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The past is not what it used to be: Optimists' use of retroactive pessimism to diminish the sting of failure

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Abstract

Two studies tested whether optimists regulate moods by making the past seem inevitable in the case of failures. This retroactive pessimism effect on the part of optimists may appear to be particularly ironic and occurred both in response to a variety of imagined situations in comparison with predictions and successes when inevitability was measured on a constrained rating scale (Study 1) and in response to immediately experienced failures on a laboratory task when open-ended probability judgments were assessed (Study 2). The strategy was associated with positive moods for optimists and appears due to a few easily generated external reasons (Study 2). Pessimists did not use this retroactive strategy. Implications for timing of strategies, mental simulations, and hindsight biases are discussed.

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1. Introduction

Optimism and pessimism are fundamental constructs in a variety of theories and research dealing with self-regulation and coping (see Carver & Scheier, 1998; Chang, 2001; Norem, 2001; Peterson & Bossio, 1991; Seligman, 1998, for reviews). Although theories differ in specifics, common is the idea that optimists and pessimists diverge

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in the ways in which they explain and predict life events. Optimists construe their lives positively and expect favorable outcomes, whereas pessimists construe their lives negatively and expect unfavorable outcomes. As just a few examples, optimism's importance is borne out by associations with superior self-regulation on everything from laboratory and academic tasks (e.g., Aspinwall & Brunhart, 1996; Eiser, Pahl, & Prins, 2001) to coping with major health problems such as surgery and cancer (e.g., Scheier et al., 1989; Shepperd, Maroto, & Pbert, 1996a; Tennen & Affleck, 1987).

But how do optimists deal with adversity and maintain their optimism? Of course, there might be many ways. Our research was designed to test one strategy on the part of optimists that may at first appear particularly ironic. *Retroactive pessimism* (Tykocinski, 2001; Tykocinski, Pick, & Kedmi, 2002) may be used by optimists, whereby they distort the past so it seems more inevitable in the case of failures. This effect is related to the hindsight bias (e.g., Christensen-Szalanski & Willham, 1991; Fischhoff, 1975) and our proposal follows from findings that optimists' use retrospective mental simulation strategies (e.g., Sanna, 2000; Sanna, Stocker, & Clarke, in press). In Study 1, we examine our ideas across a variety of diverse situations and in Study 2 we test possible mechanisms that may underlie optimists' strategy. Together, the two studies are firmly grounded at the intersection of personality and social cognition.

2. Hindsight bias and retroactive pessimism

Documented initially by Fischhoff (1975) and Fischhoff and Beyth (1975), the hindsight bias suggests that once event outcomes are known, people view events as relatively inevitable (see Christensen-Szalanski & Willham, 1991; Hawkins & Hastie, 1990, for reviews). It is typically discussed with a cognitive emphasis, such as updating mental models, elaborating causal linkages, and deemphasizing information (e.g., Wasserman, Lampert, & Hastie, 1991). When later reporting expectations they had prior to knowing outcomes, people draw on updated models and rejudge events, resulting in the hindsight bias. The bias may be decreased by thinking about alternatives that discount the known outcome (e.g., Fischhoff, 1982). For people who can easily simulate alternatives, the hindsight bias is reduced, but when alternatives are not thought of easily, the hindsight bias can be increased (Sanna, Schwarz, & Stocker, 2002).

Another important way that simulated alternatives (or lack thereof) relate to the hindsight bias is through retroactive pessimism (Tykocinski, 2001; Tykocinski et al., 2002). People may make the past seem more inevitable after failures by reducing consideration of more positive alternatives. Retroactive pessimism was first demonstrated by Tykocinski and colleagues; the effect was greatest with larger losses, when particular outcomes were desired, for the self than others, and when disappointments were not otherwise mitigated, suggestive of a self-serving, defensive, motivation (Tykocinski, 2001; Tykocinski et al., 2002). In essence, because considering better alternatives amplifies negative emotions (e.g., Kahneman & Miller, 1986; Sanna & Turley-Ames, 2000), distorting events in hindsight so they are perceived as

more inevitable (i.e., less mutable) produces the opposite effect. That is, *not* thinking about better alternatives to failed outcomes seems to decrease the negative emotional impact.

3. Optimists use of retrospective strategies

That retroactive pessimism (Tykocinski, 2001; Tykocinski et al., 2002) might be used by optimists may at first appear to be particularly ironic. However, because optimists use other retrospective strategies, particularly after failures, distorting probabilities in hindsight may be yet another tactic in their self-regulatory arsenal. When bad things happen to optimists, they are more apt than pessimists to use a variety of other self-serving (e.g., Snyder, Stephan, & Rosenfield, 1978) processes to reframe obtained negative outcomes in a more positive light (e.g., Helweg-Larsen & Shepperd, 2001; King, Rowe, Kimble, & Zerwic, 1998; Norem & Illingworth, 1993). As part of this strategy, optimists use retrospective mental simulations such as counterfactuals (Sanna, 2000; Sanna et al., in press), suggesting that they may also be most prone to use retroactive pessimism if it is similarly based on mentally considering alternatives.

But what mechanisms underlie this effect? One way that optimists might eliminate considering better alternatives is by generating reasons supporting the known outcome. By generating reasons favoring known outcomes, the past may seem more inevitable. However, if optimists thought only that the past was inevitable, this probably would not in and of itself be very consoling. It is likely that this strategy would be most effective in repairing good moods, diminishing the sting of failure, when reasons generated for outcomes focus on external but not internal factors (e.g., Peterson & Bossio, 1991; Seligman, 1998). That is, people blame themselves when causes for failures are attributed internally (i.e., to themselves) but feel better when causes are attributed externally (i.e., to the situation). External reasons supporting failed outcomes not only may make the past seem inevitable *but also* allow one to deny culpability.

4. The present research

Two studies tested our hypotheses, with two main objectives. First, we tested whether retroactive pessimism is used by optimists, and, second, we tested whether generating external versus internal reasons provides a mechanism for this effect. In Study 1, we used the Simulated Situations Task (SST; Dykman, 1996, 1997), modified to include positive and negative events within the same scenario (Sanna, Turley-Ames, & Meier, 1999). By assessing reactions to several events, we tested the generality, or possible limitations, of our ideas. In Study 2, we used the Remote Associates Test (RAT; McFarlin & Blascovich, 1984), after which optimists and pessimists experienced an immediate failure for themselves. Also in Study 2, most importantly, we attempted to enlighten the mechanisms behind optimists' hindsight strategies after

failures by manipulating numbers and locus of reasons, and we measured participants' moods.

Optimists can think about many reasons for inevitability, or only a few. It may seem that thinking about many would be a better strategy. However, potential limits of this are apparent when the distinction between *accessible content* (e.g., the topic of the reasons) and *accessibility experiences* (e.g., the ease with which reasons are brought to mind) is considered (e.g., Schwarz, 1998; Schwarz et al., 1991). Schwarz et al. (1991) observed, for example, that participants rated themselves *less* assertive after they had to recall 12 examples of assertive behavior (experienced as difficult) rather than only six examples (experienced as easy), even though the former task brought twice as many examples to mind. Finding it difficult to generate many reasons or recall examples, people conclude that there cannot be many reasons (or examples) or else it would not be so difficult to bring them to mind, leading to effects opposite of thought content.

If optimists relied on generating many external reasons for failures, following a similar logic, they may in fact find such factors *less* plausible explanations for events. In short, judgments are consistent with the content that comes to mind only when information comes to mind easily, but when recall or generation is difficult, judgments are opposite to the implications of accessible content (e.g., Schwarz et al., 1991). We thus tested whether generating many versus few external or internal reasons can provide a mechanism for retroactive pessimism on the part of optimists in Study 2. In both studies, optimism and pessimism was measured with the Revised Life Orientation Test (LOT-R; Scheier, Carver, & Bridges, 1994). In short, a consistent pattern of findings across the two studies, using diverse methods and measures, would provide robust support for our hypotheses and the underlying theoretical rationale.

5. Study 1: Reactions to a variety of events

We initially assessed reactions of optimists and pessimists to a variety of events using the SST (Dykman, 1996, 1997), modified to include positive and negative events (Sanna et al., 1999). Optimism and pessimism was measured using the LOT-R (Scheier et al., 1994). The design of Study 1 was a 2 (optimism: optimist, pessimist) \times 3 (outcomes: prediction, failure, success) between-subjects factorial. We anticipated that optimists would view failures as more inevitable when those outcomes were known in comparison with when outcomes were unknown and they made predictions. For comparison purposes and to assess possible alternative patterns of results, we tested optimists' reactions to successes, and the reactions of pessimists.

5.1. Method

5.1.1. Participants

Participants were 77 introductory psychology students who received extra course credit and who were recruited on the basis of their LOT-R scores. Approximately

equal numbers of males and females were recruited from both optimistic and pessimistic groups,¹ and were approximately equally distributed among outcome conditions.

5.1.2. Optimism

Optimism was assessed using the LOT-R (Scheier et al., 1994), a revision of the Life Orientation Test (LOT; Scheier & Carver, 1985). The LOT-R is a 10-item scale that includes three positive items (e.g., “I’m always optimistic about my future”) and three negative items (e.g., “If something can go wrong for me, it will”). Four filler items are not used in scoring. Responses are made using the following options: 0 = *strongly disagree*, 1 = *disagree*, 2 = *neutral*, 3 = *agree*, and 4 = *strongly agree*. Negative items are reverse scored and summed with positive items, and the scale has strong predictive and discriminative validity (Scheier et al., 1994). We administered the LOT-R to 321 students at the beginning of the semester as part of a mass survey session. Participants were selected from the upper (optimist) and lower (pessimist) thirds of the distribution. Thirty-nine participants were classified as optimists ($M = 18.63$; $SD = 2.90$) and 38 participants were classified as pessimists ($M = 8.92$; $SD = 2.81$).

5.1.3. Procedure

Participants were tested in laboratory groups of 4–8. A cover story indicated the study involved several procedures being tested for use in future research. The experimenter who tested participants was unaware of their optimism level. In fact, the sessions were actually run by other researchers. Our SST was included along with other activities not pertinent to our study.

SST. Participants were told that the researchers were interested in “people’s assessments of different situations,” and they would read about situations and give their impressions of the depicted events. Six situation descriptions were used, which were modified from the SST (Dykman, 1996, 1997) to include positive and negative events within a single scenario (Sanna et al., 1999). For example, one description about a job as a lab assistant, read as follows:

You take a summer job as a lab assistant. The job involves duties such as washing glassware, taking care of expensive equipment, and preparing delicate chemical mixtures that will later be used in important experiments. The work turns out to be very interesting. Some things go well and some things go poorly. For example, while on the job, you were able to catch a calibration mistake that someone else had made. You also make some important contributions to an experimental design, and you came up with good ideas for some new experiments. However, you also broke a necessary piece of equipment which ruined some experiments. In addition, you made some mistakes in mixing chemicals, and you did not always completely follow instructions.

¹ Participants’ sex was included as an additional variable in analyses for exploratory purposes, but it did not significantly influence our results in either study. We therefore do not further discuss the sex of participants in this article.

The five remaining scenarios involved meeting strangers at a wedding, interacting on a first date, making a class presentation, interviewing for a job, and taking a class exam. The six scenarios were presented to participants in random order. Participants were asked to read each description and to vividly imagine the event as if it were happening to them.

Outcomes and inevitability judgments. There were three outcome conditions. In the *prediction* condition, outcome information was not provided. Participants read each scenario and were asked to: “Estimate the inevitability that the overall outcome will ultimately turn out to be a success or failure.” In the *failure* and *success* conditions, participants were provided with a final sentence at the end of each scenario that read: “Ultimately, your overall performance is a big [failure, success, respectively].” Also in these conditions, to solicit judgments in hindsight, inevitability ratings were made after reading the following: “If we hadn’t already told you had [failed, succeeded, respectively], what would you have estimated the inevitability that the overall outcome would ultimately turn out to be a [failure, success, respectively]?”

All participants made ratings on 11-point scales, anchored by 0 = *success inevitable* and 10 = *failure inevitable*. Participants made these after each SST scenario. Although the six SST scenarios were presented in random order, outcomes were varied between-subjects.

5.2. Results and discussion

We conducted a $2 \times 3 \times 6$ mixed analysis of variance (ANOVA) on inevitability judgments. Optimism and outcomes were between-subjects variables and the SSTs were a within-subjects variable. There was an optimism main effect, $F(1, 71) = 6.27, p < .05, \eta^2 = .08$, qualified by an Optimism \times Outcome interaction, $F(2, 71) = 3.46, p < .05, \eta^2 = .05$. Mean inevitability judgments averaged across the six SSTs are depicted in Fig. 1. There was no main effect or interactions involving SST scenario, all $F(5 \text{ or } 10, 71)s < 1.07, ps > .20, \eta^2s < .01$. Contrasts within the ANOVA (Rosenthal & Rosnow, 1985) were used to compare means.

The most important comparisons for assessing our hypotheses involve those with the no-outcome, prediction conditions. As anticipated, optimists’ viewed their results as more inevitable when failure outcomes were provided ($M = 6.93, SD = 1.75$) than when outcomes were not provided and they simply made predictions ($M = 5.24, SD = 1.73$), $t(71) = 2.49, p < .05, \eta^2 = .08$. Optimists’ predictions did not differ from those provided with success information ($M = 5.74, SD = 1.73$); there was a nonsignificant tendency suggesting that failure and success outcomes differed for optimists, $t(71) = 1.71, p = .11, \eta^2 = .04$. In contrast, pessimists’ predictions ($M = 4.91, SD = 1.82$) did not differ from either the failure ($M = 4.43, SD = 1.80$) or success ($M = 5.55, SD = 1.75$) outcome conditions, $t(71)s < .93, ps > .30, \eta^2s < .01$. Within the failure condition, optimists’ and pessimists’ judgments differed, $t(71) = 3.68, p < .01, \eta^2 < .16$.

In short, optimists’ viewed their failures as inevitable once these outcomes were known in comparison with predictions, but this was not the case for successes. Neither pessimists’ failures nor successes were viewed as inevitable in comparison with

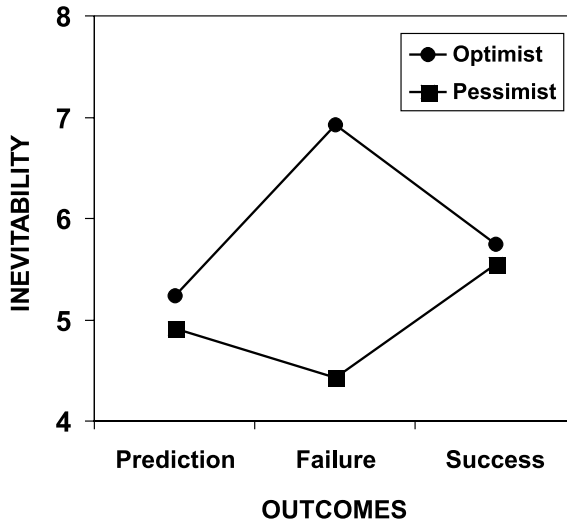


Fig. 1. Interaction of optimism and pessimism with outcomes on mean inevitability ratings for Study 1.

predictions. These results reveal a qualification to the usual hindsight effect (e.g., Fischhoff, 1975), while also suggesting that retroactive pessimism (Tykocinski, 2001; Tykocinski et al., 2002) is used strategically by optimists but not pessimists. Our findings generalized across a variety of events—there were no differences across the six SST scenarios. Retroactive pessimism on the part of optimists may at first seem ironic and even counterproductive but makes sense if optimists diminish the sting of failure and repair negative moods by eliminating the consideration of better alternatives.

6. Study 2: Numbers and locus of reasons

Study 2 extended Study 1 in several ways. The SST has been used to assess reactions in a variety of settings and provides information about the generality of our effects, but it can be limited by relying on people's ability to imagine themselves in the depicted situations. In Study 2, we used the RAT (McFarlin & Blascovich, 1984), and participants experienced an immediate outcome for themselves before responding. Also in Study 2, we measured moods and utilized an open-ended probability measure rather than the more constrained inevitability rating scale used in Study 1. This allows us to more directly examine the idea that hindsight judgments are related to moods, and provides greater generality with yet another measure of hindsight.

Most importantly, Study 2 attempts to enlighten further the mechanisms underlying optimists' hindsight strategies after failures. As we described, optimists' strategy might involve thinking about many or few external reasons supporting the

outcome. To test this, locus (e.g., Peterson & Bossio, 1991; Seligman, 1998) and numbers (e.g., Schwarz, 1998; Schwarz et al., 1991) of reasons were manipulated in Study 2. The main design was a 2 (optimism: optimist, pessimist) \times 2 (numbers: 2, 10) \times 2 (locus: external, internal) between-subjects factorial. We included a no-reasons nonfactorial condition, analogous to failure conditions of Study 1.

Because optimists and pessimists differed only in reaction to failures in Study 1, these alone were manipulated in Study 2. We predicted that optimists would view failures as more probable in comparison with pessimists in the no-reasons conditions, as they did in Study 1. However, more importantly, we tested whether the pattern of probability judgments would be related to moods when optimists listed a small number of easily generated external reasons supporting the known outcome. For comparison and to assess possible alternative patterns of results, we tested optimists' listing of internal reasons, and the reactions of pessimists.

6.1. Method

6.1.1. Participants

Participants were 120 introductory psychology students who were recruited from the upper and lower thirds of the distribution on the LOT-R, which was administered to 342 students at the beginning of the semester. Sixty optimists ($M = 18.44$, $SD = 2.77$) and 60 pessimists ($M = 9.02$, $SD = 2.73$), with approximately equal proportions of men and women, were randomly assigned with the constraint that each condition had an equal number of participants.

6.1.2. Procedure

Participants were tested individually, seated at a table with a personal computer. They were told that the researchers were interested in people's reactions to life events, and that test taking abilities and intellectual performances were of focus. The experimenter who tested participants was unaware of their optimism level. Participants read the following instructions presented by computer (e.g., Sanna & Mark, 1995; Sanna & Turley-Ames, 2000):

We are studying people's test taking competence and aptitude on a test of intellectual ability called the Remote Associates Test (RAT). Each RAT item consists of three stimulus words that are somehow related to a fourth word that you are to determine and record. For example, an item might consist of the three stimulus words: "elephant," "lapse," and "vivid." A correct response would be the fourth word "memory." That is, in this example, the fourth word, "memory," can be related to each of the three stimulus words in the following way: (a) memory like an "elephant"; (b) memory "lapse"; (c) "vivid" memory. During this experiment, you will be asked to perform a series of RAT items, and to answer some questions concerning your perceptions of the tasks and your performance.

RAT failures. We used the 10 items from the difficult RAT list, which has been shown to effectively induce perceived failure (see McFarlin & Blascovich, 1984). Each RAT item consisted of three stimulus words, related to a fourth unreported word that participants identified and recorded. Stimulus words were presented by

computer for 1-min. During each minute, participants attempted to identify the fourth word. If identified, participants typed the word into the computer. If participants could not think of a response, they could leave their answer blank or take a guess. However, instructions stated that each word-triad would remain on the screen for only 1-min. The 10 RAT items were presented to participants in random order.

To augment list-difficulty, (bogus) feedback was also provided. After the 10 items, participants read they could calculate how well they performed. They read that because the RAT had been used in prior research, there were norms indicating how well they did in relation to others. They were told that these norms had been previously entered into the computer and they could calculate how well they did by pressing the spacebar. Once pressed, there was a 9-s interval in which the screen flashed “CALCULATING... Please Wait.” Participants read that they had performed very poorly and had scored in the bottom 20% at their university. Similar failure manipulations using list difficulty plus bogus performance feedback have been used in prior research (e.g., Sanna & Mark, 1995; Sanna & Turley-Ames, 2000).²

Numbers of reasons and locus. In the *no-reasons* conditions, participants did not list any reasons, analogous to Study 1. Participants in the *2-reasons* and *10-reasons* conditions listed two and 10 reasons, respectively, about their poor RAT performance.³ Reasons were typed into blank spaces on the screen using the computer keyboard. To manipulate locus, participants were asked to list: “things that are external or reflect an aspect of the situation” (*external* condition), or “things that are internal or reflect an aspect of you” (*internal* condition; e.g., Russell, 1982; Sanna & Swim, 1992). All participants, including those in the *no-reasons* conditions, rated locus by: “To what degree was your RAT performance due to things that are external or reflect aspects of the situation, or are internal and reflect aspects of you?” (1 = *internal or reflects aspects of me*, 9 = *external or reflects aspects of the situation*; see Russell, 1982).

Probability judgments. Probabilities were solicited with an open-ended question. All participants were asked, “If you hadn’t already learned that you performed poorly on the RAT, what would you have thought the probability of performing poorly would be? In an answer ranging from 0 through 1.0, estimate the probability that you could have performed poorly.” Probability judgments were typed by participants into a blank space on the computer screen. The word “poorly” was typed on the screen in a slightly different font to appear as if it had been inserted by the computer, suggesting that the feedback was individualized.

² Participants answered only an average of 4.21 RAT items correctly, and supplementary analyses indicated that the number correct did not differ by our experimental conditions, further reinforcing the effectiveness of our failure outcome manipulations. This number correct roughly corresponds to previous research using similar procedures (e.g., Sanna, 1992; Sanna & Mark, 1995; Sanna & Turley-Ames, 2000). Debriefings of our participants in this study additionally indicated that participants did not have any problem with the believability of the feedback.

³ Pilot-testing on an independent sample indicated that people found listing 2-reasons ($M = 4.02$, $SD = 1.59$) easier than listing 10-reasons ($M = 7.22$, $SD = 1.75$) after receiving failure feedback on the RAT, $F(1, 34) = 13.32$, $p < .01$, $\eta^2 = .28$, which did not differ on the basis of whether reasons were external or internal (9-point scale: 1 = *very easy*, 9 = *very difficult*).

Mood. Participants responded by computer to a series of adjectives assessing their moods. Positive adjectives were *happy, satisfied, pleased, delighted, content, relieved,* and *glad*; negative adjectives were *gloomy, annoyed, depressed, miserable, sad, disappointed,* and *frustrated* (Sanna et al., 1999). Each was anchored by 1 (*not at all*) and 9 (*very much*).

6.2. Results and discussion

We conducted $2 \times 2 \times 2$ ANOVAs on the factorial portion of the data, with non-factorial comparisons made using the Dunnett procedure (see Winer, Brown, & Michels, 1991).

6.2.1. Probability judgments

Mean probability judgments are depicted in Fig. 2. The ANOVA revealed Optimism \times Locus, $F(1, 88) = 3.71$, $p = .057$, $\eta^2 = .04$, Locus \times Number, $F(1, 88) = 5.04$, $p < .05$, $\eta^2 = .05$, and three-way, $F(1, 88) = 17.26$, $p < .01$, $\eta^2 = .16$, interactions. We were most interested in how optimism affects probabilities by number and locus of reasons. For optimists, contrasts within the ANOVA indicated that failures were viewed as more probable when listing 2- ($M = .66$, $SD = .16$) than 10- ($M = .44$, $SD = .13$) external reasons, $t(88) = 3.75$, $p < .05$, $\eta^2 = .14$. Pessimists' judgments did not differ on the basis of whether they listed 2- ($M = .46$, $SD = .10$) or 10- ($M = .51$, $SD = .12$) external reasons. Optimists' judgments also differed when they listed 2- ($M = .42$, $SD = .12$) than 10- ($M = .53$, $SD = .12$) internal reasons, $t(88) = 2.21$, $p < .05$, $\eta^2 = .05$, but in a direction opposite to listing external reasons. Pessimists' judgments did not differ on this same basis (2-reasons, $M = .54$, $SD = .13$; 10-reasons, $M = .48$, $SD = .12$).

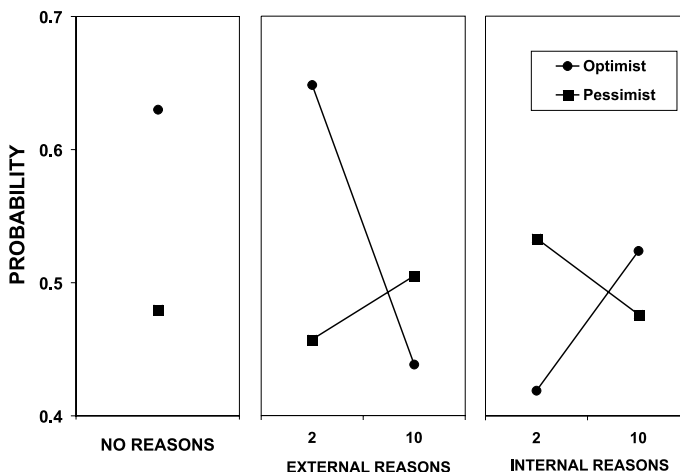


Fig. 2. Interaction of optimism and pessimism with locus and numbers of reasons on mean probability ratings for Study 2.

Important comparisons also involve the no-reasons condition, which can elucidate the strategies used to deal with failures. Optimists' probability judgments in the no-reasons conditions ($M = .63$; $SD = .13$) differed from all other optimist conditions, Dunnett $F(4, 55) = 8.05$, $p < .01$, $\eta^2 = .13$, except for the 2-external-reasons condition. That is, this latter condition and the no-reasons condition were the only ones to correspond in level of judged probabilities. Pessimists' probability judgments in the no-reasons condition ($M = .49$, $SD = .13$) did not differ from any other pessimist conditions, Dunnett $F(4, 55) = .63$, $p = .64$, $\eta^2 = .01$.

6.2.2. Numbers of reasons

External (e.g., "The RAT had some pretty obscure answers that was too hard for anybody to get") and internal (e.g., "I guess I've never been that good at solving word analogies") reasons were listed only in the 2- and 10-reasons conditions. There were more reasons listed in the 10- ($M = 8.52$, $SD = 2.11$) than 2-reasons ($M = 2.00$, $SD = .00$) conditions. (See also Footnote 3 for subjective difficulty verification.)

6.2.3. Locus rating

Participants rated locus on an external versus internal scale, which uncovered intriguing parallels with probability judgments. The ANOVA revealed Locus \times Number, $F(1, 88) = 5.86$, $p < .05$, $\eta^2 = .06$, and three-way, $F(1, 88) = 4.00$, $p < .05$, $\eta^2 = .04$, interactions. Contrasts identical to those for probabilities were conducted. For optimists, locus of failure was viewed as more external when listing 2- ($M = 6.92$, $SD = 1.68$) than 10- ($M = 4.51$, $SD = 1.49$) external reasons, $t(88) = 3.38$, $p < .05$, $\eta^2 = .11$. Pessimists' locus ratings did not differ on the basis of whether they listed 2- ($M = 5.09$, $SD = 1.85$) or 10- ($M = 4.97$, $SD = 1.82$) external reasons. Neither optimists' (2-reasons, $M = 4.80$, $SD = 1.75$; 10-reasons, $M = 5.54$, $SD = 1.78$) nor pessimists' (2-reasons, $M = 4.83$, $SD = 1.73$; 10-reasons, $M = 5.01$, $SD = 1.83$) rated locus of failure differed on the basis of the numbers of reasons listed in the internal conditions.

Comparisons with the no-reasons conditions were also made. Optimists' locus of failure in the no-reasons condition ($M = 6.83$; $SD = 1.79$) differed from all other optimist conditions, Dunnett $F(4, 55) = 4.77$, $p < .05$, $\eta^2 = .08$, except for the 2-external-reasons condition. Pessimists' locus in the no-reasons condition ($M = 4.82$, $SD = 1.81$) did not differ from any other pessimist conditions, Dunnett $F(4, 55) = 1.22$, $p = .42$, $\eta^2 = .02$. Once again, for optimists, the no-reason condition corresponded only to the 2-external-reasons condition, and the pattern of results for locus essentially tracked that obtained for probability judgments.

6.2.4. Mood

Negative mood adjectives were reversed scored and averaged with positive mood adjectives (Cronbach's $\alpha = .83$). The ANOVA revealed an optimist main effect, $F(1, 88) = 4.24$, $p < .05$, $\eta^2 = .05$, and Optimism \times Number, $F(1, 88) = 7.58$, $p < .01$, $\eta^2 = .08$, and three-way, $F(1, 88) = 5.02$, $p < .05$, $\eta^2 = .05$, interactions. Contrasts indicated that optimists' moods were more positive when listing 2- ($M = 6.11$, $SD = 1.55$) than 10- ($M = 4.13$, $SD = 1.23$) external reasons, $t(88) =$

3.51, $p < .05$, $\eta^2 = .12$. Pessimists' moods did not differ by whether they listed 2- ($M = 5.10$, $SD = 1.40$) or 10- ($M = 4.73$, $SD = 1.36$) external reasons. Neither optimists' (2-reasons, $M = 4.20$, $SD = 1.32$; 10-reasons, $M = 5.03$, $SD = 1.45$) nor pessimists' (2-reasons, $M = 4.30$, $SD = 1.22$; 10-reasons, $M = 4.22$, $SD = 1.47$) moods differed by numbers of internal reasons listed.

Optimists' moods in the no-reasons condition ($M = 6.01$; $SD = 1.41$) differed from all other optimist conditions, Dunnett $F(4, 55) = 4.52$, $p < .05$, $\eta^2 = .08$, except for the 2-external-reasons condition. Pessimists' moods in the no-reasons condition ($M = 4.52$, $SD = 1.52$) did not differ from any other pessimist conditions, Dunnett $F(4, 55) = 1.65$, $p = .39$, $\eta^2 = .02$. For optimists, moods once again corresponded only in the no-reasons and 2-external-reasons conditions, and the results suggested that these two groups felt most positive after failures.

In short, Study 2 conceptually replicated Study 1 with a different task, and also helps to elucidate mechanisms underlying optimists' strategy. Optimists viewed failed outcomes as more probable and they felt best when they thought of a few easily listed external reasons, thus adding to prior retroactive pessimism research (Tykocinski, 2001; Tykocinski et al., 2002). Patterns of results for optimists in the no-reasons and 2-external-reasons conditions corresponded for probability judgments, locus ratings, and moods. The reasonable inference here is that optimists in the control condition were doing the same thing *spontaneously* as those in the 2-external-reasons condition. The issue of spontaneity is always tricky (e.g., Sanna & Turley, 1996), but we felt it best to have a control in which we did not ask for thoughts of any kind, because this matches most closely to the procedures of other hindsight bias and retroactive pessimism research, and to our own Study 1. Pessimists did not use this retroactive strategy.

The idea that optimists' retroactive pessimism after failures and moods are related is further supported by a positive association between probability judgments and moods, $r(58) = .43$, $p < .001$, but this association did not occur for pessimists, $r(58) = .13$, $p = .31$ ($z = 3.15$, $p < .01$, for the difference between the two correlations). Moreover, there is evidence that locus ratings may mediate the relation between probabilities and moods for optimists; the above relationship was reduced to nonsignificance when locus ratings were partialled out, partial $r(57) = .12$, $p = .33$. These findings suggest that optimists' retroactive pessimism after failures is related to positive moods and accrues at least in part by thinking about a few easily generated external reasons that make the outcome seem inevitable.

7. General discussion

Our two studies indicated that retroactive pessimism (Tykocinski, 2001; Tykocinski et al., 2002) is another strategy used by optimists in their attempts at mood-regulation. Optimists can make the past seem more inevitable in the case of failures. In contrast, pessimists did not appear to use this type of retroactive strategy. This was true when inevitability was measured on a constrained rating scale (Study 1) and when open-ended probability judgments were employed (Study 2). The effect

occurred both in response to a variety of imagined situations in comparison with predictions and successes (Study 1) and in response to immediately experienced failures on a laboratory task (Study 2). The strategy was associated with positive moods for optimists, and appears to be due to a few easily generated external reasons (Study 2). In short, across both studies, converging findings using diverse methods lend robust support for these ideas.

7.1. Relations with other self-serving hindsight strategies

Prior research has suggested that people may use the hindsight bias for self-serving and other motivational purposes (e.g., Campbell & Tesser, 1983; Hawkins & Hastie, 1990; Mark & Mellor, 1991). For example, Louie (1999; see also Louie, Curren, & Harich, 2000) has shown that the hindsight bias is influenced by the valence of obtained outcomes. Participants who learned of positive outcomes displayed the hindsight bias, had internal thoughts, and took credit for their successes (they “knew all along” that good things would happen); participants who learned of unfavorable outcomes did not display the hindsight bias, had external thoughts, and denied blame for their failures (Louie, 1999; see also Hölzl, Kirchler, & Rodler, 2002). These results support the idea of self-serving tendencies (Snyder et al., 1978) in the hindsight bias, and also indicate that the hindsight bias may be related to attributional processes.

The idea of retroactive pessimism (Tykocinski, 2001; Tykocinski et al., 2002) may appear contradictory to these other findings. That is, other research indicates that people see the past as more inevitable after successes, whereas retroactive pessimism indicates that people see the past as inevitable after failures. But retroactive pessimism suggests that a different tactic can be used self-servingly; people *do not* think about better alternatives, and “an inescapable failure may be easier to digest than a failure that could have been easily avoided” (Tykocinski, 2001, p. 381). Our studies might thus also importantly link these two sets of findings. In the 2-external-reasons conditions (Study 2), optimists may be accepting failures (e.g., Aspinwall & Brunhart, 1996; Scheier & Carver, 1985) by making them seem more inevitable, but they may be simultaneously discounting responsibility for them via generating external reasons.

Noteworthy is that this was effective only when optimists listed few, rather than many, external reasons. Accessibility experiences (e.g., Schwarz, 1998) played a role in the process, and optimists’ strategy seemed sensitive to this. Accessibility experiences can also explain a converse finding, qualified by locus. When listing few internal reasons, optimists viewed failures internally, but outcomes were *not* seen as probable. They also did not experience more positive moods under such conditions, suggesting that self-blame could be a factor. In the 2-internal-reasons conditions, optimists may be taking responsibility for failures, but deny that outcomes were inevitable (e.g., perhaps they believed they can change outcomes in the future). If changeability is important, then assessing the stability or globality (e.g., Peterson & Bossio, 1991; Seligman, 1998) of reasons may be additional issues awaiting future research.

7.2. *Timing of strategies and conclusions*

Retroactive pessimism by optimists might appear ironic, or even counterintuitive, to what is normally believed to be their worldview. However, optimists and pessimists differ in timing of strategy usage (e.g., Helweg-Larsen & Shepperd, 2001; King et al., 1998; Norem & Illingworth, 1993), and part of this involves mental simulations (Sanna, 2000; Sanna et al., in press). Our research demonstrates that retroactive pessimism, *not* thinking about better alternatives (Tykocinski, 2001; Tykocinski et al., 2002), is yet another tactic in optimists' arsenal of self-regulation. To our knowledge, we are the first to relate hindsight tactics to optimism, but other individual differences may be relevant (e.g., Campbell & Tesser, 1983; Davies, 1992). Tykocinski (2001, Study 1) found people with high desire for control were particularly prone to use retroactive pessimism, and future research could also determine whether control or other variables that are part of optimism (e.g., positive affect) are most responsible for the effect.

There is increasing interest in how time influences judgments. For example, when looking toward the future, people try to predict affective states (Wilson, Wheatley, Meyers, Gilbert, & Axson, 2000), change confidence (Shepperd, Ouellette, & Fernandez, 1996b), or engage in defensive pessimism (Norem & Cantor, 1986). When looking toward the past, people make self-serving attributions (Snyder et al., 1978), ruminate (Nolen-Hoeksema, McBride, & Larson, 1997), or are susceptible to hindsight biases (Fischhoff, 1975). Our research is in this tradition of examining temporal variables, adding that mental simulations play a significant role in the process. We can thus speculate that mental simulations may also be relevant to these other phenomena. In fact, research already links mental simulations to changes in confidence (Sanna, 1999), defensive pessimism (Sanna, 1996), and the hindsight bias (Sanna et al., 2002).

That people differ in self-appraisals based upon temporal construals may also be relevant. For example, according to temporal self-appraisal theory (Ross & Wilson, 2000, 2002), people react to past selves and outcomes in ways that allow them to feel good. People could, for instance, maintain high self-regard by increasing the psychological distance between current and inadequate former selves. Optimists may have accomplished this by generating a few external reasons for failures. Pessimists did not do this, however, so individual differences might play an added role in temporal self-appraisals. Although we cannot say unequivocally whether our findings reflect cognitive or motivational factors (e.g., Kunda, 1990), our results hint that both were operative. Accessibility experiences, generally seen as cognitive, and mood-regulation after failures, suggesting motivation, were both found to be important. Our studies thus not only may extend knowledge of optimists' strategies, but also might take a further step toward broadening an understanding of personality and social cognition more generally.

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