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Research Article

The Restraint Bias

How the Illusion of Self-Restraint Promotes Impulsive Behavior

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ABSTRACT—*Four studies examined how impulse-control beliefs—beliefs regarding one's ability to regulate visceral impulses, such as hunger, drug craving, and sexual arousal—influence the self-control process. The findings provide evidence for a restraint bias: a tendency for people to overestimate their capacity for impulse control. This biased perception of restraint had important consequences for people's self-control strategies. Inflated impulse-control beliefs led people to overexpose themselves to temptation, thereby promoting impulsive behavior. In Study 4, for example, the impulse-control beliefs of recovering smokers predicted their exposure to situations in which they would be tempted to smoke. Recovering smokers with more inflated impulse-control beliefs exposed themselves to more temptation, which led to higher rates of relapse 4 months later. The restraint bias offers unique insight into how erroneous beliefs about self-restraint promote impulsive behavior.*

Most forms of temptation are rooted in visceral impulses. Visceral impulses, such as hunger, pain, fatigue, and sexual arousal, are highly adaptive mechanisms that provide information about the state of the body and motivate behavior toward satisfying bodily needs. Unfortunately, impulses often come into conflict with, and can ultimately undermine, long-term goals (Loewenstein, 1996). Just consider how readily a hunger pang can corrupt the most committed dieter, or how the "heat of the moment" can lead to infidelity.

Precisely because of the transformative power of impulsive states, it is vital to understand how they compromise resistance to temptation. Consider these common dilemmas. Can recovering alcoholics ever return to the people and places that once nurtured their addiction without fear of relapse? Can dieters visit their favorite buffet without bingeing? Can people committed to their marriage have drinks with past flings without fear of being unfaithful? The answers to questions like these, it would seem, hinge largely on one's beliefs about the human capacity for impulse control. If people are slaves to impulse, then recovering addicts should avoid exposure to temptation. But if people effectively govern their impulses, then a recovering alcoholic is allowed the occasional drink. The importance of impulse-control beliefs can be seen in the story of Odysseus and the sirens' song. Odysseus believed he could not overcome the allure of the sirens' song, so he took drastic measures to avoid it altogether—he put wax in his shipmates' ears and had himself tied down to his ship's mast. Had Odysseus been more confident he could overcome the sirens' temptation, he likely would have taken less extreme precautions.

This article examines how people think about impulse control—whether impulsive states are perceived to be easy or difficult to overcome—and examines the implications of these beliefs for the self-control process. We argue that people generally, unlike Odysseus, exhibit a *restraint bias*: a tendency to overestimate one's capacity for impulse control. The restraint bias matters because it leads people to overexpose themselves to temptation, thereby promoting impulsive behavior. As a starting point for this prediction, we turn to research on the *empathy-gap effect*: the finding that people often have difficulty appreciating the power of impulsive states.

THE EMPATHY-GAP EFFECT

Numerous studies have found that people tend to exhibit what Loewenstein (1996) termed a "cold-to-hot empathy gap": the tendency for people in a cold state (i.e., not experiencing hunger, anger, sexual arousal, and so on) to underestimate the influence a hot, impulsive state will have on their preferences and behavior. Loewenstein argued that the underestimation of visceral impulse is due to constrained memory for visceral experience. That is, although people can recall the circumstances that led to

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an impulsive state (e.g., "I was hungry because I hadn't eaten all day") and can recall the relative strength of an impulsive state (e.g., "that was the hungriest I have ever been"), they cannot bring forth the sensation of the impulsive state.

Empathy-gap effects have been found across a variety of impulsive states, including sexual arousal (Ariely & Loewenstein, 2006), hunger (Nordgren, van der Pligt, & van Harreveld, 2007), fear (Van Boven, Loewenstein, & Dunning, 2005), and drug craving (Sayette, Loewenstein, Griffin, & Black, 2008). For example, in one experiment, Nordgren, van der Pligt, and van Harreveld (2006) used a painful ice water manipulation to hinder participants' performance on a memory test. Later, they asked participants to indicate how the pain and various other factors had affected their performance. Crucially, some participants were again exposed to the painful ice water while they made their attributions, whereas others made their attributions pain free. Nordgren et al. found that participants who made their attributions in a cold state (i.e., pain free) underestimated the influence pain had had on their performance. Only participants who made their attributions while experiencing pain accurately assessed its influence.

Drawing on empathy-gap research, we argue that the inability to appreciate the motivational force of impulse leads people to overestimate their capacity to control temptation (i.e., leads people to exhibit a restraint bias). Specifically, we predict that when people are in a cold, nonimpulsive state, they will overestimate their impulse-control capacity, whereas when they are in a hot, impulsive state, they will have a more realistic view of their capacity for impulse control. Moreover, we expect that differences in impulse-control beliefs will influence the extent to which people expose themselves to temptation. We argue that people who perceive themselves to have a greater capacity for impulse control will expose themselves to more temptation and will ultimately exhibit more impulsive behavior than people who perceive themselves to have less impulse control.

Note that people are usually in a cold, nonimpulsive state. If confirmed, these predictions would imply that people generally exhibit a restraint bias and, consequently, routinely ignore caution by exposing themselves to temptation.

STUDY 1

Study 1 examined how beliefs about mental fatigue influence students' study schedules. When mental resources are taxed, people experience fatigue (Cameron, 1973). This can be a problem for people who need to concentrate for long periods of time, such as students cramming for final exams. Effective studying, therefore, requires that students either persevere through their fatigue or design a more balanced study schedule that provides ample time and thus avoids the need to cram.

Yet, we argue that students generally overestimate their ability to overcome fatigue and therefore do not sufficiently take fatigue into account when designing a study schedule. To test this prediction, we asked college students to perform a tiring or a nontiring task and then estimate how much control they had over mental fatigue. Afterward, the students designed a study schedule for the next semester. We predicted that nonfatigued students would perceive themselves to have more control over mental fatigue than would fatigued students. Consequently, we expected that nonfatigued students would take fewer precautions against fatigue by designing a study schedule that left the majority of work for the end of the semester.

Method

Seventy-two students were randomly assigned to either the fatigued or the nonfatigued condition. In the fatigued condition, the students completed a strenuous memory task that has been shown to induce fatigue (Nordgren et al., 2006). The task required participants to memorize random strings of numbers under time pressure. The task lasted for nearly 20 min for participants in the fatigued condition. Participants in the nonfatigued condition performed a much less vigorous version of this task (lasting only 2 min). Immediately after the task, participants indicated their state of fatigue and assessed how much self-control they had over mental fatigue. Finally, participants indicated how they planned to distribute their workload the next semester.

To assess participants' beliefs in their ability to overcome mental fatigue, we asked them to rate the following statements: (a) "Mental fatigue is difficult to overcome"; (b) "When I feel tired, I find it difficult to concentrate"; and (c) "I have more control over mental fatigue than the average person." Participants rated each of these statements on a 7-point scale, which ranged from 1, *strongly disagree*, to 7, *strongly agree* ($\alpha = .79$).

Next, we asked participants to estimate, for the next semester, what percentage of their studying they would leave until the last week. Participants were told,

> We would like to know what percentage of time spent studying you intend to leave until the last week of *next* semester. Please indicate a score between "0" and "100" percent. A score of "0" percent means that you will do all of your studying before the last week of the semester; a score of "100" percent means that you will do all of your studying during the last week of the semester.

Results and Discussion

The manipulation was successful. Participants who performed the extended memory test rated themselves as more fatigued ($M = 5.17$, $SD = 0.92$) than participants who performed the brief memory test ($M = 3.87$, $SD = 0.90$), $F(1, 70) = 41.84$, $p < .001$, $\eta^2 = .34$.

We predicted that fatigued participants would perceive themselves to have less control over fatigue than would nonfatigued participants and would thus plan to better balance their

study schedules. In line with this prediction, fatigued participants estimated that they had less control over mental fatigue ($M = 5.09$, $SD = 0.77$) than did nonfatigued participants ($M = 5.60$, $SD = 0.77$), $F(1, 70) = 8.17$, $p = .005$, $\eta^2 = .09$. In addition, fatigued participants estimated that they would leave 52.68% ($SD = 1.32$) of their studying until the final week of the semester, which was significantly less than for nonfatigued participants, who planned to leave 59.38% ($SD = 1.50$) of their studying until the final week, $F(1, 70) = 4.51$, $p = .04$, $\eta^2 = .05$. Most important, although fatigue was negatively correlated with intentions to cram, $r(72) = -.34$, $p = .005$, impulse-control beliefs fully mediated this relationship ($z = -2.70$, $p = .005$).

STUDY 2

In Study 2, we used a field experiment to test whether people's naturally occurring hunger state would influence their impulse-control beliefs, as well as their decisions to limit exposure to hunger-driven temptation. Participants were approached either as they entered a cafeteria (the hungry condition) or as they exited the cafeteria (the satiated condition). The task required participants to rank seven snacks (e.g., a candy bar) from their least to most favorite. Afterward, participants were asked to select one snack. Crucially, participants were informed that they would win €4 (as well as the snack they chose) if they managed to return the snack uneaten a week later.

The optimal outcome in this study was for participants to choose their favorite snack and return it a week later, thereby earning both the money and their favorite snack. However, we expected that many people would find it difficult to refrain from eating the snack during the week, particularly if they chose a snack they found tempting. Therefore, we expected that many participants would choose a less tempting snack, to improve their chances of earning the money.

This study tested three specific predictions. First, we predicted that satiated participants would perceive themselves as having more control over their hunger cravings than would hungry participants. Second, because of their inflated impulse-control beliefs, we predicted that satiated participants would choose a more tempting snack than would hungry participants. Third, we predicted that participants who chose the more tempting snacks (i.e., participants in the satiated condition) would be less likely to return the snack 1 week later.

Method

Participants were approached either as they entered a cafeteria (the hungry condition) or as they exited the cafeteria (the satiated condition). Seventy-nine participants (a mix of university students and employees) were presented with seven snacks and were asked to rank the snacks from least to most favorite. Once they ranked the snacks, participants were told the following:

> We would now like you to select a snack. You can eat the snack anytime you like. However, if you return the snack to this location in 1 week, we will give you €4 and you will get to keep the snack.

Participants then chose a snack and indicated whether they intended to return the snack for the money. (Participants who did not intend to return the snack were removed from the remainder of the study.) After selecting a snack, participants answered a questionnaire, which assessed their momentary hunger state and their impulse-control beliefs. The impulse-control belief items were modified from the three statements used in Study 1 (e.g., "Hunger is difficult to overcome") and were rated on the same 7-point scale, which ranged from 1, *strongly disagree*, to 7, *strongly agree* ($\alpha = .82$). The snacks were tagged with stickers, to ensure that any snacks returned a week later were the originals.

Results and Discussion

Participants who were walking into the cafeteria indicated that they were experiencing more hunger ($M = 4.88$, $SD = 0.89$) than did participants who were leaving the cafeteria ($M = 2.43$, $SD = 1.24$), $F(1, 77) = 100.00$, $p = .001$, $\eta^2 = .56$.

We had predicted that their hunger state would influence participants' beliefs about their capacity to control their hunger cravings. We found that satiated participants had stronger impulse-control beliefs ($M = 4.91$, $SD = 1.01$) than did hungry participants ($M = 4.32$, $SD = 1.00$), $F(1, 77) = 6.86$, $p = .01$, $\eta^2 = .08$.

We next examined the snacks that participants had chosen. As predicted, satiated participants exposed themselves to more temptation. Specifically, satiated participants generally chose their first- or second-favorite snack ($M = 6.21$, $SD = 0.88$), whereas hungry participants tended to select their second- or third-favorite snack ($M = 5.47$, $SD = 1.13$), $F(1, 77) = 10.76$, $p = .002$, $\eta^2 = .12$. We argue that this effect was due to participants' impulse-control beliefs. In line with this view, perceptions of greater impulse control were associated with the selection of a more tempting snack, $r(79) = .35$, $p = .002$. Although hunger was associated with snack selection, $r(79) = -.33$, $p = .003$, this effect was partially mediated by impulse-control beliefs ($z = 1.88$, $p = .07$).

Next, we examined whether participants' snack selection influenced their likelihood of returning the snack 1 week later. Thirty-nine participants successfully returned the snack. Though the difference was not significant, the return rate was higher in the hunger condition (60.5%) than in the satiated condition (39.0%), $\chi^2(1, N = 79) = 3.65$, $p = .06$. Moreover, we found that participants who returned the snack had chosen a less favored snack ($M = 5.51$, $SD = 1.12$) than participants who did not return the snack ($M = 6.20$, $SD = 0.91$), $F(1, 77) = 8.95$, $p = .004$, $\eta^2 = .10$. Finally, we examined whether snack selection mediated the relationship between hunger and the likelihood of returning the snack. Although hunger was

associated with returning the snack, $r(79) = .23$, $p = .04$, we found that snack selection fully mediated the relationship between hunger and returning the snack ($z = -2.05$, $p = .04$).

STUDY 3

The main purpose of Study 3 was to manipulate participants' impulse-control beliefs, to test the direct effect of impulse-control beliefs on exposure to temptation. To do this, we manipulated heavy smokers' beliefs about the amount of control they had over their cigarette cravings and then had them play a self-control game that pitted the temptation to smoke against the opportunity to win money. We predicted that smokers who had been given feedback that they had a high capacity for self-control (the high-control condition) would overestimate their capacity for restraint over cigarette cravings—both objectively and in relation to participants who were given feedback that they had a low capacity for self-control (the low-control condition). As a result, we expected that participants in the high-control condition would expose themselves to more temptation, which ultimately would lead to greater rates of smoking during the game.

Method

Fifty-three university students were randomly assigned to either the high-control or the low-control condition. To manipulate impulse-control beliefs, we gave all participants a bogus "implicit-measures" test, which purportedly revealed their implicit capacity for impulse control. The bogus test was an Implicit Association Test that paired temptation-laden images and neutral images with positive and negative words. High-control participants received feedback saying that they had a high capacity for impulse control, whereas low-control participants received feedback saying that they had a low capacity for impulse control.

After the manipulation, participants were asked to play a self-control game that pitted the temptation to smoke against the opportunity to win money. The goal of the game was to watch the film *Coffee and Cigarettes* (Jarmusch, 2003) without having a cigarette. Participants were asked to select among four levels of temptation to endure during the film: keep a cigarette in another room (paid €2), keep a cigarette on the desk in the cubicle (paid €4), hold an unlit cigarette in their hand throughout the film (paid €6), or hold an unlit cigarette in their mouth throughout the film (paid €8). Participants earned the money only if they were able to avoid smoking the cigarette during the film. Finally, we measured participants' smoking-impulse-control beliefs to ensure that the manipulation had been successful by asking them to rate three statements modified from the statements in Study 1 (e.g., "Cigarette craving is difficult to overcome"). Participants rated each of these statements on the same 7-point scale as before, which ranged from 1, *not at all agree*, to 7, *completely agree* ($\alpha = .86$).

Results and Discussion

The manipulation was successful. Smokers in the high-control condition perceived themselves to have more control over their cigarette cravings ($M = 4.90$, $SD = 1.09$) than did participants in the low-control condition ($M = 4.28$, $SD = 0.98$), $F(1, 51) = 4.50$, $p = .04$, $\eta^2 = .08$.

As predicted, smokers in the high-control condition exposed themselves to more temptation ($M = 3.00$, $SD = 0.96$) than did smokers in the low-control condition ($M = 2.38$, $SD = 0.94$), $F(1, 51) = 5.54$, $p = .02$, $\eta^2 = .09$. On average, low-control participants chose to watch the film with a cigarette on the table, whereas high-control participants chose to watch the film with a cigarette in their hand.

What were the consequences of deciding to endure more temptation during the film? The rate of failure to abstain from smoking differed significantly between the high-control condition (33.33%) and the low-control condition (11.52%), $\chi^2(1, N = 51) = 3.59, p = .06$. Note that the rate of failure in the high-control condition indicated that many of these smokers exposed themselves to more temptation than they could handle. This study provides direct evidence for the prediction that impulse-control beliefs influence exposure to temptation and provides additional support for the notion that inflated impulse-control beliefs promote impulsive behavior.

STUDY 4

Study 4 examined whether the restraint bias could help to explain one of the biggest puzzles in addiction research: why relapse often occurs after physical withdrawal symptoms cease. We argue that once the immediate withdrawal cravings fade, recovering addicts begin to overestimate their capacity to overcome drug cravings that might be elicited by drug-related cues (e.g., visiting places they associate with drug use) and consequently overexpose themselves to drug-laden temptation.

To test this notion, we conducted a field study involving recovering smokers who had recently overcome withdrawal cravings—they had abstained from cigarettes for at least 3 weeks. These smokers were asked to estimate their capacity to control cigarette cravings and to indicate the amount of smoking temptation to which they exposed themselves. We assessed their smoking status 4 months later. We predicted that smokers with higher impulse-control beliefs would report greater exposure to smoking temptation. Moreover, we expected that high-exposure smokers would be more likely to have relapsed 4 months later.

Method

Fifty-five participants were contacted through a large smoking-cessation program. We contacted potential participants 3 weeks

into the program. To be eligible, smokers had to have abstained from smoking for the entire 3 weeks. At this time, participants were given an initial questionnaire that asked them to report their impulse-control beliefs about smoking (identical to the measure used in Study 3) and to indicate how much smoking temptation they routinely encountered. Four months later, participants were contacted and were asked to report their current level of cigarette use.

Smoking-Temptation Avoidance

To measure the extent to which recovering smokers avoided the temptation to smoke, we asked them to rate the following statements: (a) "I try to avoid being around people who smoke," (b) "I can have an occasional cigarette without becoming addicted" (reverse-scored), (c) "I make sure to keep cigarettes out of my environment (e.g., house, car, office)," (d) "I try to avoid being around cigarettes when I'm feeling stressed," and (e) "I ask people not to smoke around me." Participants rated each of these statements on a 7-point scale, which ranged from 1, *not at all agree*, to 7, *completely agree* ($\alpha = .72$).

Smoking Status

Smoking frequency at the follow-up was measured by asking participants to "please indicate which category best describes how often you smoke right now." Response options were "not at all" (1), "once or twice a week" (2), "once or twice a day" (3), "half a pack a day" (4), and "a pack a day or more" (5).

Results and Discussion

As predicted, smokers' impulse-control beliefs were associated with their reported avoidance of smoking temptation. Smokers who perceived themselves as having a higher capacity for impulse control reported less avoidance of smoking temptation, $r(55) = -.32, p = .02$. Impulse-control beliefs were not related to smoking status, $r(55) = .16$, n.s.

We next examined whether the extent to which participants avoided the temptation to smoke predicted smoking status 4 months later. At the 4-month follow-up, 32.71% of participants reported remaining abstinent, 18.2% reported smoking once or twice a week, 12.73% reported smoking once or twice a day, 23.62% reported smoking half a pack a day, and 12.74% reported smoking a pack or more a day. As expected, avoidance of smoking temptation significantly predicted smoking status 4 months later. Smokers who reported less avoidance of smoking temptation had a higher rate of relapse 4 months later ($\beta = -.76$, $SE = .29$), $t(55) = -2.61, p = .01$. This study demonstrates that natural variation in impulse-control beliefs influences not only how people approach self-control dilemmas, but also the success of their self-control efforts.

GENERAL DISCUSSION

This article has examined how people's beliefs about impulse control—whether impulsive states are perceived to be easy or difficult to overcome—influence their self-control. The four studies we have reported provide evidence for a restraint bias: a tendency for people to overestimate their capacity for impulse control. In our studies, this biased perception of restraint had important consequences for people's self-control strategies. Inflated self-control beliefs led people to overexpose themselves to temptation, thereby promoting impulsive behavior.

One of the strengths of these studies is that they focused on relevant samples (e.g., recovering addicts) while using behavioral measures of self-control. For instance, in Studies 2 and 3, altering impulse-control beliefs changed the actual self-control strategies people used—and these self-control strategies ultimately influenced how well participants resisted temptation. Note, however, some limitations of these experiments. Because Study 2 was a field experiment, participants were not randomly assigned to condition; thus, we cannot rule out other factors that may have influenced our results. In Study 4, we examined only smokers who remained abstinent after 3 weeks. However, many smokers who attempt to quit never remain abstinent for that long. It is therefore possible that the findings from Study 4 do not generalize to all smokers, but rather apply only to those who have at least a limited ability to refrain from smoking.

These findings provide unique insight into the process of self-control. One nagging question for addiction research is why people willingly initiate behavior they know to be addictive. The restraint bias suggests that people are willing to experiment with addictive drugs simply because they believe they can overcome the addiction. In support of this view, a study that asked heroin users to indicate how much money they would be willing to pay for the heroin substitute buprenorphine (Badger et al., 2007) found that the users valued an extra dose of buprenorphine more highly when they were craving heroin than when they were satiated. If experienced heroin users continue to underestimate their craving, imagine how difficult it would be for a beginning drug user to fully appreciate the power of drug addiction.

Our research also contributes to the debate on the role of agency (perceptions of control, confidence, efficacy, etc.) in the self-control process. A dominant view in addiction research is that self-efficacy is vital for self-control (Bandura, 1982), and many addiction researchers advocate elevating self-efficacy (Baer, Holt, & Lichtenstein, 1986). Yet our findings suggest that unrealistic perceptions of control can actually hinder self-control efforts. This line of reasoning corresponds with research on the benefits of "optimal optimism" (Baumeister, 1989). For example, whereas we found that moderate impulse-control beliefs leave people better prepared to manage temptation, other work has found that realistic control beliefs can enhance psychological preparedness, such as bracing oneself for a negative outcome (Shepperd, Findley-Klein, Kwavnick, Walker, & Perez,

2000). One possibility is that elevated perceptions of control are beneficial for the initiation of self-control efforts, but realistic beliefs are beneficial for the maintenance of ongoing self-control efforts (Rothman, Baldwin, & Hertel, 2004).

An urgent task for future research is to test whether enduring shifts in impulse-control beliefs can be created. Some addiction programs already seem to understand the danger of inflated impulse-control beliefs and attempt to diminish them. Two tenets of Alcoholics Anonymous, for example, are that an alcoholic should admit powerlessness over alcohol and that an alcoholic always remains an alcoholic. The key question is whether deflated impulse-control beliefs can persist in cold states. Alcoholics Anonymous meetings frequently revisit the notion of powerlessness over alcohol, a practice that suggests that as impulses diminish, people may begin to drift back toward the illusory belief that they can handle their cravings.

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REFERENCES

Ariely, D., & Loewenstein, G. (2006). The heat of the moment: The effect of sexual arousal on sexual decision making. *Journal of Behavioral Decision Making*, *19*, 87–98.

Badger, G.J., Bickel, W.K., Giordano, L.A., Jacobs, E.A., Loewenstein, G., & Marsch, L. (2007). Altered states: The impact of immediate craving on the valuation of current and future opioids. *Journal of Health Economics*, *26*, 865–876.

Baer, J.S., Holt, C.S., & Lichtenstein, E. (1986). Self-efficacy and smoking reexamined: Construct validity and clinical utility. *Journal of Consulting and Clinical Psychology*, *54*, 846–852.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist*, *37*, 122.

Baumeister, R. (1989). The optimal margin of illusion. *Journal of Social and Clinical Psychology*, *8*, 176–189.

Cameron, C. (1973). A theory of fatigue. *Ergonomics*, *16*, 633–648.

Jarmusch, J. (Director). (2003). *Coffee and cigarettes* [Film]. Los Angeles: MGM.

Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, *65*, 272–292.

Nordgren, L.F., van der Pligt, J., & van Harreveld, F. (2006). Visceral drives in retrospect: Explanations about the inaccessible past. *Psychological Science*, *17*, 635–640.

Nordgren, L.F., van der Pligt, J., & van Harreveld, F. (2007). Evaluating Eve: Visceral states influence the evaluation of impulsive behavior. *Journal of Personality and Social Psychology*, *93*, 75–84.

Rothman, A.J., Baldwin, A., & Hertel, A. (2004). Self-regulation and behavior change: Disentangling behavioral initiation and behavioral maintenance. In K. Vohs & R. Baumeister (Eds.), *The handbook of self-regulation* (pp. 130–148). New York: Guilford Press.

Sayette, M.A., Loewenstein, G., Griffin, K.M., & Black, J. (2008). Exploring the cold-to-hot empathy gap in smokers. *Psychological Science*, *19*, 926–932.

Shepperd, J.A., Findley-Klein, C., Kwavnick, K.D., Walker, D., & Perez, S. (2000). Bracing for loss. *Journal of Personality and Social Psychology*, *78*, 620–634.

Van Boven, L., Loewenstein, G., & Dunning, D. (2005). The illusion of courage in social prediction: Underestimating the impact of fear of embarrassment on other people. *Organizational Behavior and Human Decision Processes*, *96*, 130–141.

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