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The Financial Cost of Sadness [*]

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Abstract

This paper hypothesizes a phenomenon—myopic misery—in which sadness creates a myopic focus on obtaining money *now* versus *later*, increasing intertemporal discount rates and thereby producing substantial financial costs. Experiments 1-3 randomly assigned participants to a sad- or neutral-mood condition, and then offered intertemporal choices. Disgust served as a comparison condition in Experiments 1-2. Results revealed that sadness significantly increased impatience: Relative to median neutral-mood participants, median sad-mood participants accepted 13% to 34% less money today to avoid waiting three months for payment. Impatient thoughts mediated the effects. Disgusted participants were not more impatient than neutral participants, implying that the financial effects do not arise from all negative emotions. The paper concludes that myopic misery is a robust and potentially harmful phenomenon.

Keywords: Myopic Misery, Sadness, Emotion, Intertemporal Choice, Present Bias

Samuel Taylor Coleridge (1772 –1834), the English poet and philosopher, experienced profound bouts of anxiety and depression throughout his life. This life experience may have given rise to his famous phrase, "a sadder and a wiser man." More recently, beginning with empirical tests of "depressive realism" (Alloy & Abramson, 1979), hundreds of papers have found support for the "sadder-but-wiser" hypothesis—that sadness and depression make individuals wiser. For example, sadness tends to be associated with careful, deliberative, "System 2" thought (Kahneman, 2011) as opposed to heuristic, impulsive, "System 1" thought (Keltner & Lerner, 2011). Sadness has been shown to *reduce* a range of otherwise robust cognitive biases, including having overly optimistic views of one's importance, reputation, and abilities (Alloy & Abramson, 1979), relying on stereotypes (Park & Banaji, 2000), and over-attributing causality to individuals (Keltner, Ellsworth, & Edwards, 1993).

In the present paper, we test the economic implications of the "sadder-but-wiser" hypothesis's presumed underlying mechanisms. Specifically, we focus on the domain of intertemporal choice, for four inter-related reasons. First, quantifiable standards of wisdom apply in this domain. Second, intertemporal choices requiring a decision between a sooner (usually smaller) reward and a later (usually larger) reward are pervasive in daily life. Third, intertemporal choices have important consequences. In one well-known experiment, Mischel and Ebbesen (1970) offered preschoolers one marshmallow and promised them a second if they could wait 15 minutes before eating the first one. Those who were able to postpone immediate gratification developed into more cognitively and socially competent adolescents. They had greater self-esteem, higher SAT scores, and better educational and economic achievements as adults (Mischel et al., 2011). A fourth and final reason is that recent theoretical discoveries

regarding sadness and choice (described under hypotheses) suggest the possibility that sadness has unique implications for choices involving intertemporal tradeoffs.

Normative approaches to intertemporal choice. To be sure, future gains have less utility than equivalent immediate gains and should be discounted to a smaller present value (Loewenstein & Prelec, 1992). But the extent to which people discount future outcomes tends to be irrationally impatient (Frederick, Loewenstein, & O'Donoghue, 2002), leading to such societal problems as credit card debt (Meier & Sprenger, 2010) and overeating/under-exercising (Chabris, Laibson, Morris, Schuldt, & Taubinsky, 2008). Field studies, natural experiments, and laboratory experiments report discounting that far exceeds market-based interest rates (Frederick, et al., 2002). Given that emotion has been posited as a main driver for irrational impatience in intertemporal choices (Loewenstein & Prelec, 1992; Loewenstein, Read, & Baumeister, 2003), it is not surprising that at least two papers have examined the effects of positive emotion on intertemporal choice (Ifcher & Zarghamee, 2011; Pyone & Isen, 2011), finding that positive affect makes people more patient. What is surprising is that, to our knowledge, no papers have examined the potential causal role of negative emotions on time discounting. This is a significant gap. One cannot assume that the effects of negative emotions will simply be the opposite of the effects of positive emotions. Several papers have found that emotions of the same valence can have opposing effects from each other on decision making. For example, fear decreases while anger increases preferences for risky options (Lerner & Keltner, 2000, 2001).

Hypotheses: Myopic Misery

Drawing on conceptual models of emotion and cognition (e.g., Forgas, 1995; Lerner & Keltner, 2000; Raghunathan & Pham, 1999; Schwarz & Clore, 1983), our overarching

hypothesis is that experimentally-primed sadness will carry over to shape subsequent financial choices.

At least two possible, but opposing, hypotheses could causally link sadness to impatient intertemporal choices. According to the *sadder-but-wiser hypothesis*, sadness should motivate individuals to more analytically think through the financial implications of the various choice options, and therefore *decrease* impatience. Consistent with this idea, sadness increases systematic thought and reduces biases that generally arise from insufficiently systematic thought. For example, sadness reduces the fundamental attribution error by increasing consideration of situational factors in attributing causality (Small, Lerner, & Fischhoff, 2006).

On the other hand, a case can be made for a *myopic-misery hypothesis* in which sadness *increases* impatience because sadness, arising from a sense of loss, triggers an implicit goal of reward replacement (Lerner, Small, & Loewenstein, 2004). Raghunathan and Pham (1999) found, for example, that sad individuals are biased toward high-reward/high-risk options over low-reward/low-risk options. Until the reward is received, the sad feeling may create a sense of urgency (Keltner & Lerner, 2011; but see Ellsworth & Scherer, 2003).

An additional line of research also points to the *myopic-misery* hypothesis. If one considers intertemporal choices as battles between the "current self" (i.e., *I want it now*) and the "future self" (i.e., *I will benefit from waiting and getting more later*) (Parfit, 1984; Thaler & Shefrin, 1981), then sadness may increase discounting by intensifying the "current self." Indeed, sadness has been shown to trigger a generalized devaluation of the self (Cryder, Lerner, Gross, & Dahl, 2008; Lerner, et al., 2004), which creates an implicit desire to enhance what William James (1890) called the "material self." Several studies examining the endowment effect have found that sad decision makers pay a higher buying price than neutral-state decision makers

(Cryder, et al., 2008; Lerner, et al., 2004). Moreover, the more decision makers focus on the self prior to the purchase, the more money they are willing to pay (Cryder, et al., 2008). Finally, Clark and Isen's (1982) findings on mood-repair motives may hold implications regarding whether sad individuals want the smaller reward now or the larger reward later on. If that theory applies here, then decision makers in any negative state (e.g., sadness or disgust) should both show increased discounting.

Thus, two competing hypotheses could apply to the effect of sadness on intertemporal choice. To complicate matters, one might also question whether these hypotheses apply to sadness per se or apply to the superordinate category of negative emotion. Disgust—another negative emotion—may help to answer this question. Will the effects of disgust mirror those of sadness, as a negative mood-repair hypothesis would imply? Or will disgust have unique effects, as the reward replacement hypothesis would imply? Disgust is thought to have evolved as a strategy for keeping humans away from indigestible foods and harmful behaviors (Keltner & Lerner, 2011; Rozin, Haidt, & McCauley, 1993). If so, disgust, if anything, should *diminish* impatience, since it triggers a goal of expelling rather than acquiring (Keltner & Lerner, 2011). Three experiments that randomly assigned decision-makers to emotional states tested these hypotheses.

Experiment 1

We randomly assigned 202 participants (116 females, 86 males; ages ranged from 18-63 years, with a mean of 25) to a neutral-, sad-, or disgusted-mood condition. Participants were students and local residents from the Harvard Decision Science Laboratory participant pool who responded to an advertisement offering $15 for participation. Each participant sat in a private cubicle within a laboratory. Drawing on established methods (Gross & Levenson, 1995; Lerner,

et al., 2004), our emotion-induction procedure was the same in all three experiments. Participants first watched three-minute video clips about the death of a boy's mentor (Gross & Levenson, 1995) in the sadness condition, about an unsanitary toilet (Lerner, et al., 2004) in the disgust condition, and about the Great Barrier Reef (Lerner, et al., 2004) in the neutral-state condition. Depending on condition, participants next wrote an essay about a situation during which they had experienced sadness or disgust, or an essay about their nightly activities. Both before the emotion-induction procedure and immediately after the choice task, participants reported how intensely they felt 19 emotions, including emotions measuring sadness, disgust, and a neutral state.

Participants then made 27 choices between receiving cash amounts today (between $11-$80) and larger cash amounts (between $25-$85) at points in the future ranging from one week to six months (Kirby, Petry, & Bickel, 1999). Following standard behavioral-economics procedures (Weber et al., 2007), we incentivized participants to express their true preferences by randomly selecting one of the choice pairs for one of the participants in each session (median of 13 participants per session) and paying out that person's preferred alternative. Choices of a reward that day were paid at the end of the session in cash. Later rewards were paid by a check mailed at the later time.

The emotion-induction procedure was effective in both magnitude and specificity. Sad-condition participants reported feeling more sad (M = 3.72) than feeling neutral (M = 1.66), $t(78) = 6.72$, $p < .0001$, disgusted (M = 1.00), $t(78) = 13.68$, $p < .0001$, or any other measured negative emotion, including anger (M = 1.30), $t(78) = 13.50$, $p < .0001$, and fear (M = 1.31), $t(78) = 13.12$, $p < .001$. Comparable specific effects were found for the neutral and disgust conditions. All

results hold if we control for pre-induction emotions. Although we will not report the results, these procedures were equally effective in Experiments 2 and 3.

From a rational perspective, there should have been no carry-over of the incidental emotions induced by the video-watching and essay-writing to the financial decisions. Nonetheless, substantial carry-over occurred. Sad participants were more impatient than neutral participants in their choices, i.e., more willing to forego larger rewards in the future to obtain smaller rewards now. We used maximum-likelihood estimation to fit each participants' choices to an exponential discounting function, $D(t) = \delta^t$, where *smaller* values of δ (the annual discount factor) indicate more impatience.[1,2] Sad participants were more impatient, discounting more (M_δ = .21, $median_\delta$ = .04) than neutral participants did (M_δ = .28, $median_\delta$ = .19; Mann-Whitney Z = 2.04, p = .04).[3] In monetary terms, whereas the median sad participant accepted $37 today rather than wait 3 months to receive $85, the median neutral participant required $56 today. Importantly, disgusted participants (M_δ = .31, $median_\delta$ = .24) discounted about the same as neutral participants did (Z = .46, *ns*) and less than sad participants did (Z = 1.87, p = .06). Thus, sadder was not wiser for these intertemporal choices. Even though the induced sadness was incidental to these decisions, it actually increased preference for immediate rewards whereas disgust did not.

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[1] An annual discount *factor* is how much money received in one year is valued relative to money today and can be between zero and one. Lower discount factors correspond to greater impatience. In contrast, higher discount *rates* correspond to *less* impatience.

[2] We also replicated all results by fitting participants' choices to a hyperbolic discounting function, $D(t) = (1 + \kappa \cdot t)^{-1}$, where larger values of κ indicate more impatience. All results were essentially identical using either discounting function for Experiments 1 and 2.

[3] As discount factor estimates were non-normally distributed, we present non-parametric (Mann-Whitney) tests of mean differences for all relevant analyses. Parametric *t*-tests yielded similar results.

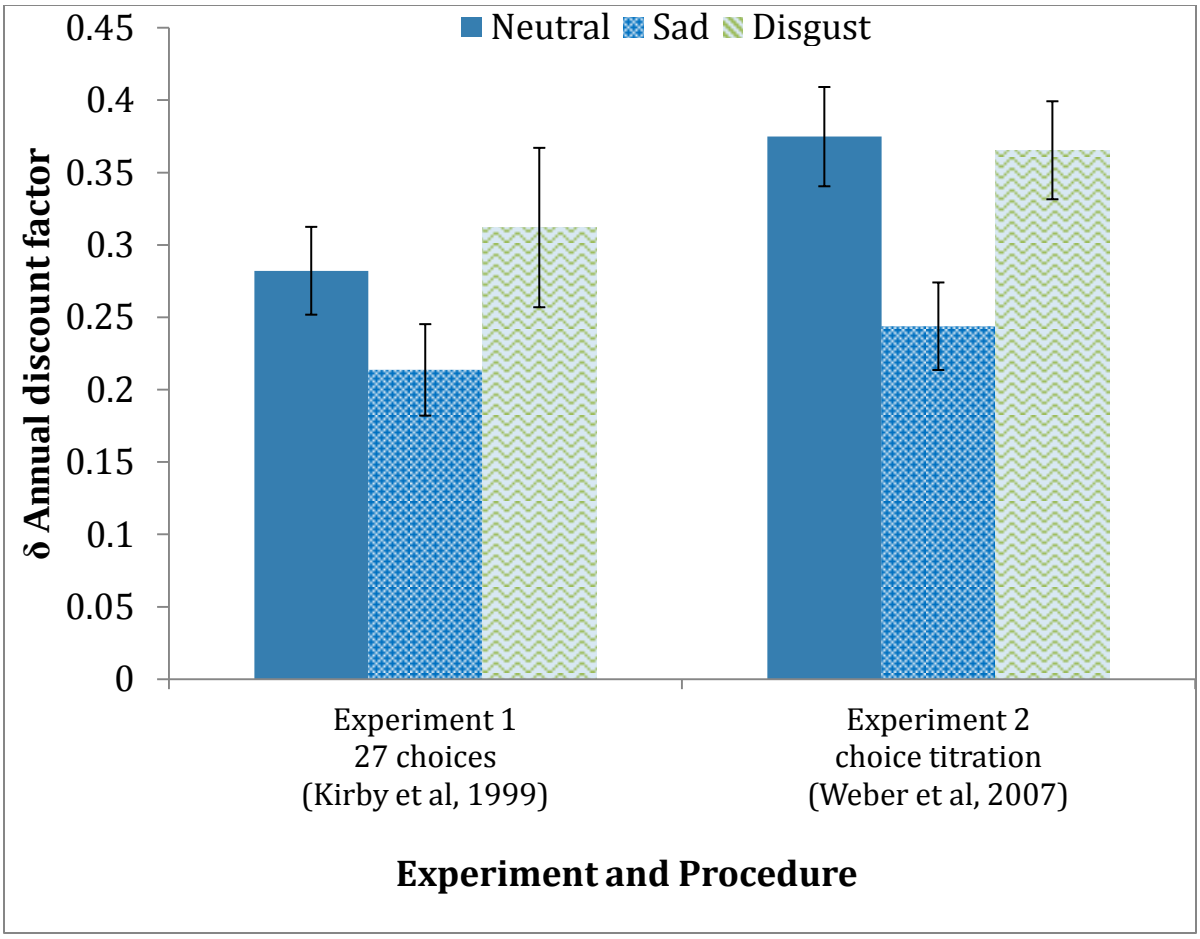


Figure 1. Average patience levels in choices between rewards today or later, as determined by exponential discounting (δ) in experiments 1 and 2. Larger numbers (closer to 1) correspond to greater patience. Error bars represent ±1SEM.

Experiment 2

Experiment 2 addressed two goals. First, it tested the reliability of this effect using a different intertemporal choice task and a web-based, nationwide sample. Second, it applied Query Theory (Johnson, Häubl, & Keinan, 2007; Weber, et al., 2007), a psychological process model of preference construction, to explain how intertemporal decisions are made differently by individuals who feel sad versus disgusted or neutral. Query Theory assumes that people implicitly and sequentially query their knowledge base for arguments that support either of the

two choice options, and that the first query retrieves more support than subsequent queries. Because decision-makers who first think about the earlier option have been shown to be more impatient (Weber, et al., 2007), we hypothesized that sadness would make people more likely to first generate reasons favoring the earlier reward (and thus generate more such reasons), consistent with the notion that sad people seek self-enhancement by acquiring external goods (Cryder, et al., 2008).

Experiment 2 tested this hypothesis on 189 participants (133 females, 56 males; ages ranged from 19-69 years, with a mean of 40) from the Columbia University Center for Decision Sciences Virtual Lab participant pool. After completing the same emotion induction procedure (including pre-induction and post-choice manipulation checks), participants were given a chance to win an Amazon.com gift certificate worth $50 now or a larger amount in 3 months, in addition to a $5 fee for completing the experiment (Weber, et al., 2007). This titration task asked participants to make 11 choices between receiving $50 today or amounts between $55 and $105 (in $5 increments) in 3 months. We calculated discount factors at the implied indifference point midway between where participants preferred the earlier versus later payments. We incentivized participants to express their true preferences by randomly selecting 1 out of every 50 participants to have one of their choices played out for real. All gift certificates were sent electronically.

Before making the actual decisions, participants were first asked to indicate what was going through their mind as they thought about this decision, using an established thought-listing protocol (Weber, et al., 2007). Participants typed their thoughts into a customized interactive web form one thought at a time for as many thoughts as they could think of. Participants had previously practiced listing thoughts this way at the beginning of the experiment. After making

the actual decisions, they were later shown their previously listed thoughts, one at a time, and asked to indicate whether each favored receiving the money now, later, both, or neither.

As in Experiment 1, sad participants were more impatient, requiring more additional compensation to wait for 3 months (M = \$30.72, *median* = \$27.50) than neutral participants (M = \$22.72, *median* = \$17.50, $Z = 2.71$, $p < .01$) or disgusted participants (M = \$22.74, *median* = \$17.50; $Z = 2.65$, $p < .01$). These choices implied steeper discounting for sad ($M_\delta = .24$, $median_\delta = .17$) than neutral ($M_\delta = .37$, $median_\delta = .30$; $Z = 2.71$, $p < .01$) or disgusted participants ($M_\delta = .37$, $median_\delta = .30$; $Z = 2.65$, $p < .01$).

Participants listed between 1 and 23 thoughts ($M = 3.73$, $SD = 2.74$, *median* = 3) about their decisions. Of these thoughts, 40% were patient (e.g., "Up to \$105 would be a really nice gift to receive"); 39% were impatient (e.g., "Extra money for Christmas if I take \$50 now"); and 21% were neither (e.g., "Will I be lucky enough to win"). Sad participants listed more impatient thoughts than either neutral or disgusted participants did ($M_{sad} = 1.73$ vs. $M_{neutral} = 1.22$ and $M_{disgust} = 1.15$, *medians* = 1; Zs = 2.84 and 2.23, $p < .01$ and $p < .05$) but did not list significantly more patient thoughts ($M_{sad} = 1.58$ vs. $M_{neutral} = 1.32$ and $M_{disgust} = 1.37$, *medians* = 1; Zs = .28 and .22, *ns*). We analyzed the ordering of the listed thoughts by calculating the standardized median rank difference (SMRD; Johnson, et al., 2007; Weber, et al., 2007), with scores of +1 corresponding to all "impatient" thoughts coming before all "patient" thoughts and scores of -1 corresponding to the opposite. Sad participants generated impatient thoughts significantly earlier ($M_{SMRD} = .47$, $median_{SMRD} = 1$) than neutral participants ($M_{SMRD} = .03$, $median_{SMRD} = 0$; $Z = 2.65$, $p < .01$) and disgusted participants ($M_{SMRD} = .005$, $median_{SMRD} = 0$; $Z = 2.48$, $p < .05$). SMRD scores fully mediated the difference in discount factors between the sad participants and neutral

participants ($p < .01$, bootstrapped mediation) (Shrout & Bolger, 2002).[4] That is, adding SMRD scores as a control to a linear regression of discount factor on condition (sad vs. neutral) reduced the coefficient on condition to insignificance (standardized *b* from .25 to .11, and *p* from .005 to .14).

Thus, sadness again induced greater impatience: whereas the median sad participant chose a mere $65 today rather than wait 3 months to receive $100, the median neutral or disgusted participant required $74 today. Moreover, Experiment 2 identified a mechanism for how sadness affects impatience: Reasons for the immediate reward came to mind sooner and more frequently when participants had been made sad as opposed to disgusted or neutral.

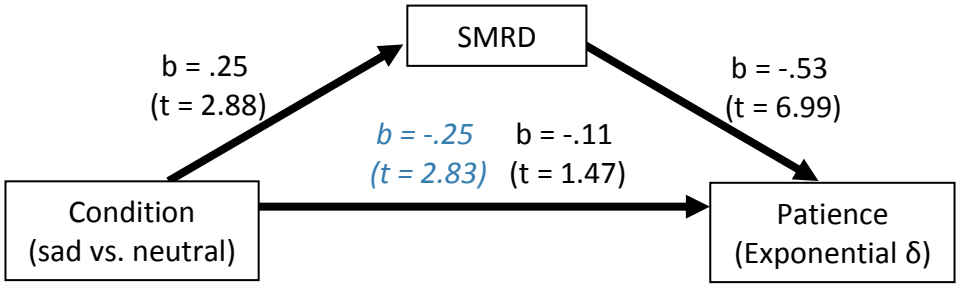


Figure 2. Mediation analysis for Experiment 2, showing that sad participants are less patient because they tend to think of reasons favoring receiving the money sooner before thoughts favoring receiving more money later. SMRD denotes the standardized median rank difference between the order of "patient" and "impatient" thoughts. A SMRD of +1 (-1) corresponds to all impatient (patient) thoughts first.

Experiment 3

Experiment 3 introduced a new question. Does sadness produce a general increase in impatience or is its effect limited to choices offering an immediate payoff? A key innovation in

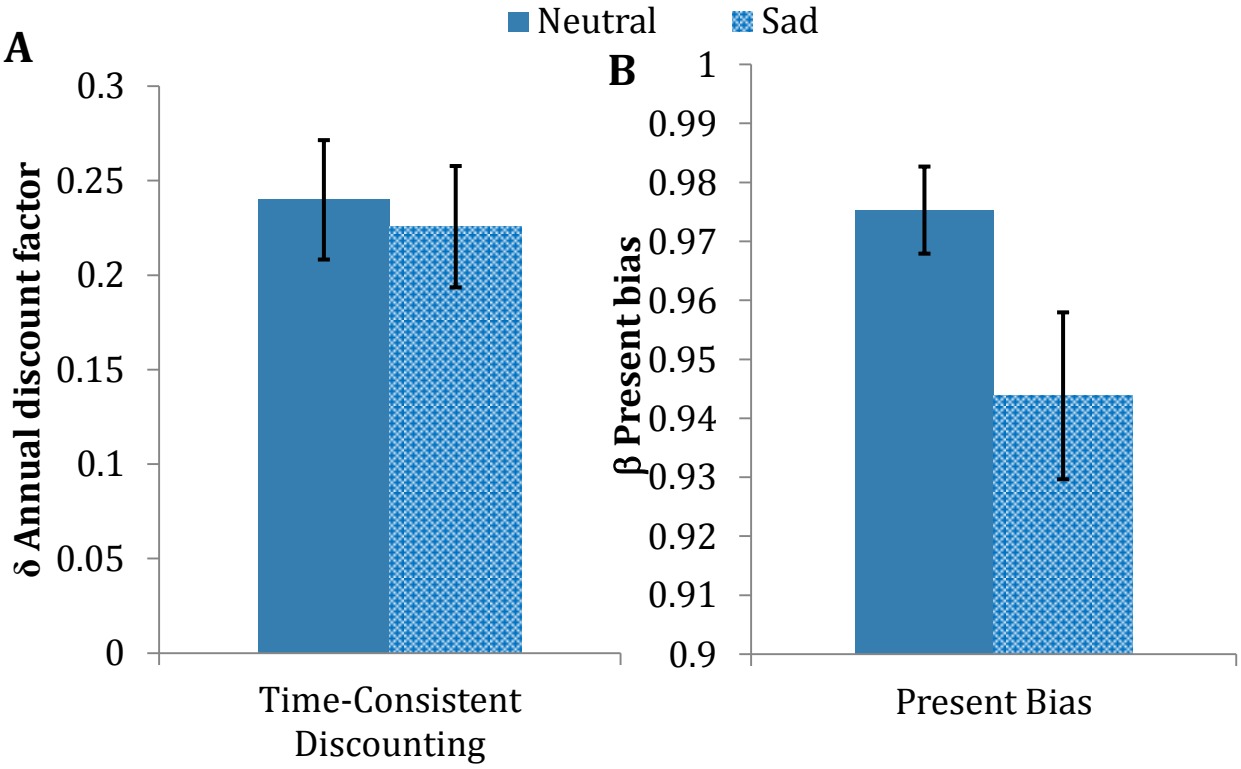
[4] Although we do not manipulate the proposed mediator of thought order, Weber and colleagues (2007) did just that in a nearly identical experimental setup to establish the *causal* relationship between thought order and patience.

modeling discounting distinguishes between two types of processes that are represented in the quasi-hyperbolic discounting function, $D(t) = \beta\delta^t$, for $t > 0$ (Laibson, 1997; O'Donoghue & Rabin, 1999). One process (δ) reflects economically rational—i.e., time-consistent—exponential discounting of rewards that is sensitive to the length of delay, *t*. The other process, "present bias" (β), discounts all future rewards when there is *any* delay (regardless of its length) and therefore cannot be strictly rational. We tentatively hypothesized that sadness would increase the desire to get something *now*, not just sooner, and should therefore increase present bias (β) more so than it increases time-consistent discounting (δ).

In Experiment 3, all procedures other than the intertemporal choice task were the same as in the first two experiments, except that disgust was no longer needed as a comparison. A total of 203 participants in two labs (42 females and 34 males from the Harvard Decision Science Laboratory participant pool, ages ranging from 19-64 years, with a mean of 36; 93 females and 34 males from the Columbia University Center for Decision Sciences Virtual Lab, ages ranging from 19-68 years, with a mean of 39). All participants made choices between (a) immediate rewards versus later rewards; or (b) later rewards versus even later rewards. After the emotion induction, participants made 42 choices (McClure, Laibson, Loewenstein, & Cohen, 2004) between receiving smaller cash amounts (between \$6-\$40) earlier (today, 2 weeks from today, or 4 weeks from today) and larger cash amounts (between \$7-\$57) later (2, 4, or 6 weeks from today). As before, we incentivized participants by randomly selecting a portion of the participants to have one of their choices played out for real.

As predicted, sadness increased choices in favor of immediate rewards but did not impact impatience in choices between later options. We fit each participants' choices to the quasi-hyperbolic discounting function using maximum-likelihood estimation, constraining β and δ

between 0 and 1. A significant portion of participants showed evidence of present bias (47%), with a marginally higher percentage of sad participants having $\beta < 1$ (53%) than neutral participants did (40%, $\chi^2(1) = 3.17$, $p = .08$). Sad participants displayed more present-bias ($M_\beta = .94$, $median_\beta = .999$) than did neutral participants ($M_\beta = .98$, $median_\beta = 1.000$; $Z = 2.07$, $p < .05$), discounting all non-immediate rewards by almost four percentage points more than neutral participants did.[5] In monetary terms, $50 was worth $2 less to the median sad participant if there was *any* delay in receiving it. In contrast, sad ($M_\delta = .23$, $median_\delta = .04$) and neutral ($M_\delta = .24$, $median_\delta = .08$) participants discounted already delayed rewards equally ($Z = .74$, *ns*).



[5] Online participants were less present-biased than the offline participants (ordered logistic regression, $Z = 2.56$, $p < .05$), suggesting that β estimates are potentially negatively biased (cf. Andreoni & Sprenger, 2012). However, there was no interaction between emotion condition and taking the study online ($Z = .10$, *ns*). There was no main or interaction effect of offline versus online on δ (Zs = .31 and .78, respectively, *ns*).

Figure 3. Average patience levels in choices between rewards today and later, or choices between rewards later and even later, as modeled by quasi-hyperbolic discounting (Experiment 3). Closer to 1 is more patient. Error bars represent ±1SEM. (A) Time-consistent (exponential) discounting (δ). (B) Present bias (β), or how much a decision-maker discounts all future rewards when there is *any* delay (regardless of its length). Sadness increases the desire to get something *now*, not just sooner. For both panels, larger numbers are more patient.

General Discussion

The present experiments, conducted with multiple methods and across multiple laboratories, reveal a new phenomenon – myopic misery – as well as mediating mechanisms that explain it. The findings do *not* support the maxim that sadder is wiser, instead supporting the opposite: sadness makes one myopic. Although sadness may make people more accurate in some contexts (Alloy & Abramson, 1979), it also makes them prefer immediate gratification—not an attribute associated with wisdom.

Across three experiments, the median sad participant valued future rewards (i.e., delayed by three months) 13% to 34% less than the median neutral-state participant. These differences emerged even though real money was at stake and even though discount rates in the neutral condition are already high. Moreover, sadness increased present bias. Present bias can be a particularly harmful form of impatience, as evidenced by the life outcomes revealed in Mischel and Ebbesen's marshmallow experiments, described earlier. It is important to note, however, that some sadness effects on delta, and not just on present bias, might have emerged if we had included delays shorter than 2 weeks—a question that future research could explore.

The present experiments reveal theoretical insights into the emotion of sadness. Specifically, having observed increased impatience for sadness—and not for disgust—implies

that motivational properties unique to sadness rather than to negative emotions as a whole (as mood-repair would imply), are at play.

Experiment 2 also provided a window into the thought processes of sad individuals versus neutral individuals. Recall that all participants were asked to indicate what was going through their mind as they thought about the prospective intertemporal decision. The data show that sadness strongly accentuates the prediction of Query Theory that people first generate reasons favoring the immediate reward (and thus generate more such reasons). Sad respondents, in particular, generated a larger number of reasons supporting immediate receipt of the gift certificate early in the thought sequence, many of them describing possible purchases; such reasons fully mediated the relation between sadness and discounting. These results thus reveal the first evidence that sadness triggers an implicit goal to obtain the rewards as soon as possible—even when such urgency comes at financial cost. Thus, we conclude support for a phenomenon of *myopic misery*.

Limitations. We followed a standard behavioral economics procedure to make choices consequential by having one choice for one participant in every session (in the lab, in Experiments 1 and 3) or 1 in every 50 participants (online, in Experiments 2 and 3) play out for real. This probabilistic realization was necessary to work within our research budget, but meant that participants—regardless of condition—could not be sure about receiving each of the rewards they chose. Although the probability of reward is independent of whether one chooses the immediate reward or the future reward, and therefore should not affect differences among the emotion conditions, it is possible that the present results could vary if obtaining the reward were certain. Future (well-funded) research could examine this possibility.

It is also up to future research to test whether even stronger effects on discounting will be obtained when the sadness is *integral* to the financial choices at hand. In the present experiments, sadness was always incidental—i.e., it arose as a temporary state from watching a movie that had no normative relevance to the financial choices at hand.

One may be tempted to view the present experiments as extensions of prior work on sadness and purchase prices, as examined in studies of the endowment effect (Cryder, et al., 2008; Lerner, et al., 2004). But such a view would be inaccurate. Whereas the three present experiments examine choices between getting money now versus later, the endowment studies considered only one moment in time. There is little reason to believe that mechanisms involved in the endowment effect would match mechanisms involved in intertemporal choice. For example, the age of a decision maker affects discounting behavior (Read & Read, 2004) but age does *not* affect the endowment effect (Kovalchik, Camerer, Grether, Plott, & Allman, 2005).

Practical Implications. The results also have implications for the design of public policy. People typically make some of the most consequential choices of their lives while in emotional states. Love drives a decision to propose or accept marriage; anger drives a decision to strike someone; fear drives a decision to abandon one's home amidst disaster. Sometimes a particular emotion holds inextricable links to a particular set of decisions. Consider, for example, the intense sadness one feels after the death of a family member and the numerous financial decisions that must be made to settle that person's estate. The present findings may provide valuable insights for improving such consequential decisions. Our results suggest that such individuals might exacerbate their financial hardship by making intertemporal choices that favor immediate consumption more than is wise. Although the United States' Federal Trade Commission (FTC) has a "cooling-off rule," giving individuals three days to cancel a sale, this

rule exempts real estate, insurance, and securities—exactly the sorts of sales one might engage in after the death of a family member, loss of employment, or a natural disaster. In this and other ways, public policy design and implementation needs to take into consideration the full range of psychological processes through which decisions are made (Thaler & Sunstein, 2008; Weber, et al., 2007). Fully understanding the processes may also help address the economic problems associated with the increasing American reliance on credit cards (Meier & Sprenger, 2010).

Conclusion. These experiments, combining methods from psychology and economics, revealed that sadder is not necessarily wiser when it comes to financial choices. Instead, sadness—but not disgust—made people more myopic, and therefore willing to forego greater future gains for instant gratification. The present experiments involved over 600 subjects across two different laboratories; experimental designs that allow causal conclusions; precise, widely-accepted, and quantifiable normative standards; a comparison negative emotion (disgust); meaningful motivations (i.e., money) for participants to optimize choice outcomes; and a meditational pathway. Given the number of societal problems resulting from a "need-it-now" mentality, these results may inform not only theories of emotion and financial decision making but also the formation of powerful interventions for optimizing decision-making environments (Thaler & Sunstein, 2008).

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