### ENTRAPMENT

No participants solved the puzzle and won the additional \$10. In addition, 36 out of 39 participants (92%) kept working on the puzzle until time ran out. There was no effect of ego threat or any other variable on the amount of time people spent working,  $t_s < 1$ , *ns*.

Gender had neither a main effect nor interactions with the ego threat manipulation or trait self-esteem. Therefore, we conducted a hierarchical regression analysis with ego threat and trait self-esteem as predictors in Step 1 and with Ego Threat  $\times$  Trait Self-Esteem interaction as the predictor in Step 2. Participants' total self-esteem scores ranged from 51 to 104 ( $M = 83.52$ ,  $SD = 14.79$ ), with 85.0 as median. The continuous variables used in the regression were centered. The amount of money the participant spent on purchasing pieces, the same as money lost, was the main dependent measure of entrapment.

As predicted, there was a main effect for ego threat,  $\beta = .40$ ,  $t(36) = 2.64$ ,  $p < .02$ . Participants who received the ego threat bought more pieces and therefore lost more money than other participants (please refer to Table 1). The effect size was  $d = .77$ . There was a weak trend toward a main effect for self-esteem such that people with low self-esteem bought more pieces than those with high self-esteem, but this was not significant,  $\beta = -.22$ ,  $t(36) = -1.46$ ,  $p = .15$ . The interaction of ego threat and self-esteem level also fell short of significance,  $\beta = 1.34$ ,  $t(36) = 1.29$ ,  $p = .20$ .

### MOOD AND MEDIATION

Ego threat did not have an effect on negative mood,  $\beta = .20$ ,  $t(36) = 1.35$ ,  $p = .19$ , or on positive moods,  $t < 1$ , *ns*. We also conducted mediation analyses (Baron & Kenny, 1986) to investigate whether the mood patterns might have contributed to the entrapment results. Both positive moods and negative moods were entered as predictors in the regression analysis. Neither negative moods nor positive moods had any effect on entrapment,  $t_s < 1$ , *ns*. The main effect of ego threat on entrapment was still significant,  $\beta = .41$ ,  $t(36) = 2.53$ ,  $p < .02$ . Thus, the results indicated that mood was not a mediator.

### Discussion

The results of Experiment 2 replicated and extended the findings of Experiment 1. An ego threat

in the form of a challenging remark suggested that participants might have an undesirable personality trait that predisposed them to choke under pressure, and it induced participants to invest larger amounts of money in a losing endeavor.

Experiment 2 had features that helped dispel possible boundary conditions associated with the findings of Experiment 1. In Experiment 1, the task was unsolvable, whereas in Experiment 2 it was solvable. In Experiment 1, the task appeared to be a matter of luck, whereas Experiment 2 presented a task that seemingly depended on skill, effort, and ability. Despite these changes in situational structure, threatened egotism produced the same increase in entrapment.

One difference between the results of the first two studies was that the main effect of self-esteem found in Experiment 1 failed to replicate itself in Experiment 2. This may occur because the effect was specific to a luck task. People with high self-esteem may regard themselves as luckier but no more capable than people with low self-esteem. It is also possible that the effect of self-esteem in Experiment 1 was a spurious, chance-based finding.

In Experiments 1 and 2, ego threat was manipulated by suggesting that participants might have an undesirable personality trait associated with choking under pressure and therefore they might want to play the game safely. The ego threat manipulation was thus directly related to the upcoming decision. The impact of that manipulation could however be subject to an alternative explanation based on reactance theory (Brehm, 1966). Telling participants that they ought to play it safe might have threatened the participants' freedom to take risks, causing them to take more risks and therefore lose more money so as to reassert their freedom. One could also propose an alternative explanation based on demand characteristics. Ego-threatened participants may have perceived the experimenter's remark (linking playing it safe to a weakness of character flaw) as a demand to adopt a risky strategy despite the fact that the experimenter explicitly advised them to play it safe.

Experiments 3 and 4 went a step further to address the alternative explanations produced by the manipulation used in Experiments 1 and 2. In Experiments 3 and 4, ego threat was manipulated by failure feedback on a creativity test, and the failure feedback was unrelated to the subsequent entrapping situation. Moreover, participants were not advised to adopt any particular sort of strategy.

Experiment 2 failed to find mediation by mood. We pursued the question further in Experiments 3 and 4, but in any case the findings of Experiment 2 suggest that some inner process other than mood was responsible for the effect of ego threat on entrapment.

## EXPERIMENT 3

Experiments 1 and 2 provided evidence that threatened egotism can increase the tendency to become entrapped in costly, losing endeavors. Experiment 3 sought to extend this pattern in several ways. First, we used an interpersonal (competitive) event rather than a solitary one as we had used in the first two studies. Specifically, participants competed against another participant in a so-called dollar auction, a procedure adapted from Teger (1980; also Brockner & Rubin, 1985; Shubik, 1971). In that procedure, participants offer competing bids to buy a dollar. After the open-ended bidding period is ended, because there are no further bids forthcoming, both the highest and the second highest bidder must pay what they bid, although only the highest bidder gets the dollar. Teger pointed out that this is an effective procedure for studying entrapment because one is first drawn in by the opportunity to get a dollar for less than a dollar, but as the bids rise, one is pulled along each time by the reluctance to come in second place. The second important change for Experiment 3 was that the ego threat was induced by failure feedback on a creativity test. The creativity feedback had no apparent connection to the dollar auction. Such a design allowed us to exclude either reactance theory or demand characteristics as conceivable explanations for the results of Experiments 1 and 2. The hypothesis was that threatened egotism would increase entrapment in the dollar auction.

Experiment 3 sought again to investigate the possible roles of mood and trait self-esteem. The results of the first two studies had been inconsistent regarding the impact of trait self-esteem.

## Method

### PARTICIPANTS

In Experiment 3, 75 undergraduate students participated to fulfill part of a course requirement. The data of 4 participants were excluded because they did not follow the instructions, and the data of 2 participants were excluded because of suspicion. As a result, 69 participants (27 men) remained for data analysis.

### PROCEDURE

Participants were run in same-gender groups of 4 people. The experimenter escorted participants into different rooms upon their arrival. Participants were informed that there were two parts of the experiment: personality and creativity and an auction game. Participants read over and signed the consent form, completed a survey of demographic information, and filled out Fleming and Courtney's (1984) version of the Janis and Field (1959) self-esteem scale.

Participants were then given two questions from an ostensible creativity test (Baumeister et al., 1993). Each question took 3 minutes. The first question asked participants to list alternative uses of a doughnut (a difficult item, for the ego-threatened group) or a brick (an easy item, for the control group). The second question asked participants to imagine the potential problems that would ensue if people could fly. Participants in the ego-threatened group received a very low score—a percentile of 19%; participants in the controlled group received a very high score—a percentile of 90%. Participants were randomly assigned into either the ego-threatened group or the control group. Participants filled out the current version of the PANAS (Watson et al., 1988) after they received performance feedback.

Participants were then given printed instructions for the game and \$5 of quarters as a deposit. The instruction said that the \$5 was theirs to keep as compensation for their participation in the experiment. Participants could choose to bid or not, and if they chose to bid, they could decide how much to bid. They were told that they were paired with another student in their group with whom they would bid for another dollar, and whoever bid the highest would receive the dollar. However, the person with the second highest bid also had to pay his or her bid even though the person would receive nothing in return. There were several rounds of the auction. In the first round, the experimenter asked for each person's bid. Starting from the second round, the experimenter told each person his or her opponent's bid, and the participant decided whether or not to bid more. The auction ended when one person decided not to continue. The experimenter double-checked that participants understood the rules before the auction started.

In reality there was no second participant and the ostensible other player was manipulated by the experimenter. After each bid, participants were informed that their opponent had come back with a bid 25 or 50 cents more than their last bid. The auction stopped when the participant decided to withdraw or the \$5 deposit was used up. Participants then filled out a postexperimental questionnaire that contained a manipulation check. The manipulation check asked participants how they felt about themselves after they had received the feedback on the creativity test. Participants responded on a 7-point scale, from feeling *very bad* (1) to feeling *very good* (7). Participants were then checked for suspicion, debriefed, paid, and dismissed.

## Results

### MANIPULATION CHECK

Ego-threatened participants reported feeling less good about themselves ( $M = 3.11$ ,  $SD = 1.15$ ) on a 7-point

scale than those in the control group ( $M = 5.38$ ,  $SD = 1.45$ ),  $F(1, 67) = 49.71$ ,  $p < .001$ . Thus, the ego threat appears to have had an impact on evaluative feelings about the self.

Participants' trait self-esteem scores ranged from 50 to 122 ( $M = 91.99$ ,  $SD = 16.38$ ), with a median of 96. The scores of continuous variables used in the regression were centered. Gender showed neither main effect nor interaction with the other variables, and so we did not retain it as an independent variable in the main analyses.

### ENTRAPMENT

The main dependent measure was the final (highest) bid that the participant made for the dollar, which therefore also amounted to how much the participant lost from his or her original deposit. As predicted, the regression revealed a main effect of threatened egotism on entrapment. Participants who had received bad feedback on the creativity test spent and lost more money in the dollar auction as compared to participants who had received success feedback on their creativity test (see Table 1),  $\beta = .31$ ,  $t(66) = 2.79$ ,  $p = .007$ . The effect size was  $d = .72$ .

The regression analysis also revealed a significant tendency for participants with high self-esteem to invest more money than those with low self-esteem,  $\beta = .27$ ,  $t(66) = 2.39$ ,  $p < .02$ . The interaction between trait self-esteem and ego threat was not significant,  $t < 1$ , *ns*. Thus again, trait self-esteem showed a tendency to make a difference, and its effect on entrapment appeared to be independent of the ego threat.

### MOOD AND MEDIATION

The ego threat manipulation appeared to have a greater impact on reported mood and emotional state than the manipulations in the first two studies. With regard to negative mood, the participants who received the ego-threatening failure feedback reported a significantly worse mood ( $M = 14.00$ ,  $SD = 4.35$ ) than those in control condition ( $M = 12.50$ ,  $SD = 2.35$ ),  $\beta < .25$ ,  $t(66) = 2.26$ ,  $p < .03$ . With regard to positive mood, participants in the ego threat condition reported less positive feelings ( $M = 24.43$ ,  $SD = 7.10$ ) than those in the control group ( $M = 29.86$ ,  $SD = 7.32$ ),  $\beta < .37$ ,  $t(66) = 3.30$ ,  $p < .002$ . The regression on the mood subscales also revealed one effect of self-esteem. Specifically, participants with low self-esteem reported stronger negative moods ( $M = 14.00$ ,  $SD = 4.35$ ) than those with high self-esteem ( $M = 12.50$ ,  $SD = 2.35$ ),  $\beta = .41$ ,  $t(66) = 3.75$ ,  $p < .001$ . There was no main effect of trait self-esteem on reported positive moods, and neither did self-esteem yield a significant interaction with the ego threat condition on either positive or negative mood, all  $t$ s  $< 1$ , *ns*.

The significant effects of the ego threat manipulation on positive and negative moods raised the possibility that mood could have mediated the investment behavior, so we conducted a series of mediation analyses, again following the Baron and Kenny (1986) procedures. Both positive moods and negative moods were entered as predictors in the regression analysis. Neither positive moods,  $\beta = .21$ ,  $t(66) = 1.74$ ,  $p = .09$ , nor negative moods,  $\beta = -.23$ ,  $t(66) = -1.88$ ,  $p = .064$ , had a significant effect on entrapment. The main effect of trait self-esteem was reduced to nonsignificance,  $\beta = .13$ ,  $t(66) = 1.10$ ,  $p = .28$ . The main effect of ego threat on entrapment improved,  $\beta = .45$ ,  $t(66) = 3.69$ ,  $p < .001$ . Thus, mood did not mediate the effect of ego threat on entrapment. The finding that the main effect of ego threat actually increased slightly in magnitude suggests that no part of the effect of experimental condition on entrapment consisted of variance shared with the mood measures, and if anything the mood measures simply contributed extraneous variance that once cleaned out resulted in a slightly improved statistical relationship.

### Discussion

Experiment 3 confirmed our prediction that an irrelevant ego threat could exacerbate monetary losses in a subsequent entrapping situation. Ego-threatened participants were more likely than other people to bid beyond the value of the item for which they were bidding. As a result, the ego-threatened individuals ended up losing both money and self-esteem. Consistent with Experiment 2, mood did not mediate the effect of ego threat. As in Experiment 1, high self-esteem participants lost more money than those with low self-esteem, but the effect of ego threat was independent of trait self-esteem. The results of Experiment 3 excluded the conceivable explanations of reactance theory or demand characteristics in Experiments 1 and 2 because the ego threat (failure feedback on a creativity test) was unrelated to the subsequent situation. Furthermore, the experimenter in Experiment 3 did not advocate either a risky or safe strategy, and so participants could make their choice without any pressure from the experimenter.

If one extrapolates from the specific findings of Experiment 3, one might conclude that threatened egotism could increase destructive interpersonal conflicts. Ego-threatened participants were willing to pay much more money than the value of an item just to beat the other person and achieve personal victory. The dollar auction also resembles price wars between grocery stores (Teger, 1980). One store often begins to sell a product at a discount to attract customers; a competing store fights back by offering an even lower price or

by cutting prices of other products. Based on the research that being evaluated by authorities can be ego threatening (for review, see Crocker & Park, 2004), both managers may be more deeply entrapped if both expect an annual evaluation. The escalation of price wars may cause both stores to reduce profit or even suffer loss. As for conflicts in industry, once a strike starts, both labor and management suffer losses. However, both sides may be reluctant to make necessary concessions because they want to defend their self-esteem (Pruitt, 1981; Raiffa, 1982). As a result, it is not uncommon for a costly strike to bring nothing beneficial to either party. Threatened egotism might provide a useful perspective for understanding the pervasive mutual loss outcomes in negotiation and conflict resolution (Thompson & Hrebec, 1996).

### EXPERIMENT 4

The results of Experiments 1, 2, and 3 provided consistent evidence that threatened egotism caused participants to lose money in escalating situations. Experiment 4 was conducted to test whether the effect of ego threat on the entrapment in the counter game in Experiment 1 would be confirmed with a new manipulation of ego threat.

In this experiment, ego threat was manipulated by performance feedback on a creativity test, which was ostensibly unrelated to decisions in the counter game. Building on the method of Baumeister et al. (1993), another version of a creativity test was used. The creativity test contained 10 questions that were adapted from Baltes and Willis (1982) and Mednick (1962). Two types of questions were included: pattern recognition of strings of letters or numbers and generating a word that links the other three words together. There were two versions of the test: an easy one and a hard one. In Experiment 4, participants first worked on the easy version or a difficult version of the test. They then received performance feedback.

Experiment 4 continued exploring the possible effect of trait self-esteem on entrapping behaviors. Furthermore, the Narcissism Personality Inventory (Raskin & Hall, 1979; Raskin & Terry, 1988) was included. Narcissists contain high and vulnerable self-esteem and are considered exceptionally sensitive to negative feedback (Bushman & Baumeister, 1998; Morf & Rhodewalt, 2001). Thus, narcissism might also be relevant to responses to ego threat.

We also changed our mood measure. The earlier studies had used the PANAS but found no mediation, and it is in principle conceivable that deficiencies in that measure contributed to the null results. This



experiment used the Brief Mood Introspection Scale (BMIS; Mayer & Gaschke, 1988). The BMIS measures both the valence (happy-unhappy) and the arousal (arousal-calm) dimensions of mood. This scale was used to test whether mood might be a mediator between the effect of ego threat and commitment to losing endeavors.

### Method

#### PARTICIPANTS

In Experiment 4, 44 undergraduate students participated. The data of 4 participants were excluded because they did not follow the instructions, leaving a final sample of 40 participants (22 women, 16 men, 2 unknown). Participants received \$19 as payment for the study plus any additional money they gained through playing the decision-making game.

#### PROCEDURE

Participants were run in small groups from 1 to 6 people. Upon arrival, participants were seated at different computer cubicles. They were asked if they had filled out the online surveys before they came. The online surveys included a demographic survey, the Self-Esteem Scale (Fleming & Courtney, 1984; Janis & Field, 1959), and the Narcissism Personality Inventory (Raskin & Hall, 1979; Raskin & Terry, 1988). Participants then signed a consent form. They were told that the experiment contained a creativity test and a decision-making game.

Participants were given 8 minutes to work on a creativity test, and they then received performance feedback from the experimenter. Participants were randomly assigned into either the ego threat condition or the control condition. In the ego threat condition, participants worked on the difficult version of the test and received failure performance feedback. In the control condition, participants worked on the easy version of the test and received success performance feedback.

After participants read their performance feedback, participants were left alone to complete the counter game, as in Experiment 1. Participants then filled out a survey including the manipulation check and the BMIS (Mayer & Gaschke, 1988). The manipulation check asked participants how they evaluated their self-esteem after they received feedback on the creativity test on an 11-point scale ranging from -5 (*self-esteem threatened*) to 5 (*self-esteem boosted*). Participants were then paid, debriefed, and dismissed.

### Results

#### MANIPULATION CHECK

Participants in the ego threat condition reported feeling worse about themselves ( $M = .55$ ,  $SD = 1.73$ )

than participants in the control condition ( $M = 1.84$ ,  $SD = .55$ ),  $F(1, 37) = 4.65$ ,  $p = .038$ . Thus, the ego threat succeeded in dampening self-esteem.

*Validation study.* A pilot study was conducted to test the difference of difficulty between the easy and hard version of the tests. In it, 53 undergraduates were randomly assigned to either the easy version or the hard version of the test to work on. Participants who received the hard version answered fewer questions ( $M = 4.12$ ,  $SD = 1.63$ ) correctly than participants who took the easy version ( $M = 8.44$ ,  $SD = 1.85$ ),  $F(1, 51) = 81.51$ ,  $p < .001$ .

#### ENTRAPMENT

A preliminary test using analysis of variance (ANOVA) with gender and ego threat as independent measures showed that gender interacted with ego threat to influence entrapment. The ANOVA results suggested that ego threat had a larger impact on men's behaviors than women's behaviors, even though direction of the trend was the same for both genders. Gender therefore was included as an independent variable in the subsequent regression analysis.

Both trait self-esteem and narcissism were used as predictors in the regression analysis. In the study, 37 participants completed the trait self-esteem scale and the narcissism scale. Participants' trait self-esteem scores ranged from 64 to 120 ( $M = 92.70$ ,  $SD = 13.93$ ), with a median of 94.0. Participants' narcissism scores ranged from 5 to 36 ( $M = 18.30$ ,  $SD = 9.40$ ), with a median of 16. The scores of continuous variables used in the regression were centered.

A hierarchical regression analysis was conducted. The amount of money lost in the counter game was used as the dependent measure. In Step 1, ego threat, gender, trait self-esteem, and narcissism were entered as predictors. In Step 2, the two-way interaction terms were entered as predictors: Ego Threat  $\times$  Trait Self-Esteem, Ego Threat  $\times$  Narcissism, Ego Threat  $\times$  Gender, Gender  $\times$  Trait Self-Esteem, Gender  $\times$  Narcissism, and Trait Self-Esteem  $\times$  Narcissism; in Step 3, the three-interaction terms were entered as predictors: Ego Threat  $\times$  Trait Self-Esteem  $\times$  Narcissism, Ego Threat  $\times$  Gender  $\times$  Trait Self-Esteem, Ego Threat  $\times$  Gender  $\times$  Narcissism, and Gender  $\times$  Trait Self-Esteem  $\times$  Narcissism; in Step 4, the four-way interactions were entered as predictors.

The main effect of ego threat was significant,  $\beta = .51$ ,  $t(37) = 3.19$ ,  $p = .003$  (see Table 1). The effect size was  $d = .85$  (Cohen, 1977). The main effects of all the other factors, including gender, trait self-esteem, and narcissism, were not significant,  $ts < 1.43$ , *ns*.

The two-way interactions were all not significant with two exceptions. (The significant interaction between

gender and ego threat in the preliminary analysis was not replicated when self-esteem and narcissism were included in the analysis.) The interaction between gender and narcissism was significant,  $\beta = -1.53$ ,  $t(37) = -2.15$ ,  $p < .05$ . Male participants with high narcissism ( $M = 3.33$ ,  $SD = .62$ ,  $n = 9$ ) lost more money than male participants with low narcissism ( $M = 2.75$ ,  $SD = .75$ ,  $n = 6$ ), but women with high narcissism ( $M = 2.67$ ,  $SD = .58$ ,  $n = 10$ ) lost less money than women with low narcissism ( $M = 4.02$ ,  $SD = .53$ ,  $n = 12$ ). These findings were not predicted, resisted straightforward explanation, and will not be further discussed. The interaction between trait self-esteem and narcissism was significant,  $\beta = -.38$ ,  $t(37) = -2.41$ ,  $p < .03$ , but the results could have been produced by the extremely unequal distribution of participants in the different cells. The mean of money lost in each cell was the following: low self-esteem and low narcissism ( $M = 3.27$ ,  $SD = 1.82$ ,  $n = 13$ ), low self-esteem and high narcissism ( $M = 3.67$ ,  $SD = 1.08$ ,  $n = 6$ ), high self-esteem and low narcissism ( $M = 4.45$ ,  $SD = 1.10$ ,  $n = 5$ ), and high self-esteem and high narcissism ( $M = 2.67$ ,  $SD = 2.27$ ,  $n = 13$ ). This pattern was not predicted, resists simple interpretation, and will not be discussed further because the sample sizes were extremely different.

None of the three-way interactions approached significance,  $t_s < 1.3$ , *ns*. The four-way interaction between ego threat and gender and self-esteem and narcissism was not significant,  $t < 1.08$ , *ns*.

#### MOOD AND MEDIATION

Ego threat had no effect on responses to the BMIS. On the valence dimension, participants in the ego threat condition ( $M = 3.40$ ,  $SD = 11.84$ ) reported similar levels of happiness compared to participants in the control condition ( $M = 2.70$ ,  $SD = 11.91$ ),  $F(1, 38) = 0.04$ ,  $p = .85$ . On the arousal-calm dimension, participants in the ego threat condition ( $M = 21.55$ ,  $SD = 11.65$ ) did not report significantly different levels of arousal than participants in the control condition ( $M = 21.05$ ,  $SD = 6.48$ ),  $F(1, 38) = .03$ ,  $p = .87$ .

A mediation analysis was conducted following the procedure of Baron and Kenny (1986). A regression analysis was carried out by adding the valence and the arousal dimensions of the BMIS as predictors. Neither the valence nor the arousal dimensions of moods had any effect on entrapment,  $t_s < 1$ , *ns*. The main effect of ego threat remained significant,  $\beta = .48$ ,  $t(37) = 2.95$ ,  $p = .006$ . Thus, mood did not mediate the effect of ego threat on entrapment.

#### Discussion

The results of Experiment 4 further confirmed the hypothesis that ego threat increases costly entrapment

in losing situations even when the ego threat was ostensibly unrelated to the subsequent entrapping situation. Neither trait self-esteem nor narcissism moderated such an effect. Mood did not mediate this effect.

#### GENERAL DISCUSSION

The results of these four experiments consistently suggested that threatened egotism makes people more prone to become entrapped in losing endeavors. The same pattern (of greater entrapment and greater financial loss resulting from ego threat) was obtained regardless of whether the entrapment opportunity involved a task based on chance and luck (Experiments 1 and 4), one based on skill and ability (Experiment 2), or one based on interpersonal competition (Experiment 3). It was obtained regardless of whether the ego threat was directly related to the entrapment situation (Experiments 1 and 2) or was apparently irrelevant (Experiments 3 and 4). It was not moderated by gender, trait self-esteem, or narcissism, although trait self-esteem had an independent effect in Experiments 1 and 3. It was not mediated by emotion or mood.

Thus, when people felt their self-esteem and reputation were on the line, they made less optimal decisions as judged from the standpoint of financial outcomes. The present studies involved actual money, making the ostensible defense of self-esteem genuinely costly to our participants. We gave each participant a monetary stake to begin the study, and in each of the four studies the participants whose self-esteem had been threatened lost most of that money back to us. Control participants, whose self-esteem was not invoked, kept the majority of their money in all four studies.

As discussed earlier, some research suggests that trait self-esteem may exaggerate responses to ego threat, and other evidence indicates that it may abate reactions to ego threat. The results of the experiments did not support either side of the argument. Trait self-esteem did not moderate people's reactions on ego threat. It did however have a direct and independent effect on entrapment in Studies 1 and 3. Those findings suggest that egotism per se and not just threatened egotism (our main focus) can contribute to entrapment in losing endeavors. Probably the simplest explanation for these effects of self-esteem would invoke the basic confidence and optimism that have been widely associated with self-esteem (for reviews, see Baumeister, Campbell, Krueger, & Vohs, 2003; Baumeister, Tice, & Hutton, 1989). People with high self-esteem generally expect their acts to succeed, and so they typically acquire a self-enhancing orientation that aims more at pursuing success than avoiding failure. Although such an orientation

can lead to success in many endeavors, it probably does increase one's vulnerability to costly losses in entrapment situations. One only escapes from such entrapment by recognizing that success is highly unlikely and that protecting oneself from further losses is the least bad strategy, and the optimistic confidence of people with high self-esteem may make them slower to recognize those facts and circumstances.

### *Money or Self-Esteem*

The capacity for rational thought is one of the defining traits of human nature, and the view of human beings as essentially rational decision makers is a dominant view in several of the social sciences, most notably economics and political science. Certainly money, with its affinity for precise quantification and calculations, is a domain in which rational analysis can exert a dominant and highly adaptive influence over decision making.

Our results however suggest that rationality can be at least somewhat subverted by messy subjective factors, such as egotism. Moreover, this is not a matter of emotion undermining rationality, which is one familiar stereotype: The present results were not mediated by emotion as far as our various measures could tell.

By pitting money against self-esteem in these studies, we may have created a clash of values. In a sense, the notion that people would value their self-esteem and reputation more highly than a few dollars would hardly seem irrational or surprising. From that perspective, some scholars may dismiss our results as a mere curiosity or even as a reflection of expanded rationality insofar as people pursue multiple values (i.e., both self-esteem and money). Such an interpretation would however miss the point that the responses of many of our participants were costly on both counts. To win a prize or victory despite financial cost would perhaps have accomplished a successful trade-off, but that was not the outcome participants achieved in these studies. Instead, by persisting in the losing endeavor, they lost both money and whatever self-esteem they may have sought.

In an earlier investigation, one of us found that people who made financially foolish and costly decisions motivated by self-esteem did not end up feeling that their self-esteem was saved (albeit at some financial expense)—instead, they felt doubly bad about themselves, first for enduring the ego threat and second for losing their money (Baumeister et al., 1993). In other words, losing one's money is not generally an effective way to salvage one's self-esteem, and if anything, it tends to make things worse.

The fact that people ended up losing both money and self-esteem does not of course entail that that was what

they sought. The special fascination with entrapment situations is that costly failure is caused by the pursuit of beneficial success. Like an investor or gambler who seeks to recoup losses by pouring in more money<sup>1</sup> only to produce the opposite result of increasing the ultimate loss, participants in these studies sought to redeem their esteem after its initial loss by pursuing their goals of success with reckless and ultimately costly zeal.

The pursuit of self-esteem is widely recognized as one of the most pervasive motives in human behavior, and it has also been recognized as one motivation that can produce destructive, costly outcomes (e.g., Crocker & Park, 2004). The ego threats in our studies appear to have produced a temporary shortfall in the person's self-esteem, which motivated the person to restore it. In some situations, that might produce the desired result, such as if criticism motivates someone to work harder and ultimately excel. The defining feature of entrapment situations however is that effort and other investments will not bring success, and so the more motivated the person is to continue trying, the greater the loss will be. Our results do not indicate that all people fall victim to entrapment situations or that all ego threats always produce destructive results. Rather, it is precisely the combination of ego threat and entrapment situation that produces the costly, destructive outcomes we observed. The capacity to discern whether persistence will be fruitful or doomed is a separate research question and one deserving of further study. In Experiment 3, it was obvious that no point could turn bad into good after people bid more than 1 dollar to purchase a dollar, but because of threatened egotism they failed to withdraw appropriately.

The present findings added new evidence and extended the idea that threatened egotism may cause self-defeating behaviors (Baumeister, 1997; Baumeister, & Scher, 1988). Entrapment often leads to much more economic losses and psychological suffering than admitting the unwise decision early (Fox & Staw, 1979; Ross & Staw, 1986, 1993). In other words, even though decision makers may initially seek to maintain self-esteem and obtain economic gains by continually investing in a failing course of action, they may eventually have to face up to losses in both spheres.

### *Concluding Remarks*

In closing, we wish to put our results in two broader perspectives. Daniel Kahneman (2003), whose celebrated contributions to economic theory are widely regarded as challenging the rational decision-making view of human thinking, recently remarked that he never intended to deny that humans are rational beings. The overarching message from his work is that people are

incompletely rational. Rationality can be regarded as one tool that the human mind can use for decision making, but it has to compete with other processes. Such a view is highly compatible with the present findings. People want to make money, and toward that end they can engage in dispassionate cost-benefit analyses. However, the decision-making process can instead be driven by other, less rational motives, such as impulses to defend against threats to one's self-esteem or to assert the self.

The other perspective is the pursuit of self-esteem. Pursuit of self-esteem has been a dominant force in Western history and culture, and even today many people regard the quest for self-esteem as both a right and an unending quest. Yet a recent review by Crocker and Park (2004) listed a broad assortment of costs that attend pursuing self-esteem, including poorer learning, neglected or damaged relationships, curtailed autonomy, and impairments to physical and mental health. The present findings converge well with those observations to suggest that the pursuit of self-esteem can be costly even in terms of the financial well-being of the individual. Undoubtedly there are appealing satisfactions that people gain by pursuing self-esteem and warding off threats to their egotism, but sometimes they pay a price for those satisfactions that is reflected in lesser rationality and sometimes, in less money.

#### NOTE

1. We thank an anonymous reviewer for suggesting this example.

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