

SOCIAL COGNITION

VOLUME 21

NUMBER 6

DECEMBER 2003

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"HOW HAPPY WAS I, ANYWAY?" A RETROSPECTIVE IMPACT BIAS

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People often overestimate the impact future events will have on their happiness. People may also show a retrospective impact bias, overestimating the impact of past events on their happiness, explaining why they do not learn from experience and correct their forecasts. We found such a bias for positive events; e.g., supporters of George Bush overestimated how happy they had been when the U. S. presidential election was determined. For negative events, people's recall was related to how much they were still rationalizing the outcome. Gore supporters rationalized the election by changing their views of the candidates. Four months later their positive view of Gore had returned, and they overestimated how unhappy they had been. In Study 2, poor performers on a test rationalized their performance by downplaying the test's validity. Two weeks later they continued to rationalize, and recalled accurately that they had not been very upset by their performance.

Many important decisions are based on affective forecasts, people's predictions about their future feelings. When deciding whether to go on a Caribbean cruise, attend their 25th high school reunion, or eat dinner at the local Mexican restaurant, people are likely to consider the intensity and duration of the pleasure they will derive from these

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events. To the extent that people have experienced similar events in the past, a reasonable strategy would be to use their memories of their past affective experiences to predict their future ones. They could recall how pleasurable the cruise was last year or how much they enjoyed their 20th high school reunion, and base their forecasts on these memories.

In order to learn from past experiences, however, people need to correctly recall their previous feelings. We suggest there is often a retrospective impact bias, whereby people overestimate the intensity and duration of their emotional reactions to past events. If such a bias exists, it would impede people's ability to learn from their emotional experiences and make accurate predictions about their future experiences.

There is a good deal of evidence for an impact bias in predictions about emotional reactions to future events (e.g., Buehler & McFarland, 2001; Crawford, McConnell, Lewis, & Sherman, 2002; Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Loewenstein & Schkade, 1999; Mellers & McGraw, 2001; Rachman, 1994; Robinson & Clore, 2001; Schkade & Kahneman, 1997; Sieff, Dawes, & Loewenstein, 1999; Wilson & Gilbert, 2003; Wilson, Meyers, & Gilbert, 2001; Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000). For example, college football fans overestimated the impact of a win by their favorite team (Wilson et al., 2000), and college students overestimated the impact of receiving an unexpectedly high or low grade on a test (Buehler & McFarland, 2001). The impact bias has been found in a variety of populations (e.g., college students, professors, sports fans, dieters, vacationers, snake phobics, people taking medical tests), with different emotional events (e.g., romantic breakups, personal insults, sports victories, electoral defeats, parachute jumps, failing to lose weight, reading tragic stories, and learning the results of pregnancy and HIV tests; for a review, see Wilson & Gilbert, 2003).

In many of these studies, people predicted the impact of events they had often experienced in the past. The football fans in the Wilson et al. (2000) studies, for example, had watched their favorite team win and lose many previous games, and students in the Buehler and McFarland (2001) studies had taken many previous college tests. It is curious that the impact bias has been found on predictions such as these, given that people could have made accurate forecasts by re-

calling how they had felt in the past. When predicting how they will feel after doing well on a test, for example, college students could recall that after doing well on past tests their pleasure wore off fairly quickly, and predict that is likely to wear off quickly in the future as well. In order for this strategy to work, however, people must recall accurately how they felt when the events occurred before.

THE ACCURACY OF MEMORIES OF PAST EMOTIONAL EXPERIENCES

Whereas memory for emotional experiences is quite accurate in some ways, it is subject to systematic biases. Robinson and Clore (2002) argued that emotional experiences are never stored in memory in a form that can be retrieved directly later. People may have a memory that a colonoscopy was painful, for example, but the pain itself is not stored in memory and then retrieved in its original form. If emotional experiences could be retrieved, there would be no need to go to the trouble to recreate positive experiences such as vacations or roller coaster rides; people could relive them by recalling and "replaying" their past reactions to these events (Robinson & Clore, 2002).

To guide decision making, however, it is not necessary for people to retrieve emotions as they were originally experienced; it is sufficient to recall that an experience was painful or enjoyable, as well as the intensity and duration of these emotions. When deciding whether to take a Caribbean cruise, for example, people do not need to re-experience the emotions they felt on the cruise last year; they can base their decision on the memory that the cruise caused them to feel relaxed and happy.

People often have a high degree of accuracy in recalling the valence of their past emotional experiences; it is rare to remember that an exhilarating experience was painful or that a painful experience was exhilarating (Zajonc, 1980). There is an implicit emotional memory system that encodes whether an event was positive or negative, serving a basic approach-avoidance function when people encounter similar situations in the future (Damasio, 1994; LeDoux, 1996; Mellers, Schwartz, & Ritov, 1999). Often, however, people rely on their explicit memories about how they felt in the past when making

decisions, and it is important to know not only the valence of reactions to a past event ("the Caribbean vacation was positive") but also the intensity and duration of these reactions. Before paying thousands of dollars to go on a cruise again, it is useful to recall accurately whether last year's cruise caused mild pleasantness or intense joy, and know how long these feelings lasted.

It is well known that explicit memory is reconstructive; people's current thoughts and feelings influence their recall of their past thoughts and feelings (Bartlett, 1932; Bem & McConnell, 1970; Gilovich & Medvec, 1995; Goethals & Reckman, 1973; Holmberg & Holmes, 1994; Levine, 1997; Levine & Safer, 2002; Loftus, 1979; Ross, 1989; Ross & Newby-Clark, 1998; Wilson, Houston, & Meyers, 1998). Explicit memory for the intensity of past emotional experiences has been found to be biased in a number of ways (Levine & Safer, 2002). Safer, Levine, and Drapalski (2002), for example, found that the grade students received on an exam influenced their recall of how anxious they had been before the exam. Those who learned they had done well recalled being less anxious than those who learned they had done poorly.

People's recall of the intensity of their past affect is also influenced by their theories and expectations about their emotions. McFarland, Ross, and DeCourville (1989) found that women recalled being in worse moods than they actually were when they had been menstruating, if they held the theory that menstruation altered their moods. Klaaren, Hodges, and Wilson (1994) found that people's recall of how enjoyable a movie had been was influenced by their initial expectations about how enjoyable it would be, independently of its actual quality.

Kahneman and colleagues suggest that people's recall of the intensity of an emotional experience is influenced by the "peaks and endings" of the experience more than its duration. Whereas on-line emotional experience is quite sensitive to time (e.g., whether a colonoscopy lasts for 20 or 30 minutes), retrospective emotion reports are quite insensitive to time. Instead, these reports are influenced by the peak intensity of the experience and the intensity of the emotional experience when it ended (e.g., the highest amount of pain during the colonoscopy and the amount of pain at its conclusion; see Ariely, 1998; Fredrickson & Kahneman, 1993; Kahneman,

Fredrickson, Schreiber, & Redelmeier, 1993; Varey & Kahneman, 1992).

Each of these memory distortions can result in over- or underprediction of the emotional intensity of a past event. In the Safer et al. (2002) study, for example, students underestimated how anxious they had been if they learned they did well on the exam, whereas they overestimated how anxious they had been if they learned they did poorly. Similarly, people will overestimate intensity if they possess theories or expectations suggesting that they were more emotional than they were (as in the McFarland et al., 1989 study), but will underestimate intensity if they possess theories or expectations suggesting that they were less emotional than they were. The peaks-and-endings bias identified by Kahneman and colleagues will often result in overestimation, to the extent that people rely on the peak level of emotional intensity of an event, or on the final intensity of their emotions when the event ended, which happened to be high. Underestimation will result, however, if people rely on the final intensity of an emotional experience, which happened to be lower than average.

MECHANISMS FOR A RETROSPECTIVE IMPACT BIAS

We suggest that there are additional mechanisms that lead solely to the overestimation of the intensity and duration of past emotional experiences. It may be that some of the same factors that produce the impact bias in prospect, when people think about the future, also produce an impact bias in retrospect, when people think about the past.

One cause of the impact bias in prospect is focalism, whereby people think too much about the occurrence in question and fail to consider the consequences of other events that are likely to occur (Schkade & Kahneman, 1998; Wilson et al., 2000). Wilson et al. (2000) found that asking people to think about the other events that would occur in the future reduced the impact bias, by increasing people's recognition that other events would occupy their thoughts and reduce the impact of the focal event. When they think about past events, people might also be subject to the focalism bias, at least to some degree. People might think about

how happy they were in a vacuum, failing to recall that the event occurred in the context of many other life events that competed for their attention and influenced their emotions. Consistent with this view, Mitchell, Thompson, Peterson, & Cronk (1997) and Wirtz, Kruger, Scollon, and Diener (2003) found that people overestimated how enjoyable their vacations had been, and overpredicted their enjoyment in advance.

Mitchell et al. (1997) and Wirtz et al. (2003) examined only positive events, and there is reason to believe that people might reconstruct their reactions to negative events differently. One reason people overestimate the impact of negative events in advance is that they fail to take into account how much their psychological immune system will ameliorate their reactions to the events, a process Gilbert et al. (1998) termed immune neglect. When bad things occur, people work hard to rationalize and reconstrue the event in ways that make it less painful (e.g., Festinger, 1957; Taylor, 1991; Vaillant, 1993; Wells, Hobfoll, & Lavin, 1999). Because psychological coping and rationalization processes occur largely out of awareness, people do not take these processes into account when predicting how a negative event will make them feel in the future (Gilbert et al., 1998). "I will feel awful for days if Sam turns me down for a date," a woman might think, neglecting to consider the extent to which such a rejection would cause her to reconstrue and rationalize the event, ameliorating its impact ("now that I think about it, Sam wasn't nearly as attractive as I thought he was").

The accuracy of people's recall of the intensity of their reactions to negative events depends on the extent to which their rationalization remains in force. If people continue to devalue or minimize the importance of the event, then their reconstructions will color their recollection of how they felt in the past. For example, if Sarah is rebuffed by Sam when she asks him out on a date, and she minimizes the pain of this rejection by derogating Sam, her recall of how badly she felt will depend on her view of Sam at the time she tries to recall her feelings. If she now views him as an undesirable date, she will recall accurately that his rejection was not very painful, because she will be reconstructing her feelings through the lens of the same rationalizations that helped her recover from the rejection at the time. However, she might underestimate how much she feared this

rejection in advance, because her recall of her original affective forecasts are also likely to be influenced by her new view of Sam as undesirable.

Suppose, however, that Sarah's rationalization has faltered; perhaps she encounters Sam at a party and is dazzled again by his wit and charm. If so, she is likely to overestimate how badly she felt when he turned her down for a date, because she reconstructs her feelings through the lens of her current attraction ("I must have been devastated when this great guy turned me down!"). In short, she will show a retrospective impact bias when recalling her reactions to rejection, if her rationalization is no longer in force.

Whether people show a retrospective impact bias for negative events, then, is hypothesized to depend on the persistence of their reconstruction of the event. Because a negative event triggers rationalization processes that ameliorate its painful effects, people should have relatively accurate recall of how happy they were after the event, if their rationalization persists. However, if their rationalization does not persist, as in our example of the reinstatement of Sarah's feelings for Sam when she sees him at the party, then people should show a retrospective impact bias.

Although the experience of a positive event can also trigger psychological processes that normalize it, namely the tendency to make sense of events in ways that make them seem predictable and ordinary (Wilson & Gilbert, 2003), people are not as motivated to reconstrue positive events in ways that ameliorate their impact. Thus, when reconstructing how they felt in the past after a positive event, people are unlikely to have changed their view of the event as much as they have for a rationalized negative occurrence (e.g., Sarah would maintain her positive view of Sam if he had accepted her invitation to dinner, rather than being motivated to reconstrue it negatively). What will happen, then, when people attempt to recall their reactions to positive events? Because of the focalism bias, they are likely to overestimate its impact, at least to some degree (Mitchell et al., 1997; Wirtz et al., 2003). To summarize, people should show a consistent impact bias when recalling how they felt after positive events, but the accuracy of their recall about how they felt after negative events should depend on the extent to which their rationalization of that event is still in force.

We tested these hypotheses in two studies. The first examined people's predicted, actual, and recalled happiness after the 2000 United States presidential election was decided. Right after election day, when the outcome was still in doubt, supporters of George Bush and Al Gore predicted how happy they would be after the outcome was determined. The day after Al Gore conceded the election in December, 2000, participants reported how happy they actually were. Then, 4 months later, participants recalled how happy they had been right after the election was decided.

We predicted that Bush supporters would show an impact bias in prospect and retrospect; as found by Mitchell et al. (1997) and Wirtz et al. (2003), there tends to be a "rosy glow" for positive events when imagining them in the future and recalling them in the past. Gore supporters were expected to engage in rationalization right after the election was decided; that is, they should derogate Gore to some degree in order to ameliorate their unhappiness. Consequently they should not be as unhappy as they predicted, due to immune neglect (the failure to anticipate how much they would rationalize Gore's loss). We predicted that after several weeks had gone by, however, Gore supporters' rationalization of the election would diminish and that they would readopt their previous pro-Gore and anti-Bush views. If so, Gore supporters should overestimate how unhappy they had been right after the outcome of the election was known, because they recalled their past feelings through the lens of their current (positive) feelings.

The second study was designed to test the hypothesis that people's recall of their feelings after negative events will be more accurate if their rationalization persisted. People received negative feedback about their "social aptitude," and then returned to the laboratory 1-3 weeks later. We expected people to rationalize the negative feedback right after receiving it, by derogating the test and the importance of the trait. Further, this rationalization was expected to still be in force at the time of recall, for two reasons. First, people should be more motivated to continue to rationalize a blow to their self-esteem (negative feedback about a personal trait) than to revise their political views about a presidential candidate. Second, the interval between the negative event and the time of recall was much shorter in Study 2 (1-3 weeks) than Study 1 (4 months), thus there was less time for the

rationalization to "wear off." We predicted that this persistent rationalization would reduce the retrospective impact bias for negative events, because people would reconstruct how happy they were through the lens of their view that the test of social aptitude was unimportant.

STUDY 1: THE 2000 PRESIDENTIAL ELECTION

METHOD

Participants were 52 college students who reported that the 2000 presidential election was important to them and that they cared about politics (their average response to these questions was six or above on a 9-point scale) and responded to three email surveys about the election.¹ We assessed people's predictions the day after the election, when the outcome was still in doubt (Time 1). People first rated how happy they had been in the past week, compared to how happy they were on average (1 = below average happiness, 5 = average happiness, 9 = above average happiness). They then predicted, on the same scale, how happy they would be one, two, three, and four days after learning that Al Gore or George Bush "will definitely be the next President of the United States," in counterbalanced order. People also answered 20 attitude questions about the candidates and politics, on a scale that ranged from 1 = strongly disagree to 9 = strongly agree. Five concerned people's opinions of George Bush (e.g., "I trust George Bush"); five concerned their opinions about Al Gore (e.g., "I trust Al Gore"); three concerned the fairness of the 2000 election (e.g., "The election was fair to both candidates"); two were the questions we used to select people who cared about politics ("The outcome of the 2000 presidential election is important to me," "I care about political campaigns and elections"); three concerned people's attitudes about the influence of the president (e.g., "I think the President influences the quality of my life"), and one concerned

1. We initially contacted people several weeks prior to the 2000 presidential election and asked them to predict how happy they would be in the days following the election if George Bush won and if Al Gore won. Because the election was not decided until 5 weeks later, these predictions could not be used.

people's attitude toward Ralph Nader's role in the election ("Ralph Nader influenced the outcome of the election"). Finally, people indicated which candidate (or "neither") best represented their views on 12 issues (e.g., abortion, taxes, gun control), the importance of these 12 issues to them, who they most wanted to see win the election, and whether they voted in the election.

The Supreme Court issued a decision on the Florida election on the evening of December 12, 2000 and Al Gore conceded the election in a speech on the evening of December 13, 2000. We emailed participants on December 14 (Time 2), reminded them that Gore had conceded the previous night, and asked them several questions, including, "In general, how happy would you say you are *today*, compared to how happy you are *on average*?" The response scale was identical to the one on which they had predicted their happiness.² Participants also rated their agreement on the same 20 attitude statements they had answered at Time 1 and rated the importance of the same issues they had rated at Time 1.

In April of 2001, 4 months after the election was decided, we emailed participants the postdiction questionnaire (Time 3). Participants were told that the questionnaire was part of the same election study in which they had participated earlier. After indicating how happy they had been the previous week, they recalled how happy they had been on each of the four days following the outcome of the election. Participants also recalled which candidate they had said at Time 1 best represented their views on each of 12 issues. The order of the happiness recall and issue recall questions was counterbalanced. Initial analyses revealed that the order of these questions had no significant effects on people's responses, thus we collapsed across order in all subsequent analyses. Participants also rated their level of agreement to the same 20 attitude statements they had answered at Times 1 and 2, rated the importance of the same issues they had rated

2. Of the participants who responded, 90% did so on December 14, thus we compared their actual happiness on this day to their predicted and postdicted happiness on the day after the election was decided. Eight percent responded on December 15 and two percent on December 17; we compared their actual happiness to their predicted and postdicted happiness two and four days after the election was decided, respectively. The results change little if we include only those who responded the day after the election.

at Times 1 and 2, and indicated which candidate they had wanted to win the election.

RESULTS AND DISCUSSION

We divided participants into supporters of Bush versus Gore based on their candidate preference ratings at Times 1 and 3 (four participants were eliminated from the analyses because they changed their allegiances over that time period). There were no significant differences in the initial, Time 1 happiness of these groups, $M_s = 5.16$ vs. 5.09 ($SD_s = 1.68, 1.81$), $t(46) < 1$. We thus subtracted people's initial happiness at Time 1 from their predicted, actual, and postdicted happiness ratings, to adjust for individual differences in initial levels of happiness. These three happiness indices were then entered into a 3 (predicted, actual, postdicted happiness) \times 2 (Bush vs. Gore supporter) between-within ANOVA, which revealed a highly significant interaction, $F(2, 45) = 22.19$, $p < .001$. We then decomposed this interaction by looking separately at the accuracy of people's predictions and the accuracy of their recall.

Prediction Impact Bias: Predicted versus Actual Happiness. At Time 2, immediately following the outcome of the election, Bush supporters were happier than Gore supporters, $M_s = 1.04$ versus $-.73$ ($SD_s = 1.67, 2.90$), $t(45) = 2.60$, $p = .01$ (see Figure 1). However, this difference in happiness was not nearly as large as participants had anticipated. At Time 1, Bush supporters significantly overpredicted how happy they would be, $M = 2.80$ ($SD = 1.94$) $F(1, 45) = 26.06$, $p < .0001$, and Gore supporters significantly overpredicted how unhappy they would be, $M_s = -2.64$ ($SD = 1.73$), $F(1, 45) = 17.60$, $p < .001$.

Retrospective Impact Bias: Postdicted versus Actual Happiness. We also found a strong retrospective impact bias (see Figure 1). At Time 3, Bush supporters recalled being happier than they actually were right after the election was decided, $M_s = 2.28$ versus 1.04 ($SD_s = 1.93, 1.67$), $F(1, 45) = 19.36$, $p < .001$, and Gore supporters reported being less happy than they actually were, $M_s = -2.23$ versus $-.73$ ($SD_s = 1.60, 2.90$), $F(1, 45) = 13.49$, $p = .001$. After reversing the sign of the scores for Gore supporters, a 2 (Bush vs. Gore Supporter) \times 2 (Rating: Actual vs. Postdicted) ANOVA revealed only a main effect of Rating, $F(1, 45) =$

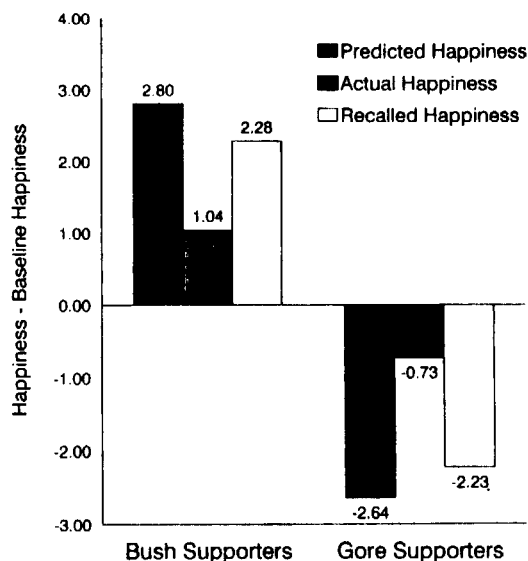


FIGURE 1. Study 1: Predicted, actual, and postdicted happiness following the 2000 Presidential election.

29.94, $p = .001$. The interaction did not approach significance, $F(1, 45) < 1$, indicating that the magnitude of the retrospective bias was not significantly greater for either candidate.

Rationalization: Attitudes Toward Candidates and Issues. We performed principal components factor analyses on the 20 attitude questions participants answered at Times 1–3, with varimax rotations. Though the solutions varied somewhat at the different time points, the first two factors were consistent, namely Attitudes Toward George Bush (five questions about attitudes toward George Bush and three about the fairness of the 2000 election) and Attitudes Toward Al Gore (five questions about attitudes toward Gore). As a measure of the extent to which people might have rationalized the outcome of the election, we created indices based on these factors and then subtracted people's attitude toward Gore from their attitude toward Bush. Thus, positive numbers on this measure reflect a preference for Bush over Gore, whereas negative numbers reflect a preference for Gore over Bush.

Bush supporters changed little on this index over time, whereas Gore supporters showed a marked change at Time 2, right after the election was decided. The mean scores for Bush supporters at Times 1, 2, and 3 were 3.08, 2.67, and 2.78 scale points ($SDs = 1.88, 2.16, 2.14$); these differences were not significant, $F(2, 23) = 1.60, p = .22$. The mean scores for Gore supporters were $-3.78, -2.80$, and -3.68 ($SDs = 1.92, 1.88, 1.68$), $F(2, 20) = 8.76, p = .002$, indicating that they were less supportive of Gore at Time 2 (right after the election had been decided), but at Time 3 had returned to their pre-election level of support for Gore. A full 2 (Candidate supported) \times 3 (Time) ANOVA revealed a significant Candidate \times Time interaction, $F(2, 44) = 8.28, p = .001$.

Similar results were found on participants' ratings of the importance of 12 issues related to the election. Bush supporters changed little over time in how important they thought the issues were; M s at Times 1, 2, and 3 = 6.37, 6.58, 6.56 ($SDs = 1.11, 1.25, .93$), $F(2, 23) = 1.00, ns$. Gore supporters show a drop in perceived importance between Times 1 and 2, but an increase between Times 2 and 3; M s = 7.25, 7.09, 7.47 ($SDs = .80, .86, .68$), $F(2, 20) = 5.61, p = .01$. A full 2 (Candidate supported) \times 3 (Time) ANOVA revealed a marginally significant Candidate \times Time interaction, $F(2, 44) = 2.41, p = .10$.

Predictors of Postdicted Happiness. We hypothesized that when people recalled at Time 3 how happy they had been at Time 2, when the election had just been decided, they would be influenced by their current attitude toward the candidates. To test hypothesis, we regressed people's actual happiness at Time 2, their attitude towards the candidates (Bush – Gore) at Time 3, and their candidate affiliation on their Time 3 recall of their happiness at Time 2. People's actual Time 2 happiness accounted for a significant proportion of the variance of their recall, standardized $\beta = .46, t(45) = 6.72, p = .008$, indicating that people were able to recall or reconstruct how happy they had been, independent of their current attitudes and candidate affiliation. However, their attitudes toward the candidates at Time 3 also accounted for a significant proportion of variance of their recall, $\beta = .32, t(45) = 2.49, p = .02$ (as did, not surprisingly, their candidate affiliation, $\beta = .35, t(45) = 2.69, p = .01$). Thus, as expected, people's current attitude toward the candidates was an independent predictor of their recall about their past happiness.

To summarize, Gore supporters showed signs of rationalization between Times 1 and 2; they became more favorable toward Bush

and less favorable toward Gore and rated issues relevant to the election as less important. Consistent with previous work on immune neglect, the Gore supporters seem not to have anticipated how much they would rationalize, in that they significantly overestimated how unhappy they would be right after the outcome of the election was determined (Gilbert et al., 1998). Bush supporters did not change their attitudes toward the candidates or their perceived importance of the issues. They, too, showed an impact bias, overestimating how happy they would be right after the outcome of the election. In the absence of any rationalization or belief change, this result may have been due to focalism, the tendency for people to focus too much on the occurrence in question at the time they make their predictions, failing to consider how much other events will influence their happiness and demand their attention.

By Time 3 Gore supporters had reverted to their earlier attitudes toward the candidates and their beliefs in the importance of the issues. Given this "undoing" of the rationalization, the results were precisely as we would expect: A retrospective impact bias, whereby Gore supporters overestimated how unhappy they had been right after the outcome of the election was known. Bush supporters showed a retrospective impact bias as well, possibly because of focalism, whereby they overestimated how much the election had been focal in their thoughts.

Why didn't Gore supporters persist in their rationalizations? One possibility is that people's view of Gore mirrored a change in external events; perhaps Al Gore presented himself in a favorable way in the months after the election, leading to a rebound in the way his supporters viewed him. Another possibility is that the rebound was due to the internal psychological dynamics of his supporters. There is evidence that dissonance-induced attitude change fades over time, unless people are reminded of the original, dissonance-producing cognitions (Higgins, Rhodewalt, & Zanna, 1979; Walster & Berscheid, 1968). Although Gore supporters managed to modify their attitudes in a pro-Bush direction right after the election was decided, presumably to ease the pain caused by Gore's defeat, the salience of the election and the Supreme Court decision no doubt faded over time. We preselected people who cared about politics, and by the time of the follow up, it is perhaps not very surprising that the Gore supporters had

shifted back to their pre-election view of the candidates and issues. Regardless of the reason for the rebound in the Gore supporters' view of their candidate, the fact remains that people's view of the candidates at Time 3 was a predictor of their recall of their happiness after the election, consistent with our predictions.

One of the main purposes of Study 2 was to examine the retrospective impact bias in a setting in which rationalization of a negative event would be more likely to persist, to test the hypothesis that a retrospective impact bias for negative events would be reduced under these conditions. That is, if people continue to reconstrue the negative event in a way that reduces its impact, and their recall of their reactions are filtered through this reconstruction, they should recall correctly that the event had a minimal impact. Study 2 was a laboratory study in which people received negative or positive feedback on a test of social aptitude and reported their overall happiness. They returned 1–3 weeks later and recalled how happy they had been after taking the test at the first session. We expected that people who received negative feedback would cope by devaluing the importance of the test and the trait it measured. Further, we expected that this rationalization would still be evident at the time of recall, unlike in Study 1, for two reasons. First, we assessed recall much sooner after the event than in Study 1, making it more likely that people's rationalization would still be in force. Second, the negative event (doing poorly on a test of social aptitude) was more self-relevant and potentially threatening to self-esteem than the election of a president, perhaps motivating people to continue to rationalize their poor performance.

We hypothesized that

- (a) we would replicate the impact bias in prospect, such that forecasters would overestimate the impact of receiving positive or negative feedback on their happiness;
- (b) people who received positive feedback would also show a retrospective impact bias, recalling that they had been happier than they in fact were;
- (c) people who received negative feedback would rationalize their poor performance right after receiving their feedback and when they returned a few weeks later;
- (d) this rationalization would reduce the retrospective impact bias (because people would reconstruct how happy they were through the lens of their view that the test was unimportant); and

- (e) people should underestimate how badly they would have predicted they would feel in advance of receiving the negative feedback, because the imagined forecasts are also influenced by their new, rationalized view of the test as unimportant.

STUDY 2: A TEST OF SOCIAL APTITUDE

METHOD

Participants were 246 undergraduates enrolled in lower-level psychology courses who received course credit for their participation. The procedure was nearly identical to Study 1 in Wilson et al. (2001), in which participants rated their current level of happiness (on the same scale used in Study 1) and then took a fictitious test of social aptitude in which they guessed the emotions displayed in photographs of faces. Participants were told either that they had correctly answered 21 of 40 items and were assigned a grade of "D" (negative feedback) or that they had correctly answered 35 of 40 questions and had received a grade of "A" (positive feedback). After a 5 minute delay, participants rated their current level of happiness on the same scale administered earlier and answered seven questions intended to gauge how much they had rationalized a poor performance on the test, including ratings of the validity of the test and its fairness; and ratings of the importance of doing well on the face reading test, face reading ability, being a good face reader in the work place, being a good face reader when dealing with people, and being a good face reader in friendships.

Participants returned 1–3 weeks later, ostensibly so that we could get more feedback about the test.³ They rated their current level of happiness and their recall of how happy they had been immediately, 5 minutes, and 10 minutes after they received their grade during the first session. Participants were asked to imagine what their predictions would have been, before taking the test, about how happy they

3. Participants received a brief progress report describing the validity of the test of social aptitude they took at the first session, ostensibly to provide them with more information about the test. Some participants were told that the test had been found to be of high validity (e.g., that it correlated with measures of intelligence and social perceptiveness), and others were told that the test had been found to be of low validity (e.g., that it did not correlate with measures of intelligence and social perceptiveness). Because this manipulation had no significant effects on people's subsequent ratings, we will not discuss it further.

would be after receiving different grades. Specifically, they guessed what their predictions would have been about how happy they would be immediately, 5 minutes and 10 minutes after receiving an A, B, C and D on the test. Participants then answered the same rationalization items that they had answered in Session 1. Finally, as a manipulation check, people were asked to recall what grade they had received in the first session; all participants remembered this correctly. The experimenter then carefully debriefed all participants.

In previous pilot studies we have found that asking people to predict their happiness after an event, right before experiencing it, can influence their reported happiness. To avoid this possible contamination, participants were randomly assigned to be either experiencers or forecasters. Experiencers were those just described who took the test, rated their happiness, and recalled their happiness at Time 2. Forecasters received the same description of the test of social aptitude as experiencers, but instead of taking the test, they predicted how happy they would be immediately after, 5 minutes after and 10 minutes after receiving an A, B, C or D.

RESULTS AND DISCUSSION

Positive experiencers were slightly happier at the beginning of the session than negative experiencers were, $M_s = 5.60$ vs. 5.18 ($SD_s = 1.47, 1.56$), $t(168) = 1.83, p = .07$. Forecasters were also slightly happier than experiencers at the beginning of the session, $M_s = 5.91$ vs. 5.40 ($SD_s = 1.45, 1.52$), $t(243) = 2.44, p = .02$. As in previous studies, we controlled for individual differences in happiness by subtracting these baseline levels of happiness from people's later predicted and actual happiness reports.⁴

4. The fact that there were initial differences in happiness is, of course, not ideal. It should be noted, however, that these differences were small in magnitude (.42 points on a 9-point scale between positive and negative experiencers, $d = .28$; .51 scale points between forecasters and experiencers, $d = .31$). Most importantly, these differences do not appear to explain the condition differences to be discussed shortly. For example, predictors overestimated both how happy they would be if they did well on the test and how unhappy they would do if they did poorly; this bidirectional finding cannot be explained by the fact that forecasters were slightly happier initially.

Prediction Impact Bias: Predicted versus Actual Happiness. Five minutes after taking the test, people who received positive feedback were slightly happier than they were at the beginning of the study, whereas people who received negative feedback were slightly less happy, $M_s = .32$ vs. $-.33$ ($SDs = .70, .95$), $t(166) = 5.01$, $p < .001$ (see Figure 2). However, this difference was not nearly as big as forecasters predicted it would be. Forecasters predicted that they would be significantly happier after receiving an A than positive experiencers were, $M = .88$ ($SD = 1.66$), $F(1, 161) = 8.33$, $p < .01$, and that they would be significantly less happy if they received a D than negative experiencers were, $M = -2.39$ ($SD = 1.79$), $F(1, 153) = 81.91$, $p < .0001$.

Retrospective Impact Bias: Postdicted versus Actual Happiness. As hypothesized and as found in Study 1, positive experiencers recalled being happier than they had been 5 minutes after taking the test, $M_s = .61$ vs. $.32$ ($SDs = 1.13, .70$), $F(1, 166) = 6.27$, $p = .01$. As expected, negative experiencers recalled being about as happy as they in fact had been 5 minutes after the test, $M_s = -.43$ vs. $-.33$, ($SDs = .95, 1.55$), $F(1, 166) < 1$, *ns*. A contrast that tested the predicted pattern of means was significant, $F(1, 166) = 7.46$, $p = .007$ (this contrast assigned weights of 1, -1, 0, 0 to the means in the positive-recall, positive-actual, negative-recall, and negative-actual cells, respectively).

Attitudes toward the Test and Its Importance. After taking the test and at the follow-up session participants answered seven rationalization questions, such as ones about the validity of the test and the importance of being a good face reader. Because these items were intercorrelated at both sessions ($\alpha_s = .80$ and $.86$), we averaged them within each session to form rationalization indices. As hypothesized, negative experiencers had lower scores on these indices (indicating that they thought the test was less fair, less important, etc.) at both time points, $M_s = 5.51$ and 5.36 ($SDs = .79, 1.00$), than positive experiencers did, $M_s = 6.95$ and 6.62 ($SDs = 1.09, 1.19$), main effect of Feedback $F(1, 167) = 83.40$, $p < .001$. The main effect of Time was also significant, $F(1, 167) = 17.16$, $p < .001$, reflecting the fact that people in both conditions rated the test more negatively at the second session. The interaction was not significant, $F(1, 167) = 2.52$, $p = .12$. Thus, as in Study 1, negative experiencers showed evidence of rationalization immediately after the emotional event, but unlike Study 1, this rationalization was still in force at the time of recall.

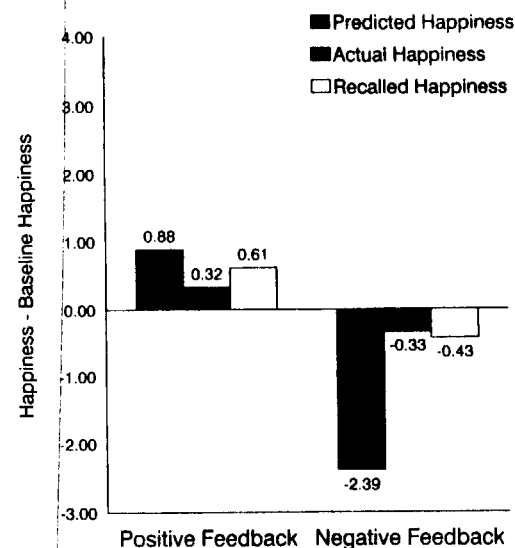


FIGURE 2. Study 2: Predicted, actual, and postdicted happiness after taking a test of social aptitude.

Predictors of Postdicted Happiness. As in Study 1, we examined the relative contributions of three variables on people's recollections of how happy they had been right after the emotional event: their actual reported happiness at Time 2, the valence of the event, and the measure of how much they had rationalized it at Time 3. People's actual happiness accounted for a significant proportion of the variance, $\beta = .66$, $t(165) = 12.93$, $p < .0001$, indicating that people were able to recall or reconstruct how happy they were, independent of their rationalization and the valence of the experience. However, each of these last two factors also accounted for a significant proportion of variance, $\beta_s = .16$ and $.16$, $t_s(165) = 2.84$ and 2.87 , respectively, $p_s = .005$. Thus, as in Study 1, people's current view of the event was an independent predictor of their recall about their past happiness.

Imagined Predictions. At the follow-up session, participants were asked how happy they would have predicted they would be after taking the test, if they had been asked prior to taking it. We compared

these imagined, pre-event predictions to the actual predictions made by forecaster participants. If negative experiencers were reconstructing their pre-event feelings through the lens of their rationalization, then they should underestimate how badly they would have expected to feel in advance. Consistent with this view, negative experiencers' imagined predictions were significantly closer to zero than the actual predictions made by forecasters, $M_s = -.83$ versus -2.39 ($SD_s = 1.71, 1.79$), $F(1, 153) = 31.04$, $p < .001$. Because positive experiencers were not expected to change their view of the test after doing well, they should be more accurate in imagining what their pre-event predictions would have been. They were; imagined predictions for how they would feel if they did well were not significantly different from the actual predictions made by forecasters, $M_s = .97$ versus $.88$, ($SD_s = 1.12, 1.66$), $F(1, 162) < 1$.

GENERAL DISCUSSION

The present studies examined people's predicted, actual, and recalled happiness after emotional events. We strongly replicated the impact bias in prospect; in both studies, people predicted that they would be significantly happier than they were after positive events and significantly less happy than they were after negative events. One reason that the impact bias is so prevalent may be that people fail to learn from experience that the impact of emotional events is not as strong as they anticipated. This would be the case if people made the same mistake in retrospect, recalling that their reactions were stronger than they were.

We found a strong and consistent retrospective bias when people experienced positive events. Participants in Study 1 who supported George Bush recalled being happier than they were when the election was decided, and participants in Study 2 recalled being happier than they were after receiving positive feedback on a test. These results, along with Mitchell et al.'s (1997) and Wirtz et al.'s (2003), provide strong support for the idea that people do not learn from experience that positive events are often less impactful than they anticipated, because they recall them as more impactful than they were. One reason for this, we suggest, is that both affective forecasts and affective recollections are subject to the focalism bias, whereby people

think about the emotional event in isolation and neglect to consider that other events were influencing their feelings and thoughts.

We do not mean to imply that people will always distort their memories of their emotional reactions to positive events. Surely, if very little time has passed, people will be more accurate than in our studies at recalling (or reconstructing) their level of happiness after such things as elections and performances on tests (Robinson & Clore, 2002). Even if people correctly recall that a positive event did not influence them as much as they expected, however, they would still need to satisfy other conditions in order to learn from this experience. When making subsequent affective forecasts, people would also have to satisfy a *mental effort criterion*, whereby they went to the trouble of recruiting memories of their past experiences and comparing them to future experiences, and an *applicability criterion*, whereby they decided which of their many past experiences was most relevant to the future (Higgins, 1996; Koehler, 1996). Wilson et al. (2001) asked people to predict how happy they would be if they did well on tests in the future, right after doing well on very similar tests. People were not as happy as they could have anticipated after doing well on the test, and presumably this experience was fresh in their minds. Nonetheless, they did not go to the effort to apply this knowledge when making affective forecasts. That is, they predicted that they would be very happy after doing well on an identical test in the future, happier than they had just been, and as happy as the predictions of people who had not taken the test. Thus, there are a number of obstacles to learning from our past experience that reactions to future positive events will not impact us as much as we think.

Nor do people appear to learn very well from their negative experiences. We found that the presence of a retrospective impact bias after negative events depended on whether people continued to rationalize the negative outcomes at the time of recall. In Study 1, Gore supporters showed a significant impact bias in retrospect, recalling that they were unhappier than they were right after the election was decided, possibly because they no longer were rationalizing the outcome and had forgotten how much they had done so right after it occurred. That is, they were recalling how unhappy they were through the lens of their current, unrationalized view (e.g., "Gore would have been a much better president; I must have been really

unhappy when I found out that he had lost"). In Study 2, participants who received negative feedback continued to rationalize their poor performance at the time of recall; they rated the test as less fair and important than people who received positive feedback. And, their recall of how happy they had been right after the test seems to have been filtered through this rationalization; they recalled (correctly) that they had not been all that unhappy ("I'm sure I wasn't very upset after learning I did poorly on such a trivial test").

It might seem that if people maintain their rationalization of the event, thereby avoiding a retrospective impact bias, they will learn that future negative events will not make them very unhappy either. There is reason to believe, however, that such learning will be limited. For one thing, participants in Study 2 mistakenly believed that they would have predicted in advance that the negative test feedback would not make them very unhappy, because these imagined predictions were also filtered through their current view of the test as unfair and unimportant. Consequently, they probably never realized that there was a discrepancy between a forecast and an experience, inferring instead that "I would have predicted that doing poorly on this silly test was no big deal and it wasn't." People did not learn that powerful, negative emotional events can have surprisingly little impact, but rather that minor, inconsequential events (their rationalized view of the social aptitude test) had, not surprisingly, a minor impact.

The extent to which people generalize this lesson to forecasts about future events depends on the scope of their rationalization. Wilson et al. (2001) found that people who did poorly on the test of social aptitude generalized broadly, derogating the validity of the test and the importance of social aptitude as a skill. Consequently, they moderated their forecasts about how badly they would feel if they showed poor social aptitude in several future situations, even if these situations were dissimilar to the test they had just taken. In another condition, people were induced to rationalize their poor performance on the test more narrowly, blaming it primarily on the lack of validity of the test. They moderated their forecasts only when asked how they would feel if they did poorly on similar tests in the future, and not when asked how they would feel if they showed poor social aptitude in other situations.

In short, people reconstrued the test without realizing it, and predicted that future events like it would not influence them very much. They did not appear to learn the general lesson that would lead to true learning from experience, namely that powerful negative events can have surprisingly little impact on happiness, because of their ability to transform these events psychologically after they occur.

The two studies reported here differed in a number of ways, which was both a strength and a weakness of the present research. It was a strength to the extent that similar results were found in the two studies. The retrospective impact bias for positive events appear to be robust, for example, occurring in response to quite different events (political elections and performance on a test in a laboratory study). It is reassuring that we replicated this bias in a lab study with random assignment to condition, given that people were not randomly assigned to their political preferences in Study 1. We also found evidence in both studies that people recalled their reactions to negative experiences through the lens of their current beliefs about the events.

The results differed in the persistence of people's rationalizations about negative events; at the time of the follow up in Study 1, Gore supporters had returned to their positive view of their candidate, whereas at the follow-up in Study 2, the negative experiencers were still rationalizing their poor performance. Consistent with our predictions, the absence of continued rationalization seems to have led to a retrospective impact bias in Study 1, whereas the continued rationalization in Study 2 appears to have led to a more accurate recall of people's feelings. The studies differed in many respects, however, and we cannot rule out the possibility that a variable other than the amount of rationalization at the follow-up was responsible for the difference in accuracy in recall across the two studies. A more powerful test of our hypothesis would be to manipulate, in one study, people's tendency to rationalize a negative event at the time they are trying to recall how unhappy it made them, with the hypothesis that the less the rationalization, the larger the retrospective impact bias (overestimating how unhappy it made them). Nonetheless our results, when considered across the two studies, provide initial support for this hypothesis.

Future research should also address the question how easily people can be taught to avoid the impact bias in prospect and retrospect,

and whether it is always advisable for people to do so. As discussed by Gilbert et al. (1998), overestimating the emotional impact of future events might serve a self-regulatory function, motivating people to get out of the bed in the morning and go to work, study for tests, and campaign hard for the political candidates of their choice. There are clear dangers to the impact bias, however, namely becoming too risk averse. People who overestimate how badly they will feel if risky ventures fail, such as asking a very attractive person out on a date, might never pick up the telephone and try, thereby missing out on occasional big successes. Learning to calibrate our affective forecasts will often pay off in wiser decisions about how to act in the future.

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AUTOMATIC NORMATIVE BEHAVIOR IN ENVIRONMENTS: THE MODERATING ROLE OF CONFORMITY IN ACTIVATING SITUATIONAL NORMS

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Previous research (Aarts & Dijksterhuis, 2003) has shown that mental representations of situational norms (e.g., behaving quietly in libraries) and corresponding overt behaviors are capable of being automatically activated. Two experiments extended this line of research by investigating the conditional role of the tendency to conform to social norms in these effects. Participants explored a picture of a library and were given the goal to visit this library or not. Accessibility of representations of normative behavior was assessed in a lexical decision task. In the first experiment, individual differences in conformity to social norms were measured, whereas in the second experiment conformity was primed. Results indicated that the goal to visit the environment caused participants to automatically access representations of normative behavior. Importantly, in both experiments conformity was shown to moderate these accessibility effects: Automatic access to representations of normative behavior emerged when conformity tendencies were active.

A long tradition of research on conformity and social influence indicates that human behavior is guided by social norms (Cialdini &

The work in this paper was supported by NWO grant 452-02-047 ("VIDI"). We would like to thank Robert Cialdini, David Trafimow, Jim Uleman, and several anonymous reviewers for their helpful comments on earlier versions of this paper. Correspondence may be addressed to Henk Aarts, Utrecht University, Department of Social and Organizational Psychology, PO BOX 80140, 3508 TC, Utrecht, The Netherlands; E-mail: h.aarts@fss.uu.nl