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When the Future Feels Worse Than the Past: A Temporal Inconsistency in Moral Judgment

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Logically, an unethical behavior performed yesterday should also be unethical if performed tomorrow. However, the present studies suggest that the timing of a transgression has a systematic effect on people's beliefs about its moral acceptability. Because people's emotional reactions tend to be more extreme for future events than for past events, and because such emotional reactions often guide moral intuitions, judgments of moral behavior may be more extreme in prospect than in retrospect. In 7 studies, participants judged future bad deeds more negatively, and future good deeds more positively, than equivalent behavior in the equidistant past. In addition, participants thought that future unfair actions deserved more punishment than past unfair actions, and were more willing to sacrifice their own financial gain to be treated fairly in the future compared with in the past. These patterns were explained in part by the stronger emotions that were evoked by thoughts of future events than by thoughts of past events. Taken together, the results suggest that permission for actions with ethical connotations may be harder to get than forgiveness for those same actions, and demonstrate a systematic way in which moral judgments of the same action are inconsistent across time.

Keywords: moral judgment, fairness, time, past and future

> An imagined transgression in the future is deemed worse than a realized transgression in the past.—Participant 82, Experiment 6

People routinely engage in mental time travel, moving beyond thoughts of the present to consider events that have passed and those that are yet to come. The ability to comprehend time—and in particular, the ability to think intelligently about the future—may be one of the few capacities unique to humans (Gilbert, 2006; Roberts, 2002; Suddendorf & Busby, 2003; Tulving, 2002). In particular, recent empirical evidence demonstrates that people respond differently to the same event if the event has already happened in the past than if it is going to happen in the future (for an overview, see Van Boven, Kane, & McGraw, 2009).

In this article, I suggest that the various inherent and perceived differences between the past and the future are likely to render future events more emotionally arousing than equivalent past ones, thereby influencing any judgments or decisions that are affected by emotion. Because perceptions of fairness and morality tend to be based on precisely these types of affective reactions, I predict that such judgments will be relatively more extreme for events set in the future than for events set in the past. I base this prediction on the mechanisms that guide perceptions of time and judgments of morality, which are detailed below.

The Past and the Future

People have markedly different reactions to events that have already happened in the past than to those that are going to happen in the future. Specific brain regions, such as the lateral prefrontal cortex and frontopolar cortex, become more active when people "pre-experience" a future event than when they "re-experience" a past one (Addis, Wong, & Schacter, 2007; Okuda et al., 2003). In particular, people report feeling more intense emotional reactions to the same event when they imagine experiencing it in the future than when they remember having experienced it in the past (Caruso, Gilbert, & Wilson, 2008; D'Argembeau & Linden, 2004; Van Boven & Ashworth, 2007). One series of studies asked people to think about an event in the past or the future and report the intensity of their emotions at the time they were contemplating the event. Whether considering their actual experience of a holiday, a menstrual cycle, or an annoying noise, participants experienced more intense immediate emotion when anticipating these events before they occurred than when remembering these same events after they occurred (Van Boven & Ashworth, 2007).[1]

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[1] Note that the relevant measure of future feelings in those studies (as well as the present ones) is the emotion people experienced at the time of contemplating the event (*anticipatory* emotion), rather than their forecasts about how they will react to the event once it takes place (*anticipated* emotion; see Loewenstein et al., 2001, for further explanation of this distinction). Thus, the dependent measures all capture present reactions to the same events set in either the past or the future.

There are at least two important dimensions on which the past and future differ that could explain why people experience more emotion in anticipation than in retrospection. First, the future is generally more controllable than the past. Events that can be controlled arouse affective responses that allow organisms to exert influence over the events (Frijda, 1988). Even when people do not have the ability to exert any actual influence over an event, nevertheless, they sometimes behave as if they had influence over events outside their control (Langer, 1975). However, even in such cases, people have a strong preference for exerting control over an event before the outcome has been determined (i.e., when the outcome is still in the future). In one study, subjects placed larger bets on a roll of the dice when betting before, rather than after, the toss (Strickland, Lewicke, & Katz, 1966).

Second, the future is generally more uncertain than the past. For emotional events, uncertainty can intensify the unpleasantness of a negative event (Bar-Anan, Wilson, & Gilbert, 2009). For events that have occurred in the past, people can reduce such uncertainty by drawing on the actual details of the experienced events in a way that they can merely simulate for similar future events. As such, evaluations of events in prospect tend to be less constrained by reality, and hence more extreme, than evaluations of events in retrospect (Van Boven et al., 2009). But even when the details of past events are unknown, people may perceive there to be less uncertainty about the event itself because they know that some outcome has already happened. For example, people prefer to watch live television (such as a sporting event) rather than a taped version of the game (even if nothing is known about the game) because the mere indeterminacy of the future creates more excitement and a more enjoyable viewing experience (Vosgerau, Wertenbroch, & Carmon, 2006).

The relative controllability and uncertainty of the future compared with the past may combine to make people's emotional reactions to future events more extreme than their emotional reactions to past ones. Functional theories of emotion suggest that feelings serve as signals about particular states of the world (Frijda, 1986; Lazarus, 1991; Smith & Ellsworth, 1985; Tooby & Cosmides, 1990). Fear, for example, puts the body in a state of readiness to respond to a potentially threatening stimulus (Marks, 1987). Because future events necessarily approach in time and past ones recede in time, such preparatory emotions are more useful for acting on events that are yet to come (a snake you will encounter tomorrow) than for acting on events once they have occurred (a snake you did encounter yesterday).

In addition, such preparation seems more beneficial for actual events that one will experience than for hypothetical events that one might not. Yet in one study, participants even felt more intense emotion when they imagined a hypothetical ski trip that would take place 6 months from now than they did when they imagined having taken the same trip 6 months ago (Van Boven & Ashworth, 2007). These authors suggest that the association between temporal perspective and the way people simulate emotional events may become overgeneralized, such that simply adopting a future perspective produces more intense emotion during anticipation than adopting a past perspective does during retrospection. Whether considering real or imagined events, it seems as if the future looms emotionally larger than the past.

The Reliance on Emotion in Evaluative Judgment

The more intense emotional reaction to the thought of future events has several consequences for how people evaluate events at different points in time. People draw on memories of past events and speculation about future ones as a guide for determining what they should do (Mitchell, Thompson, Peterson, & Cronk, 1997; Soman, 2003; Wirtz, Kruger, Scollon, & Diener, 2003). They also look to the emotion they currently experience as a cue to assess how they feel about the particular event, including how much they value the event they are contemplating (e.g., Bechara & Damasio, 2005; Loewenstein, Weber, Hsee, & Welch, 2001; Schwarz, 1990; Schwarz & Clore, 1988, 1996; Slovic, Finucane, Peters, & MacGregor, 2002). If people use the strength of their current emotions as a cue for the value of an event, they should generally place a higher value on future events than on past ones. A series of studies that assessed the monetary value that participants placed on events set either in the past or the future found support for this hypothesis (Caruso et al., 2008). For instance, when deciding how much to be compensated for helping a neighbor move or how much appreciation to show a friend for the use of his vacation home, participants placed a higher monetary value on the event if they imagined that it was about to happen in the future than if they imagined that it had already happened in the past.

In addition to judgments of value, people rely on their emotions when making judgments about morality. Whereas some contemporary theories focus on cognitive processes of causal rules (Hauser, 2006; Mikhail, 2007) and reasoning (Turiel, 1983) in appraisals of morality, a growing body of research highlights the critical role that emotions play in shaping moral intuitions (Greene, 2008; Haidt, 2001; Nichols, 2002). For instance, when the capacity to experience emotion is impaired, as is the case with psychopaths or patients impaired by frontotemporal dementia, so too is the ability to distinguish moral transgressions from conventional ones or to inhibit the violation of a moral rule (Blair, 1995; Blair, Jones, Clark, & Smith, 1997; Mendez, Anderson, & Shapira, 2005). When a negative emotion is induced experimentally, such as when highly hypnotizable participants are led to associate an arbitrary word with feelings of disgust, stories of moral transgressions containing the word are rated more severely than stories not containing the word (Wheatley & Haidt, 2005).

Neuroimaging data complement the research on behavioral responses to moral transgressions by showing differences in the brain areas that are active when people contemplate moral actions. Moral dilemmas involving personal harm (e.g., pushing one person to his or her death to save five others) produce increased activation in brain regions associated with emotional responses compared with dilemmas involving impersonal harm (e.g., pushing a switch that results in the death of one person to save five others; Greene, Nystrom, Engell, Darley, & Cohen, 2004; Greene, Sommerville, Nystrom, Darley, & Cohen, 2001). In fact, people appear to place a hedonic value on fairness itself, such that they need to actively suppress negative affect when attempting to come to terms with being treated unfairly (Tabibnia, Satpute, & Lieberman, 2008).

These results are consistent with the claim that emotional responses sometimes drive judgments of fairness and morality, whereas moral reasoning is often invoked to rationalize or justify these initial affective intuitions (Greene, 2008; Haidt, 2001). When affective reactions are strong, the resulting moral judgments are

more extreme than when affective reactions are weak, and such reactions can translate directly into people's reports of the appropriate response to a moral situation. In one experiment, the level of outrage that potential jurors expressed toward a defendant's actions predicted the severity of their proposed punishment, with more outrage leading to higher punitive monetary rewards (Kahneman, Schkade, & Sunstein, 1998). Given the prominence of emotion in judgments of morality and fairness, such judgments may be particularly susceptible to changes in the temporal framing of the event in question.

The Present Experiments

The present experiments test the implications of adopting a past or a future temporal perspective on judgments of fairness and morality. If people experience more intense emotion at the thought of a future action than an equivalent past one, and if they base their judgments of fairness in part on the emotion they experience, there may be a general tendency for people to make more extreme moral judgments—that is, to be harsher critics or greater admirers—of the same action if it is yet to happen in the future than if it has already happened in the past. Seven studies document this basic asymmetry for perceptions of both negative and positive actions and show that the inconsistency exists even though participants themselves do not consider it justifiable to evaluate the acceptability of an action differently simply because of its location in time. In the General Discussion section, I consider the implications of adopting a past or a future temporal perspective on judgments of the actions themselves and of the actors who perform them.

Experiment 1: Coke Vending Machine

Experiment 1 tested the proposed temporal asymmetry in judgments of fairness. Consumer products are one area in which people routinely encounter standards of fairness. Customers complain that their cars, coffees, and clothes cost too much, and balk at unanticipated increases to routine expenses. This sensitivity to costs is not indiscriminate, but rather systematic in the types of price-setting practices that people view as acceptable and unacceptable. For instance, customers generally tend to think it is unfair for firms to exploit short-term shifts in demand. When asked to imagine a hardware store that raised the price of snow shovels by 33% the morning after a large snowstorm, 82% of respondents considered this practice "unfair" or "very unfair" (Kahneman, Knetsch, & Thaler, 1986).

As a testament to this finding, in 1999 consumers were outraged by reports that the Coca-Cola Company was developing a vending machine that would automatically raise the prices of drinks in hot weather. Word of this strategy quickly spread and caused such public uproar that the company did not ever implement the idea, which was cited as one of many public relations blunders that resulted in the resignation of then-CEO M. Douglas Ivester (King & Narayandas, 2000). A version of this real-world event was used in Experiment 1 to test people's intuitions about fairness in the past and the future. I predicted that people would judge that the machine was less fair when they imagined it would be tested in the future compared with when they imagined that it had been tested in the past.

Method

Participants. One hundred sixteen participants were approached in undergraduate dining halls at Harvard University and asked to complete a short survey.

Materials and procedure. Participants read a brief scenario that described a new vending machine that the Coca-Cola Company was purportedly developing. They were told that this machine was designed so that the price of the beverages would be positively correlated with the outside temperature, such that on hotter days the machine would automatically raise the price of the drinks (from $1.00 on relatively cold days to $3.50 on relatively hot days).

The temporal location of this event was manipulated between participants. All participants read that the machine had already been developed but that the company had not made a final decision about whether to implement the machine beyond this initial test. Therefore, the only difference between conditions was whether the machine had already been tested or not. Participants in the past condition read, "Last month, the Coca-Cola Company tested this new vending machine . . . ," whereas participants in the future condition read, "Next month, the Coca-Cola Company will test this new vending machine . . . ." To help rule out the possibility that participants would believe they had some actual ability to affect the future test in a way that they could not have affected the past test (by protesting at the site of the machine, for instance), participants in both conditions (who were residents of Cambridge, MA) were told that the machine was (or would be) tested in Austin, Texas.

After reading the description of the machine, participants indicated how fair they thought the machine itself was on a 7-point scale ranging from 0 (*completely unfair*) to 6 (*completely fair*). Participants then turned the page over and rated how cheated, how angry, and how outraged the thought of this machine made them feel *right now* (at the time they were contemplating the machine) on separate 7-point scales ranging from 0 (*not at all*) to 6 (*extremely*). Following these ratings of negative affect, participants were asked to complete the sentence "I think Coke cares more about . . ." by circling a number on a scale ranging from 0 (*just making a profit*) to 6 (*treating its customers fairly*). Finally, participants were asked to rate how believable they found the scenario on a scale ranging from 0 (*not at all*) to 6 (*very*) before indicating their age and gender. The mean level of believability across all participants was 3.11 and did not differ by condition ($t < 1$). Neither age nor gender had an effect on any of the dependent measures.

Results and Discussion

As shown in Table 1, participants in the future condition reported that the machine was less fair than participants in the past condition, $t(114) = -2.32$, $p < .03$. In addition, those in the future condition reported that the thought of the machine made them feel more negative emotion than those in the past condition, $t(114) = 1.99$, $p < .05$. To test the proposed mechanism underlying these past–future asymmetries in fairness estimates, I analyzed participants' ratings of negative emotion. Ratings of how angry, cheated, and outraged participants felt were reliable ($\alpha = .92$), so they were averaged to create an index of negative emotion. I tested mediation

Table 1
Mean Ratings of Negative Emotion and Fairness (Experiments 1, 2, and 4)

	Negative emotion		Fairness	
Experiment	Past	Future	Past	Future
1	1.72 (1.64)	2.33 (1.67)	3.34 (1.76)	2.58 (1.75)
2 (Near)	2.39 (1.75)	3.29 (1.89)	2.56 (1.69)	1.66 (1.29)
2 (Far)	2.83 (1.70)	2.66 (1.77)	2.16 (1.58)	2.31 (1.72)
4			3.00 (1.99)	1.93 (2.19)

Note. For each measure, means for the past and future conditions are different from each other at $p < .05$, except for the Far condition of Experiment 2. Standard deviations are in parentheses.

using the procedure outlined by Baron and Kenny (1986). As noted, the temporal location of the event had a significant effect on the dependent measure of fairness ($\beta = -0.21$), $t(114) = -2.32$, $p < .03$, and on the proposed mediator of negative emotion ($\beta = 0.18$), $t(114) = 1.99$, $p < .05$. When ratings of negative emotion were added to the model, they produced a significant effect on fairness ratings ($\beta = -0.47$), $t(113) = -5.76$, $p < .001$, and the effect of temporal location dropped to nonsignificance ($\beta = -0.13$), $t(113) = -1.52$, $p > .10$. This drop itself approached significance (Sobel $z = -1.89$, $p = .059$).

The temporal location of the event also appeared to have some effect on people's beliefs about Coke's motives. Those in the future condition ($M = 0.63$) reported that Coke was relatively more concerned with just making a profit compared with those in the past condition ($M = 1.02$), although this effect approached significance, $t(114) = 1.79$, $p = .077$. This result may have been weak because of a floor effect. Across both conditions, more than half the participants (53.8%) provided a rating of 0 ("Coke cares more about just making a profit") on this measure.

Experiment 1 provides evidence that concerns about fairness loom larger in prospect than they do in retrospect. When considering a questionably fair marketing practice, participants felt that an identical vending machine was less fair if it was about to be tested in the future than if it had already been tested in the past. This result suggests that beliefs about events can be influenced by the temporal location in which people are considering them.

Moreover, Experiment 1 provides some tentative support for the proposed mechanism underlying this temporal asymmetry. Measures of negative affect were higher when thinking about a future, compared with a past, test of the machine, and the test of mediation produced a marginally significant effect. However, the correlational nature of this mediation analysis cannot establish causality; it is quite possible that differing perceptions of fairness caused the observed differences in emotional reactions, rather than the other way around (a point I return to in the General Discussion section). Therefore, in an attempt to gain corroborating evidence for the proposed role of emotions, I manipulated affective reactions in Experiment 2 and measured people's assessments of a perceived transgression across different points in the past and future.

Experiment 2: Amazon.com Pricing Policy

To induce different affective reactions to the same event, Experiment 2 capitalized on a host of research demonstrating how events that are far from the present evoke less emotion and arousal than those that are near to the present (e.g., Ainslie, 1975; Loewenstein, 1996; McClure, Laibson, Loewenstein, & Cohen, 2004; Trope & Liberman, 2003). Accordingly, if felt emotion underlies the past–future fairness asymmetry, the asymmetry should be weaker for events that are far from the present relative to events that are near to the present. Experiment 2 described an unfair pricing practice whereby Amazon.com would charge its most loyal customers higher prices. I predicted that participants would evaluate the pricing practice more negatively when they imagined it would happen in the near future relative to the near past but that this difference in evaluations would be relatively smaller between evaluations of the far future and far past.

Method

Participants. One hundred seventy-six participants were approached at various public places on the University of Chicago campus and asked to complete a short questionnaire.

Materials and procedure. Participants read that a major news outlet recently discovered the test of a controversial pricing policy by online retailer Amazon.com. The test was grounded in data showing that the base of customers who always shop at one place are willing to pay more for the items they purchase because they are less likely to shop around and are less price sensitive. Therefore, following simple economic logic, Amazon.com decided to test a pricing model whereby they would charge their most loyal customers higher prices without telling them. (In reality, news outlets did report that Amazon.com had tested various models of this kind.)

All participants read the same description of the pricing policy. The time of implementation for this policy was varied in a 2 (temporal frame: past vs. future) $\times$ 2 (temporal distance: near vs. far) between-participants design. The temporal frame manipulation described how a 1-week test of this policy had already been carried out in the past or would be carried out in the future. The temporal distance manipulation described how the timing of the test was either 1 month from the present or 1 year from the present. To reinforce the temporal frame and distance manipulations, participants were asked to write down the date of the test that they had just read about before they completed any of the dependent measures.

Participants next rated how cheated, how angry, and how outraged the thought of the test made them feel *right now* (at the time they were contemplating it) on separate 7-point scales ranging from 0 (*not at all*) to 6 (*extremely*). Following these emotion ratings, participants rated how fair they thought the pricing system was on a 7-point scale ranging from 0 (*completely unfair*) to 6 (*completely fair*). They then indicated how likely it was that they would be negatively affected by this new pricing strategy and how believable they found the scenario on 7-point scales ranging from 0 (*not at all*) to 6 (*very*). Finally, they indicated their age and gender, neither of which had a significant effect on any of the dependent measures.

Results and Discussion

The results from Experiment 2 revealed the predicted Temporal Frame $\times$ Temporal Distance interaction on fairness judgments,

$F(1, 171) = 4.91$, $p < .03$ (see Table 1). Whereas participants thought a near future test was less fair than a near past test, $F(1, 171) = 6.94$, $p < .01$, they did not think a far future test was less fair than a far past test ($F < 1$). A similar interaction was found on judgments of negative emotion, $F(1, 168) = 3.92$, $p < .05$. Whereas a near future test made participants feel more negative than a near past test, $F(1, 168) = 5.35$, $p < .03$, a far future test did not make them feel more negative than a far past test ($F < 1$).

To test the proposed mechanism underlying these past–future asymmetries in fairness estimates, I analyzed participants' ratings of negative emotion. Ratings of how angry, cheated, and outraged participants felt were reliable ($\alpha = .91$), so they were averaged to create an index of negative emotion. As noted, temporal frame and temporal location interacted to affect the dependent measure of fairness ($\beta = 0.17$), $t(171) = 2.22$, $p < .03$, and the proposed mediator of negative emotion ($\beta = -0.15$), $t(168) = -1.98$, $p < .05$. When ratings of negative emotion were added to the model, they produced a significant effect on fairness ratings ($\beta = -0.34$), $t(166) = -4.66$, $p < .001$, and the interaction term dropped to nonsignificance ($\beta = 0.09$), $t(166) = 1.28$, $p > .20$. This drop was itself significant (Sobel $z = -1.99$, $p < .05$).

The significant interaction on fairness judgments does not appear to be explained by differences in the likelihood of being negatively affected by the policy (overall $M = 3.01$) or by differences in how believable the test was (overall $M = 3.18$), as neither of these measures revealed a significant interaction with temporal frame and temporal distance, $F < 1$ and, $F(1, 168) = 1.07$, $p > .30$, respectively.[2] It is noteworthy that explanations based on the notion that the future is more uncertain or more controllable than the past do not seem to be sufficient to produce the past–future asymmetry in fairness judgments observed in this study because far future events are typically more uncertain (more things could happen between now and then) and more controllable (there is more time to plan and mobilize resources) than near future ones. Rather, differences in the negative emotion that participants experienced appear to provide a better account for the differences in fairness ratings in this study. I return to the role of uncertainty and controllability in Experiment 6.

Experiment 3: Late-Night TV Dilemma

Although the first two experiments were based on real-world events, they were described to participants in hypothetical terms. To broaden the scope of the past–future fairness asymmetry to events that would actually be experienced, participants in Experiment 3 were asked to judge the events surrounding a real-world labor dispute in which late-night TV show hosts went back on their word to unionized writers by returning their shows to the air before the resolution of a writers' strike. Participants were informed about the hosts' ultimate decision to go back on the air either the week before or the week after the actual return date. I predicted that, in line with the results from the first two studies, participants would judge the decision to go back on the air as less acceptable when evaluating the decision before it happened compared with after it happened. Furthermore, I tested whether the effects of temporal frame would extend beyond judgments of acceptability to beliefs about the appropriate consequences of the decision. Specifically, I predicted that participants would think that the hosts deserved more severe punishment before the perceived transgression occurred compared with after it occurred.

Method

Participants. One hundred thirty-three people completed this experiment for a chance to win one of two $100 prizes. An advertisement for the study was posted on several public list forums at the University of Chicago, and an e-mail advertisement was sent to an online study pool maintained by the school.

Materials and procedure. Participants read a description, based on actual events, of how writers who worked for network television shows had gone on strike in November 2007 because they felt they were being treated unfairly. Participants were told that the late-night talk show programs had been hit especially hard by the strike and needed to find a resolution to the situation. One option would be to go back on the air without the writers, which would deal a major blow to the writers' cause. Participants were told that most hosts were staunch public supporters of the writers' union, but also felt a responsibility to provide employment for the rest of their staff. Hence, the hosts faced a dilemma about whether to wait for the union to reach an agreement with the TV networks and lay off part of their nonwriting staff or whether to betray the striking writers and go back on the air without them. I chose to focus participants on the blameworthiness of the hosts by highlighting their previous support of the writers. Participants were told that the decision whether or not to return to the air without the writers had to take place in time to go back on the air on January 2.

Participants were asked to evaluate the decision faced by one of two hosts (Conan O'Brien or Jimmy Kimmel). On December 27, 2007 (6 days before the return to the air), the future condition of the survey was administered. Participants in this condition were told that the hosts would betray the writers' union by going back on the air next week. On January 8, 2008 (6 days after the return to the air), the past condition of the survey was administered. Participants in this condition were told that the hosts did betray the writers' union by going back on the air last week. (Both hosts actually did return to the air on January 2.) All participants then rated the extent to which it was (will be) "morally acceptable or unacceptable to go back on the air, rather than support the writers" on a 9-point scale ranging from 0 (*completely unacceptable*) to 8 (*completely acceptable*).

Using 7-point scales ranging from 0 (*completely disagree*) to 6 (*completely agree*), participants then rated the extent to which they agreed that the host "should be punished for his decision" and that the host's decision "makes me less likely to watch his show in the future." Participants then rated how angry, how upset, how sad, and how disgusted the thought of the host's decision made them feel *right now* (at the time they were contemplating the decision) on separate 7-point scales ranging from 0 (*not at all*) to 6 (*extremely*). They then indicated how familiar they were with the situation between the writers' union and the TV networks before reading the scenario, how big a fan they were of the host described in the scenario, their age, and their gender. Participants in the past condition were also asked whether they had taken the other version

[2] Participants who failed to complete these measures were excluded from the analyses.

of this survey. Seven participants had already completed the future version, so their responses to the past version were excluded from all analyses. Participants reported being bigger fans of Conan O'Brien ($M = 3.30$) than of Jimmy Kimmel ($M = 1.70$), $t(131) = 5.40$, $p < .001$; however, none of the results on any of the dependent measures was different between respondents considering Conan O'Brien or Jimmy Kimmel, so the analyses are collapsed across this factor.

Results and Discussion

As shown in Table 2, participants in the future condition thought that the decision to go back on the air was less acceptable than participants in the past condition, $t(131) = -3.57$, $p < .001$. The two measures of punishment (i.e., the extent to which the host should be punished and the extent to which the host's decision would make participants less likely to watch the show) were significantly correlated ($r = .65$, $p < .001$), so they were combined to form a composite measure of punishment. Participants in the future condition were more likely to report that the host should be punished than those in the past condition, $t(131) = 2.30$, $p < .025$.

Once again, the decision to return to the air next week made participants feel worse than the decision to return to the air last week, $t(131) = 2.36$, $p < .02$. In the test for mediation, the temporal location of the event had a significant effect on the dependent measure of acceptability ($\beta = -0.30$), $t(131) = -3.57$, $p < .001$, and on the proposed mediator of negative emotion ($\beta = 0.20$), $t(131) = 2.36$, $p < .02$. When ratings of negative emotion were added to the model, they produced a significant effect on fairness ratings ($\beta = -0.55$), $t(130) = -7.80$, $p < .001$, and the effect of temporal location remained significant ($\beta = -0.19$), $t(130) = -2.64$, $p < .01$. The drop in the effect of temporal location was significant (Sobel $z = -2.26$, $p < .03$). A similar effect was found using the punishment composite as the dependent variable. The temporal location had a significant effect on punishment ratings ($\beta = 0.20$), $t(131) = 2.30$, $p < .025$. When ratings of negative emotion were added to the model, they produced a significant effect on punishment ratings ($\beta = 0.59$), $t(130) = 8.26$, $p < .001$, and the effect of temporal location dropped to nonsignificance ($\beta = 0.08$), $t(130) = 1.09$, $p > .20$. This drop was itself significant (Sobel $z = 2.27$, $p < .025$).

Consistent with the effects from the hypothetical scenarios used in Experiments 1 and 2, the results from a real-world incident involving the breaking of a public promise demonstrated that participants who thought ahead to the transgression before it happened believed it would be less acceptable than those who thought back to that same transgression after it happened. In addition, they stated that the host's decision was more deserving of punishment before it occurred than after it occurred. Both the acceptability and punishment ratings were caused in part by the relatively stronger negative emotions that participants felt when they anticipated the transgression compared with when they remembered it.

The real-world nature of this episode leaves open the possibility of several alternative explanations. For instance, participants may have learned new information between the time the future condition was administered and the time the past condition was administered, so those in the past condition may have simply been more familiar with the situation. However, when asked how familiar they were with the situation, participants in the past condition did not report being more familiar ($M = 2.30$) than participants in the future condition ($M = 2.33$). Of course, the content (and not the sheer amount) of the information to which they were exposed could have been different, as the networks may have spent time and money generating good publicity for the shows as they were preparing to return them to the air. Alternatively, before the shows returned viewers may have anticipated that the shows would be of relatively poor quality without the usual writing staff, but may have learned after the shows did return (perhaps in the course of watching them) that the shows were of better quality than they had anticipated.

In short, there are a number of factors that could contribute to the specific pattern of findings in Experiment 3. Such explanations are consistent with work in affective forecasting that delineates a variety of reasons why people often anticipate that their emotional reactions to real experiences will be stronger than they turn out to be (e.g., Wilson & Gilbert, 2003, 2008). The results of Experiment 3 therefore reinforce those from the first two experiments in demonstrating that the past–future asymmetry is not limited to hypothetical events, and may in fact be more pronounced for real ones (see also Van Boven et al., 2009).

Experiment 4: Two Psychology Studies

The first three studies have demonstrated that people view future transgressions as less fair and less acceptable than identical past ones. In addition, when deciding how much to support a TV show host who treats others (i.e., the writers) unfairly, people reported that they personally would punish the host more (by watching this show less) when the unfair treatment was in the future relative to the past. In Experiments 4 and 5, I investigated whether people would place a financial value on fairness, and whether they would be willing to incur a greater cost to the self in response to being treated unfairly by another in the future compared with the past.

Table 2
Mean Ratings of Negative Emotion, Acceptability, and Intent to Punish (Experiment 3)

	Negative emotion		Acceptability		Intent to punish	
Experiment	Past	Future	Past	Future	Past	Future
3	0.68 (0.94)	1.20 (1.32)	7.21 (1.71)	6.02 (1.90)	0.53 (0.86)	1.03 (1.34)

Note. For each measure, means for the past and future conditions are different from each other at $p < .05$ within each experiment. Standard deviations are in parentheses.

To test this, I had participants evaluate decisions that pit an affective preference against a cognitive one. Much work has been done to understand how people manage the conflict between emotion and reason in choice (Bazerman, Tenbrunsel, & Wade-Benzoni, 1998; Dhar & Wertenbroch, 2000; Hoch & Loewenstein, 1991; O'Connor, De Dreu, Schroth, Barry, Lituchy, & Bazerman, 2002; Shiv & Fedorikhin, 1999). I examined this general class of trade-offs in Experiment 4 by asking people to compare an option that they want to pick with one that they feel they should pick. In particular, previous research has found that people distinguish maximizing absolute gain for the self (what they think they should do) from achieving fair outcomes (what they feel they want to do; Bazerman, Loewenstein, & White, 1992; Bazerman, Schroth, Shah, Diekmann, & Tenbrunsel, 1994). To the extent that the past–future asymmetry is driven by differences in people's affective responses to a situation, the relatively more affective "want" response should carry greater weight when people are considering future decisions compared with past ones.

Method

Participants. Eighty-nine people completed a short online questionnaire.

Materials and procedure. Participants read a brief scenario that asked them to consider two psychology experiments that differed in the amount of compensation they offered (modeled after Blount & Bazerman, 1996). Some were asked to imagine that the experiments had already taken place last week, whereas others were asked to imagine that the experiments would take place next week. Both experiments were described as taking 15 min. In one experiment ("Study 1"), all participants received $3. In the other experiment ("Study 2"), half the participants received $3.25, and the other half received $8 depending on the last digit of their participant identification number. All participants were asked to imagine that the last digit of their identification number placed them in the group receiving $3.25 for Study 2.[3] After reading the description of both experiments, participants rated how fair they thought the compensation for the studies was on a 7-point scale ranging from 0 (*Study 1 much more fair*) to 6 (*Study 2 much more fair*). They then indicated which study they would actually choose to participate in if given the chance.

Results and Discussion

Participants who imagined participating in one of the two experiments next week rated Study 2 as less fair than those who imagined having participated in one of the two experiments last week, $t(87) = 2.42$, $p < .02$ (see Table 1), and were marginally less likely to indicate they would choose to participate in Study 2 (83% vs. 96%; $p = .078$, Fisher exact test). Just as participants in Experiment 1 thought that Coke was relatively more concerned with profit than fairness when considering a future test of the unfair vending machine than a past one, in Experiment 4 the participants themselves seemed to be relatively more concerned with fairness than (their own) profit when considering a future opportunity to make money than a past one.

Experiment 5: The Ultimatum Game

In Experiment 5, participants imagined that either they had played in the past, or would play in the future, an Ultimatum Game in which the other player offered them $1 from a $10 allocation. Previous research has shown that proposers who offer a highly inequitable split of the money are seen as being unjust, and people often believe that the moral solution is to give up their own financial gain to punish this injustice by rejecting the offer (Camerer, 2003; Pillutla & Murnighan, 1996; see also Bies & Tripp, 1996; Hogan & Emler, 1980). Indeed, brain imaging studies confirm that areas associated with emotion show heightened activity when people actually reject unfair offers (Sanfey, Rilling, Aronson, Nystrom, & Cohen, 2003) and that tolerating unfair treatment requires the suppression of negative emotions (Tabibnia et al., 2008). Therefore, Experiment 5 had participants contemplate such an unfair offer and measured judgments of affect, fairness, and intended behavior. I predicted that, relative to a past unfair offer, participants would find a future unfair offer to be more upsetting, less fair, and one that they would be more likely to reject.

Method

Participants. One hundred twenty-one people were approached in a train station in Boston, MA and asked to complete a questionnaire in exchange for a candy bar.

Materials and procedure. Participants read a description of the Ultimatum Game (Güth, Schmittberger, & Schwarze, 1982), in which Player 1 is given a monetary allocation to divide with Player 2 in any way Player 1 sees fit. If Player 2 accepts the offer, the players receive the proposed amounts. If Player 2 rejects the offer, both players receive nothing. Some participants imagined that they had played this game last week and others that they would play this game next week with another randomly selected person in the train station (whose identity they would never know).

After reading the description of the Ultimatum Game in which they were Player 2, participants were asked to decide whether they would accept a $1 offer from Player 1. Following the dichotomous choice of accepting or rejecting, participants indicated the subjective likelihood of accepting or rejecting on a 7-point scale ranging from 0 (*definitely accept the offer*) to 6 (*definitely reject the offer*) and how fair they thought the $1 offer was on a 7-point scale ranging from 0 (*not at all*) to 6 (*extremely*). To test for the role that negative emotions played in their judgments, participants reported how cheated, how outraged, how conflicted, and how angry the thought of the decision made them feel *right now* (at the time of contemplating the decision) on separate 7-point scales ranging from 0 (*not at all*) to 6 (*extremely*). Participants next rated the extent to which they cared about money compared with fairness in this game on a 7-point scale ranging from 0 (*I care more about the money*) to 6 (*I care more about a fair split*). Finally, participants reported how believable they found the scenario on a 7-point scale ranging from 0 (*not at all*) to 6 (*very*) before indicating their gender. Participants in the past and future conditions did not differ in how believable they found the scenario (overall $M = 2.88$; $t < 1$), and gender did not have a significant effect on any of the dependent measures.

[3] A version of this scenario has been previously tested to confirm that the choices create a valid distinction between what participants report they want to do and what they report they should do (see Caruso, Idson, & Bazerman, 2002).

Results and Discussion

Participants reported that the unfair offer in the future made them feel more negative than the unfair offer made in the past, $t(119) = -2.30$, $p < .03$, and rated the future offer as less fair than the past offer, $t(119) = 2.50$, $p < .02$ (see Table 3). These judgments of fairness translated into their intended behavior: Participants reported that they would be more likely to reject a future unfair offer than a past one, $t(119) = -2.60$, $p < .02$.

A series of regressions tested the relationships among emotion, fairness, and behavior as a function of temporal frame. In the first model, I tested ratings of negative emotion as the mediator between temporal frame and subjective likelihood of accepting or rejecting, controlling for ratings of fairness. This model produced an effect for mediation that approached significance (Sobel $z = 1.67$, $p = .094$). In the second model, I tested ratings of fairness as the mediator between temporal frame and subjective likelihood of accepting or rejecting, controlling for ratings of negative emotion. This model produced a significant effect for mediation (Sobel $z = 2.38$, $p < .02$). Because the variables were not manipulated directly, it is impossible to draw definitive conclusions about the direction of causality in the relationships between emotion, fairness, and behavior. However, what appears clear in this experiment is that the thought of receiving an unfair offer in the future creates more negative emotion and the perception that the offer is less fair than the thought of receiving an unfair offer in the past, and that these feelings translate to a greater stated likelihood of rejecting a future offer than a past offer. Consistent with the previous experiments reported here, participants reported caring more about fairness than money in the future condition ($M = 3.70$) than in the past condition ($M = 2.62$), $t(119) = -2.88$, $p < .005$.

I ran a similar study in parallel to Experiment 5 in which participants imagined that they were Player 1 and were asked to predict whether another person would accept a $1 offer. Consistent with the hypothesis that the temporal asymmetry would be more pronounced when people contemplate decisions that they personally face (which are relatively emotional) compared with decisions that another person faces (which are relatively unemotional), participants did not think that another person was any more or less likely to reject their offer in the past ($M = 3.27$) than in the future ($M = 3.24$; $F < 1$). However, during the study debriefing, several participants were adamant that they would never make such a low offer to another person; indeed, participants in Experiment 5 rated the scenario as more believable ($M = 2.88$) than participants in this study ($M = 2.32$), $F(1, 235) = 4.96$, $p < .03$. Therefore, I hesitate to draw strong conclusions from these results and focus instead on the findings from participants who responded how they personally would react to the behavior of someone else. Taken together, the results of Experiments 4 and 5 suggest that concerns over being treated unfairly by another loom larger in prospect than in retrospect. In addition, people not only say they would value fairness more highly in the future than the past, but that they would also *act* differently by being more willing to give up financial gain for themselves in order to be treated fairly in the future relative to the past.

Experiment 6: Coke Redux

Across the first five experiments, the relatively stronger emotional reaction to the thought of a future transgression was one factor that related to the heightened concerns over fairness for future events. As discussed previously, there are a number of reasons why people may experience more intense emotion at the thought of a future event than a past one. For instance, suppose participants in Experiment 1 thought that they had some control over the future test of Coke's vending machine that they did not think they had over the past test. Perhaps they felt they could fly to Texas to protest at the site of the machine or that they could start an online campaign to put pressure on Coke to stop the test. To the extent that such strategies would be more effective at preventing a future test than undoing a past one, it might make perfect sense to mobilize emotional (and perhaps, cognitive and physical) resources to act on this perceived transgression. Alternatively, participants may have inferred that, because the scenarios did not mention any lingering ramifications of the past transgressions, the past acts themselves must have been less extreme than the future ones will be.

In short, the studies reported so far provide no clear evidence that participants did not believe that the past and future scenarios differed in some fundamental way apart from the temporal location of the event in question. However, if they did hold such beliefs, then they should be willing to state that a future test would be justifiably worse than a past test if given the chance to compare the two situations directly. In an effort to determine whether participants thought that a temporal difference in moral judgment was justified, I ran a modified version of Experiment 1 that allowed participants to make just such a direct comparison of the past and the future versions of the scenario.

Method

Participants. Ninety-seven participants were approached at a public cafeteria on the University of Chicago campus and asked to complete a short survey in exchange for a candy bar.

Materials and procedure. All participants read both the past and the future versions of the Coke vending machine scenario used

Table 3
Mean Ratings of Negative Emotion, Fairness, and Likelihood of Rejecting the Offer (Experiment 5)

	Negative emotion		Fairness		Likelihood of rejecting the offer	
Experiment	Past	Future	Past	Future	Past	Future
5	1.32 (1.09)	1.77 (1.06)	1.70 (1.80)	1.03 (1.06)	1.92 (1.92)	2.87 (2.10)

Note. For each measure, means for the past and future conditions are different from each other at $p < .05$ within each experiment. Standard deviations are in parentheses.

in Experiment 1, in different orders. Some participants first read the past version of the scenario and rated the fairness of the machine. They then turned the page and were asked to consider "a slightly different version of the scenario," after which they read the future version of the scenario and rated the fairness of the machine. The other participants read the past and future versions in the opposite order.

This procedure affords a between-participants comparison of the first version read and a within-participants comparison of both versions. Previous research has suggested that a discrepancy between the results of such between-participants and within-participants tests is evidence that people consider the between-participants effects to be unjustifiable. In one study, people were willing to donate more money to save endangered animals than migrant farm workers in a between-participants design, but showed the opposite effect in a within-participants design because the direct comparison made them recognize that it is inconsistent with their values to donate more to save animals than humans (Kahneman & Ritov, 1994; see also Hsee, Loewenstein, Blount, & Bazerman, 1999, for similar demonstrations).

After reading the second version of the scenario, participants indicated (by circling *Yes* or *No*) whether they thought their perception of the fairness of the vending machine "should depend on whether the machine was tested last month or next month." They were then provided with a blank line and asked to explain their answer. Following this question, participants rated which scenario was more believable to them on a scale ranging from −3 (*last month*) to 3 (*next month*), with a midpoint of 0 (*neither*). Participants did not report any significant difference in the relative believability of the past or future scenario (overall $M = 0.20$), $t(96) = 1.17$, $p > .20$, and the order of presentation did not affect perceptions of believability ($t < 1$).

Results and Discussion

Replicating results from Experiment 1, there was a significant between-participants difference in the responses to the first scenario read. Those who read the future condition first reported that the vending machine was less fair than those who read the past condition first, $t(95) = 2.07$, $p < .05$. However, there were no significant within-participant differences in fairness ratings when participants imagined the tests in the past and the future ($t < 1$) (see Table 4). Participants' ratings of the fairness of the first and second scenarios they read matched almost perfectly. The average absolute difference in ratings did not differ from 0 ($M = 0.02$, $t <$ 1), with 85.5% of participants providing the same answer to both questions. These ratings were corroborated by their stated belief about the relevance of the timing of the machine's test. Overall, 86.6% of participants stated that their perception of the machine's fairness should not depend on whether it was tested last month or would be tested next month. Interestingly, one of the participants who stated that the evaluations of the two scenarios should not be different qualified his answer with a descriptive statement that succinctly captures the major finding from the between-participants comparison, which appears as the opening quotation for the present article: "They should not be any different, but somehow an imagined transgression in the future is deemed worse than a realized transgression in the past."

Table 4
Ratings of Fairness (Experiment 6)

	Fairness	
Order	Past	Future
Past event first	**2.73 (1.58)**	2.75 (1.59)
Future event first	2.08 (1.58)	**2.06 (1.60)**

Note. Bold entries indicate the values that constitute the between-participants comparison, in which means for the past and future conditions are different from each other at $p < .05$. Standard deviations are in parentheses.

Without directly comparing the past and future versions of the scenario, participants rated a future test of the vending machine as less fair than a past one. However, when directly comparing the past and future versions, participants rated the tests as equally fair. This discrepancy suggests that participants did not feel it was reasonable to judge the machine differently depending on the timing of its test. Indeed, participants stated explicitly that such a difference in timing should be irrelevant to their evaluations of fairness.

Perhaps the most straightforward explanation for this pattern of results is one of consistency. Classic work in self-perception theory and cognitive dissonance suggests that people learn what their attitudes are by observing their own behavior and inferring what they must believe or changing their attitudes to match their past behavior (Bem, 1967, 1972; Festinger, 1957; Festinger & Carlsmith, 1959). Participants may have responded to the first scenario and made some inference about their beliefs of the appropriate behavior in such situations. When next confronted with a similar scenario, they may have felt foolish or inconsistent behaving any differently than they just did.

There is (at least) one uninteresting account of this process and (at least) one interesting one. The uninteresting account suggests that, when confronted with the second version of the scenario that differed only in its location in time, participants truly did hold different beliefs about it but chose not to indicate those actual differences for fear of looking silly to the experimenter. The interesting account suggests that, when confronted with the second version of the scenario, participants took a hard look at the two versions and concluded that the temporal location of the event per se should not influence a thoughtful assessment of the appropriate behavior, and reflected this genuine belief in their acceptability ratings.

Ultimately, these data do not provide insight into the exact processes that produced this pattern of results. However, it seems reasonable to argue that the latter explanation may be the more likely one. Previous research has shown that people show systematic differences in how they evaluate options in isolation compared with those they evaluate together (O'Connor et al., 2002), and although different theoretical explanations exist (see Bazerman, Moore, Tenbrunsel, & Wade-Benzoni, 1999; Hsee, 1996; Hsee et al., 1999), none of them rests on what is essentially an experimenter demand effect. Rather, assessing options side-by-side seems to afford a direct comparison of the results along dimensions that are deemed appropriate criteria for evaluation. These accounts suggest that participants in Experiment 6 behaved as if they could not find a justifiable difference between the fairness of

the future and past event when given the opportunity to compare them directly. Participants could see that the two scenarios differed only in their location in time, and appeared to have concluded from that information that testing the machine in the future was no more or less acceptable than having testing it in the past.

Experiment 7: Charitable Donations

The first six experiments have focused on negative behaviors, such as violations of fairness norms or perceived transgressions. However, previous work showing that future experiences evoke more intense emotional responses than past ones has found this asymmetry not only for negative events but also for positive events as well. For instance, students in one study reported feeling stronger positive emotions in anticipation of an upcoming holiday than in retrospection about that same holiday (Van Boven & Ashworth, 2007). Therefore, Experiment 7 tested whether people may also have more extreme reactions to future emotional actions that are seen as positive.

Method

Participants. One hundred fifty-nine people completed a short online questionnaire.

Materials and procedure. Participants read about a man making $72,000 a year who decided to make an anonymous donation to aid in the construction of a much-needed homeless shelter in his city. The time and amount of the donation were varied in a 2 (temporal frame: past vs. future) × 2 (donation amount: small vs. large) between-participants design. The temporal frame manipulation described that this man made his donation last month or will make it next month. The donation amount manipulation described his donation as either being $500 or $5,000. I predicted that the larger donation of $5,000 would evoke more emotion than the smaller donation of $500, such that large future donations would be seen as more generous than large past donations, but that this difference would be less pronounced for small donations.

Participants rated how generous they thought the donation was on a 7-point scale ranging from 0 (*not at all generous*) to 6 (*extremely generous*). They then rated "how good the thought of the donation makes them feel *right now*" on a 7-point scale ranging from 0 (*not at all*) to 6 (*extremely*). Finally, they indicated their age and gender, neither of which had a significant effect on any of the dependent measures.

Results and Discussion

The results from Experiment 7 revealed two main effects, whereby (a) large donations were rated as 0.41 scale points more generous than small donations, $F(1, 155) = 7.10$, $p < .01$, and (b) future donations were rated as 0.36 scale points more generous than past donations, $F(1, 155) = 4.21$, $p < .05$. These effects were qualified by the predicted temporal Frame × Donation Amount interaction on generosity judgments, $F(1, 155) = 5.83$, $p < .02$. Whereas participants thought a large future donation ($M = 5.24$) was more generous than a large past donation ($M = 4.55$), $F(1, 155) = 10.29$, $p < .002$, they did not think a small future donation ($M = 4.45$) was more generous than a small past one ($M = 4.51$; $F < 1$). A similar interaction was found on judgments of positive emotion, $F(1, 155) = 4.50$, $p < .04$. Whereas a large future donation ($M = 4.70$) made participants feel better than a large past donation ($M = 4.21$), $F(1, 153) = 3.85$, $p = .051$, a small future donation ($M = 4.24$) did not make them feel better than a small past donation ($M = 4.51$), $F(1, 153) = 1.10$, $p = .30$.

In the test of mediation, temporal frame and donation amount interacted to affect the dependent measure of generosity ($\beta = 0.18$), $t(155) = 2.42$, $p < .02$, and the proposed mediator of positive emotion ($\beta = 0.17$), $t(153) = 2.12$, $p < .04$. When ratings of positive emotion were added to the model, they produced a significant effect on fairness ratings ($\beta = 0.32$), $t(152) = 4.34$, $p < .001$, and the interaction term dropped to nonsignificance ($\beta = 0.11$), $t(152) = 1.53$, $p > .10$. This drop itself approached significance (Sobel $z = 1.91$, $p = .056$). Experiment 7 thus demonstrates a past–future asymmetry for a positive action. A large charitable donation led people to feel better, and to rate the donation as more generous, when it would be made in the future than when it had been made in the past.

General Discussion

Using a diverse array of situations, negative behaviors, and measures of acceptability, the results of the first six studies presented here all point to the same conclusion: People judge transgressions that are about to happen more negatively than identical transgressions that have already happened. In addition, they think that the transgressors deserve more punishment for future violations of fairness than for past ones, and report that they are more willing to make financial sacrifices to prevent future unfairness than past unfairness. A seventh experiment showed that the relative extremity of reactions to future events is not limited to negative behaviors, as participants rated a large future donation to charity as more generous than an equivalent past donation.

Why the Future Is More Evocative Than the Past

I have suggested that this temporal asymmetry in fairness judgments is driven in part by a temporal asymmetry in affective responses to the past and future scenarios, and find evidence consistent with this account when both measuring affect (Experiments 1–3, 5, and 7) and manipulating situations to be more or less affective in nature (Experiments 2, 4, and 7). As discussed previously, this emotion asymmetry would seem to make perfect sense to the extent that the future is more uncertain and more controllable than the past; however, the present studies attempted to minimize any real or perceived differences in the uncertainty or controllability of the events that participants evaluated. If the past and future scenarios were successfully equated on all dimensions other than their temporal location, then the findings raise the question of why the observed asymmetries in emotion and fairness judgments persisted.

I suggest the most compelling possibility is that reactions to future events are overlearned responses to the natural environment. Because a primary function of emotion is to prepare organisms for action (Frijda, 1986), and because organisms can typically act on future events more successfully than past events, the emotional bias toward the future may be an overgeneralized response to future situations even when these situations are not actually under

one's control (Parfit, 1984a, 1984b; Van Boven & Ashworth, 2007). In theorizing about the existence of such a temporal asymmetry, Parfit suggests that the "bias towards the future" is justifiable because

> whether events are in the future in *most* cases corresponds to whether or not we can affect them . . . . If we lacked this bias, we would be as much concerned about past pains and pleasures, which we cannot affect. This would distract our attention from future pains and pleasures, which we can affect. Because we would be distracted in this way, we would be less successful in our attempts to get future pleasures and avoid future pains (Parfit, 1984b, p. 168).

So although more extreme reactions to the future may typically be useful, they may also extend to situations in which the heightened emotions are not. Indeed, participants in Experiment 6 responded as if they agreed that mere temporal distance from the present was not sufficient justification for favoring a past event over a future one when the temporal location was made salient to them.

Why the Past Is Less Evocative Than the Future

The heightened emotion associated with future events may be accompanied by dampened emotion associated with past ones. The emotional impact of a future event typically increases as it approaches the present (McClure et al., 2004). But once the event has occurred, people invoke numerous psychological processes to understand what has happened, and in particular to cope with negative experiences (e.g., Brehm, 1959; Festinger, 1957; see also Wilson & Gilbert, 2008). For instance, when people consider what they believe to be a fait accompli—an event that is outside their control—they experience heightened dissonance and increased motivation to reduce it by changing their beliefs (Brehm, 1959). People are so adept at making sense of emotional events by rationalizing them that once the events have passed, they become ordinary and the emotions associated with them become less extreme (Wilson & Gilbert, 2003). In addition, people typically underestimate their ability to cope with negative events once they are actually experienced (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998), such that the prospect of a negative event in their future turns out to be worse than the experience of that same event once it is in their past (Kermer, Driver-Linn, Wilson, & Gilbert, 2006).

People are remarkably effective at this process of rationalization, and the process itself may be triggered the moment an event is perceived as having happened. When looking back on past events, an action that has transpired

> loses its air of contingency under the impact of now being an accomplished fact, of having become part and parcel of the reality in which we live. The impact of reality is overwhelming to the point that we are unable to "think it away"; the act appears to us now in the guise of necessity (Arendt, 1978, p. 30).

Such attitudes help explain both the hindsight bias, in which people view past events as inevitable (Fischhoff, 1975; Hawkins & Hastie, 1990), as well as the belief in a just world phenomenon, in which people view past events as having unfolded in a way that they ought to have (Lerner, 1980). As such, people incorporate these seemingly inevitable facts about the past into their current conceptions of reality, without ever being aware that their attitudes have been fundamentally shaped simply by the belief (whether accurate or not) that a particular event actually happened at some point in the past (Bargh, 2008). Such processes may contribute to the more general tendency to infer prescriptive statements (what "ought" to be) from descriptive ones (what "is"; Hume, 1739/1969).

It is interesting to note that people's attempts at sense-making are not limited to negative events. For instance, people tend to be happier after receiving an unexpected gift or compliment when there was greater uncertainty about why the positive event happened (Wilson, Centerbar, Kermer, & Gilbert, 2005). In addition, people tend to report more positive feelings toward a pleasurable event when they are primed to feel uncertainty than certainty (Bar-Anan et al., 2009), in part because the certain phrases reduced participants' curiosity about the pleasant event they were experiencing. In essence, people "cope" with positive events by seeking to explain them, such that their affective reactions diminish after the emotional event has occurred (Wilson & Gilbert, 2008). To the extent that positive events (just like negative ones) become ordinary once people have a chance to make sense of them, people may also value past ethical acts less highly than future ones, as shown in Experiment 7.

Limitations and Alternative Accounts

The argument that the temporal asymmetry in fairness judgments is the result of systematically different emotional reactions to past and future events is not the only explanation consistent with the present findings. Although ratings of emotion were shown to be more extreme for the future events than for the past ones, it is still possible that the effects demonstrated are not inherent in the emotional response to the situation, but are instead the result of a systematic difference in how people interpret past and future events. Despite efforts to isolate the temporal location of the event and equate the events on factors such as uncertainty and controllability, such an approach does not rule out all possible differences in people's interpretations of the situations described because so many factors could potentially vary between anticipation and retrospection.

For instance, as mentioned in the introduction to Experiment 6, people may have inferred that a past transgression must not have been very bad if they were not aware of negative consequences that have resulted. Alternatively, in Experiment 4, people may have reasoned that because the past choice of experiment was no longer within their control, they therefore prefer income-maximizing outcomes more than when that same choice is still within their control. In short, the fact that preferences for fairness are based on affect does not necessarily imply that the past–future asymmetry in fairness judgments is also based on affect.

If people's reactions to past and future events are based on different interpretations of fairness rather than on a difference in emotional responses, this would suggest that the different emotional reactions that participants report are not a cause of the difference in their fairness judgments, but rather a result of them. That is, people may think of reasons why a future transgression is worse than a past one, which then makes them feel worse about it. And indeed, when the mediation analyses in the above studies are reversed such that fairness is treated as the mediator and affect as the dependent variable, evidence for mediation is found in every

case. This is not surprising given the strong correlation between affect and fairness in each study (rs range from -0.36 to -0.59, all ps $< .001$), and the fact that fairness was always measured before affect. As such, the correlational nature of these mediation analyses precludes a definitive answer on the causal role of emotions in producing the observed past–future asymmetry. Future studies that directly manipulate emotions independent of temporal perspective would be needed to rule out such alternative explanations and causal processes.

Consequences for Ethical Behavior: "Don't Ask Permission"

Regardless of the specific processes involved, the existence of a systematic difference in people's reactions to past and future events has a number of theoretical and practical implications. When people can readily come to terms with events once they have passed, the perceived negativity of immoral behavior as well as the perceived positivity of moral behavior may both be diminished. The consequences of such perceptions for immoral behavior seem particularly important. For instance, in one study, participants who imagined they were jurors in a civil trial awarded more money to the victim of an accident who was about to suffer for 6 months in the future than to one who had just suffered for 6 months in the past (Caruso et al., 2008). If past harm is indeed seen as less severe than future harm, then one perverse effect is that past injustices will generally be met with less severe punishment than equivalent future ones.

In fact, this notion is partially captured in the popular saying "it is easier to get forgiveness than permission." This sentiment, first attributed to U.S. Naval Officer Grace Hopper and commonly known as Stuart's Law of Retroaction, describes the belief that people are sometimes forgiven for behaviors that they would never have received permission to do in the first place. Children who eat more than their allotted share of M&Ms, teenagers who elope without telling their disapproving parents, and students who skip class without informing anyone after partying too hard the night before all seem to have an intuitive grasp of this phenomenon. Each knows that the parent or teacher will undoubtedly have an extreme negative reaction when considering the action in advance, but may be relatively more understanding some time after the deed has been done. After all, most adults can remember the allure of chocolate and first loves, and many have had nights of youthful indiscretion that resulted in a missed commitment. But because the thought of any of these upcoming actions is likely to elicit stronger negative feelings than the thought of these foregone actions, the change in temporal perspective may be accompanied by a change in evaluative perspective.

Of course, unlike the present studies, the above examples all presuppose that the person from whom permission is requested has the control or authority to prevent the action from happening by forbidding it before it occurs. When being asked for forgiveness, however, the authority figure does not have the ability to prevent the foregone action from having happened. Therefore, the past–future asymmetry documented in the present article does not fully capture the complexities of situations in which control over the requested behavior is present. To gather more direct evidence that people do share the intuition that it is easier to get forgiveness than permission, undergraduates were asked to imagine either that they had missed a class last week or that they would miss a class next week for a dubious reason (Caruso, 2010). Participants reported that they were more likely to get the teacher's forgiveness for having missed the previous class than to get the teacher's permission for missing the next class, and that the teacher's opinion of them would be more negatively affected by the request for permission than the request for forgiveness. In cases such as these, the relatively stricter standards for permission may serve a strategic purpose, as moral disapproval, threats, or explicit laws that sanction unwanted actions may be more effective for deterring future malfeasance than past.

Compensation for Past and Future Harms

Of course, those looking to behave unethically on purpose may take advantage of the knowledge that people tend to forgive past transgressions more leniently than future ones. Insidious individuals, corporations, or governments may decide to engage in risky or unethical behavior without seeking prior approval with the expectation that the consequences will be less severe once their actions have taken place. In some situations, simply gathering information that implies foreknowledge of future negative consequences may cause a company to be viewed less favorably, such as when they make their valuation of a human life explicit in cost–benefit trade-off terms (see Tetlock, Kristel, Elson, Green, & Lerner, 2000). In one analysis, people were willing to impose a more severe punishment on a company that used a cost–benefit analysis when deciding not to spend $100 million on a safety precaution that was expected to save four lives than on a company that imposed a similar risk on customers but had not engaged in the cost–benefit analysis (Viscusi, 2000).

Although premeditated trade-offs of human lives for cost savings seems impermissible, it seems relatively more permissible if companies act without making it clear that they caused harm with foreknowledge. As such, those looking to minimize the repercussions of their transgressions, such as a tobacco company looking to introduce a potentially harmful (but potentially profitable) new product or a government looking to implement questionably ethical (but potentially effective) interrogation tactics may come to the conclusion that it is better to simply engage in the behavior and deal with the consequences after the fact. Although the fallout for any unethical action may be severe, those evaluating the decision once it has passed may judge it relatively less harshly than those contemplating it before it has started. Such differences in emotional reactions to harm are important because people tend to punish such transgressions in proportion to amount of anger they feel when considering them (Kahneman et al., 1998).

Thus, in addition to making people feel better about their own past predicaments, the psychological processes of rationalization and sense-making may allow people to feel better about the negative actions of others, thereby making forgiveness more likely. The drive to forgive past transgressions may be reinforced by cultures and religions that tout the benefits of forgiveness as a supreme virtue; indeed, to forgive is sometimes seen as "divine." Strategies for dealing with past and future harm may therefore affect one's reputation, which, some have argued, plays a key role in the evolution of human morality (Dunbar, 1996; Haidt, 2007). Someone who forgives a transgression may be seen as compassionate in the eyes of others, whereas someone who permits a

transgression may be seen as irresponsible. Furthermore, the ability to forgive another person for past harms can be an effective means of healing relationships (Worthington, 2005), reducing negative emotions (Hodgson & Wertheim, 2007), and promoting physical health (Witvliet, 2001).

Although the ability to cope with negative events and to forgive transgressors can have these positive benefits, it may also entail potentially dangerous consequences. For instance, simply believing that an outcome has already been determined can decrease belief in free will and increase unethical behavior such as cheating (Vohs & Schooler, 2008). When observers offer an explanation for the wrongdoing of another, they become more condoning of the actor's behavior, and come to feel more positively toward the actor, than when they do not attempt to explain the behavior (Miller, Gordon, & Buddie, 1999). The fact that future events are characteristically harder to explain than past ones (e.g., Grant & Tybout, 2008; Wong & Weiner, 1981) may contribute to the tendency to condone past wrongdoing more than future wrongdoing.

Conclusion

Whether evaluating a behavior in terms of moral rules ("Treat others as you wish to be treated") or ultimate consequences (receiving $1 in an Ultimatum Game), assessment of fairness seemingly should not depend on the particular timing of the action per se. Yet in seven studies, participants judged transgressions more harshly, and a virtuous act more favorably, if they thought the events would take place in the future than if they had taken place in the past. These findings call into question the descriptive validity of traditional theories of moral philosophy that extol the virtues of reason and logical consistency in one's ethical beliefs (Kant, 1785/1964) and join contemporary analyses in documenting how moral intuitions are remarkably sensitive to the particular context in which they are elicited (Bartels, 2008; Sinnott-Armstrong, 2008). In addition to shedding new light on the processes of moral psychology, the present findings have practical implications in domains such as law and public policy. On one hand, rationalizing, sense-making, and forgiving past harms can be problematic if they lead people to punish an immoral action less severely simply because it has already occurred. On the other hand, the more extreme reactions to future harms can be problematic if they lead people to punish an immoral action more severely simply because it has not yet occurred. Understanding this fundamental asymmetry between judgments of past and future events should help people become more consistent judges of moral behavior irrespective of its location in time.

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