

## Research Report

### Looking Forward to Looking Backward The Misprediction of Regret

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#### ABSTRACT

Decisions are powerfully affected by anticipated regret, and people anticipate feeling more regret when they lose by a narrow margin than when they lose by a wide margin. But research suggests that people are remarkably good at avoiding self-blame, and hence they may be better at avoiding regret than they realize. Four studies measured people's anticipations and experiences of regret and self-blame. In Study 1, students overestimated how much more regret they would feel when they "nearly won" than when they "clearly lost" a contest. In Studies 2, 3a, and 3b, subway riders overestimated how much more regret and self-blame they would feel if they "nearly caught" their trains than if they "clearly missed" their trains. These results suggest that people are less susceptible to regret than they imagine, and that decision makers who pay to avoid future regrets may be buying emotional insurance that they do not actually need.

"Inside we both know you belong with Victor. You're part of his work, the thing that keeps him going. If that plane leaves the ground and you're not with him, you'll regret it. Maybe not today. Maybe not tomorrow. But soon and for the rest of your life."  
Rick to Ilsa, *Casablanca* (1943)

Most people have been on that runway at one time or another, and, like Ilsa, most have boarded the plane. People's most consequential choices—whether to marry, have children, buy a house, enter a profession, or move abroad—are so often made out of fear of regret that students of decision making have focused more attention on this particular combination of disappointment and self-blame than on all other emotions combined (Bell, 1982; Landman, 1993; Loomes & Sugden, 1982; Zeelenberg, van Dijk, Manstead, & van der Pligt, 1998). Research has demonstrated the pervasive impact of anticipated regret on people's decisions, and has identified some of the circumstances under which people expect to feel especially regretful. For example, people expect to feel more regret when they act foolishly than when they fail to act wisely (Gilovich & Medvec, 1995), when they learn about alternatives to their bad choices than when they do not (Ritov & Baron, 1995, 1996; Zeelenberg, 1999a), when they accept bad advice than when they reject good advice (Crawford, McConnell, Lewis, & Sherman, 2002), when their bad choices are unusual rather than conventional (Simonson, 1992), and when they fail by a narrow margin rather than by a wide margin (Kahneman & Tversky, 1982; Medvec, Madey, & Gilovich, 1995).

What ties these circumstances together? As Zeelenberg (1999b, p. 326) noted, "Regret is the negative, cognitively based emotion that we experience when realizing or imagining that our present situation would have been better had we acted differently." In other words, regret is a

counterfactual emotion (Kahneman & Miller, 1986) that occurs when one recognizes that a negative outcome was caused by one's own actions, and, indeed, self-blame is the critical element that distinguishes regret from closely related emotions such as disappointment (Zeelenberg, van Dijk, & Manstead, 1998). Because self-blame is a key ingredient in the recipe for regret, it is only natural that people should expect regret to be exacerbated by factors that highlight their personal responsibility for negative outcomes. So, for example, when one misses an airplane by just a few minutes or a gold medal by just a few meters, it is all too easy to imagine how a small change in one's own behavior might have changed the outcome (Miller & Gunasegaram, 1990; Roese, 1997). People expect a narrow margin of loss—or a “near miss”—to exacerbate self-blame, and thus they expect that margin to exacerbate regret as well.

These expectations may be wrong. Research suggests that people routinely overestimate the emotional impact of negative events ranging from professional failures and romantic breakups to electoral losses, sports defeats, and medical setbacks (for recent reviews, see Frederick & Loewenstein, 1999; Gilbert, Driver-Linn, & Wilson, 2002; Loewenstein & Schkade, 1999; Wilson & Gilbert, 2003). One of the reasons for this is that people do not realize how readily they will rationalize negative outcomes once they occur. For instance, Gilbert, Pinel, Wilson, Blumberg, and Wheatley (1998) asked participants to predict how they would feel a few minutes after receiving negative personality feedback from a team of seasoned clinicians or from an experimental computer program, and participants expected to feel equally unhappy in the two cases. They did not feel as unhappy as they had predicted, but more important, they felt even less unhappy when they received the feedback from a computer than when they received it from a team of clinicians. Personality feedback is more easily rationalized when it comes from an unreliable source, of course, and although participants quickly capitalized on this fact after they received the feedback, they did not seem to recognize it in prospect.

One of the reasons why people expect to feel more regret when they fail by a narrow margin than when they fail by a wide margin is that they expect to blame themselves more in the former instance. But if people avoid self-blame with relative ease, then the size of the margin should have little or no impact on the experience of regret. We sought to investigate this possibility in four studies. In Studies 1 and 2, participants predicted how much regret and disappointment they would feel, or reported how much regret and disappointment they actually felt, after failing to win a prize (Study 1) or failing to catch a train (Study 2) by either a narrow or a wide margin. Because regret involves self-blame and disappointment does not, we hypothesized that participants would expect the margin of loss to influence their experiences of regret but not their experiences of disappointment. However, because people are better at avoiding self-blame than they realize, we hypothesized that the margin of loss would not influence the actual experience of either emotion. In Studies 3a and 3b, participants either predicted or reported their counterfactual thoughts or their feelings of responsibility after missing a train. We hypothesized that participants would expect the margin of loss to influence their feelings of self-blame, but that, in fact, it would not.

## **STUDY 1: REGRET IN THE LABORATORY**

### **Method**

Anyone who has ever taken a multiple-choice test has had the regrettable experience of initially choosing one answer and then changing his or her mind, only to find that the initial

answer was the right one. The phrase “How could I have been so stupid?” seems to have been specially designed for this occasion. Our goal in Study 1 was to create a situation in which all participants would give the wrong answer on a test (and hence expect to feel disappointment), but in which some of those participants would *almost* give the right answer (and hence expect to feel regret).

Thirty-five female and 29 male students at Harvard University were paid \$4 for their participation. An experimenter administered several measures of each participant's current emotional state. These included measures of regret and disappointment, which participants reported by drawing slashes through two continuous 116-mm lines whose endpoints were marked with the phrases “very slightly or not at all” and “extremely.” Participants were then invited to play a modified version of a television game show called *The Price is Right*. Participants were brought to a room that contained two identical sets of seven supermarket items (e.g., index cards, gum, detergent) and were asked to arrange the items within each set in order of price. They were told that “the two orders you create should be your two best guesses for the correct order of the items.” After arranging the items in each set, participants were told to choose the set that they thought was more likely to be arranged correctly. They were told that if the chosen set was arranged correctly, they would receive an attractive prize (a long-sleeved Harvard T-shirt valued at about \$40), and that if it was arranged incorrectly, they would receive a small consolation prize (a Harvard decal valued at about \$1). Once participants chose one of the sets, they were randomly assigned to role (experiencer or forecaster) and margin (narrow or wide) conditions.

### **Experiencers**

All experiencers were told that the chosen set was incorrectly arranged and that they had failed to win the attractive prize. Experiencers in the wide-margin condition were told that the unchosen set was incorrectly arranged (which meant that they would not have won the attractive prize even if they had chosen that set), and experiencers in the narrow-margin condition were told that the unchosen set was correctly arranged (which meant that they would have won the attractive prize if only they had chosen that set). Three minutes later, experiencers reported how much regret and disappointment they felt, using the same measures they had completed at baseline.

### **Forecasters**

Forecasters in the wide-margin condition were asked to predict how much regret and disappointment they would feel 3 min after learning that both sets were incorrectly arranged, whereas forecasters in the narrow-margin condition were asked to predict how much regret and disappointment they would feel 3 min after learning that the chosen set was incorrectly arranged but that the unchosen set was correctly arranged. Forecasters made these predictions on the same scales they had completed at baseline.

When the experiment was finished, participants were thanked and debriefed. For ethical reasons, those who correctly arranged the chosen set were given the attractive prize.

### **Results**

If people expect to blame themselves more when they lose by a narrow rather than a wide margin, then the size of the margin should influence their forecasts of regret (which involves self-blame) but not their forecasts of disappointment (which does not involve self-blame). However, if people do not actually blame themselves when they lose by a narrow margin, then the size of the margin should influence neither their experience of regret nor their experience of disappointment.

### **Regret**

There were 16 participants in each condition. Baseline measures of regret showed no differences between conditions (all  $F$ s < 1), and thus each participant's baseline rating of regret was subtracted from his or her forecast or experience of regret to create a change score. A contrast analysis revealed that the predicted pattern of means was significant,  $t(60) = 3.51$ ,  $p = .001$ ,  $d = .91$  (see Table 1). Post hoc analyses (Fisher's LSD) revealed that the size of the margin influenced forecasted regret,  $p = .009$ , but not experienced regret,  $p = .22$ . Forecasters overestimated how much regret they would feel in the narrow-margin condition,  $p = .02$ , but not in the wide-margin condition,  $p = .39$ .

### **Disappointment**

Baseline measures of disappointment showed no differences between conditions (all  $F$ s < 1), and thus each participant's baseline rating of disappointment was subtracted from his or her forecast or experience of disappointment to create a change score. A contrast analysis revealed that the predicted pattern of means was significant,  $t(60) = 2.72$ ,  $p = .008$ ,  $d = .70$  (see Table 1). Post hoc analyses (Fisher's LSD) revealed that the size of the margin influenced neither forecasted disappointment,  $p = .71$ , nor experienced disappointment,  $p = .69$ . Forecasters overestimated how much disappointment they would feel in both the narrow-margin condition,  $p = .05$ , and the wide-margin condition,  $p = .06$ .

## **STUDY 2: REGRET IN THE SUBWAY**

In Study 1, participants expected the size of the margin by which they lost to influence their experiences of regret but not their experiences of disappointment. In fact, the margin of loss influenced neither emotion, which suggests that participants in the narrow-margin condition did not experience the self-blame they had anticipated. In Study 2, we sought to determine whether the same phenomenon could be observed in a consequential, real-world situation. In a well-cited and often-replicated study (Kahneman & Tversky, 1982), participants predicted that other people would feel worse if they missed their airplanes by narrow rather than wide margins. As far as we know, no one has ever checked to see whether those predictions were correct. Airport security prevented us from testing airline passengers, so we took to the subway, where misses are more common and security guards more rare.

### **Method**

#### **Experiencers**

An experimenter approached passengers as they entered the track at an underground subway station in Cambridge, Massachusetts, where trains arrived about every 10 min. Passengers who entered the track 30 to 90 s after the train left the station were told that they had missed their train by 1 min (narrow-margin condition) and were offered \$1 to complete a questionnaire that asked them to report how they felt. Passengers who entered the track 3.5 to 6 min after the train left the station were told that they had missed their train by 5 min (wide-margin condition) and were offered \$1 to complete the same questionnaire. To report their feelings, passengers drew a slash through several 108-mm lines, each labeled with an emotion and marked at its endpoints with the phrases “not at all” and “extremely.” One of the lines was labeled “regretful,” and one was labeled “disappointed.”

### **Forecasters**

So that forecasters and experiencers were drawn from the same population, an experimenter approached passengers on a subway train that had just left the station and offered them \$1 to complete a questionnaire that asked them to predict either (a) how they would feel if they missed a train by 1 min (narrow-margin condition) or (b) how they would feel if they missed a train by 5 min (wide-margin condition). The scales were identical to those completed by experiencers.

### **Results**

Of the 139 passengers who agreed to participate (mean age = 28.0 years,  $SD = 11.4$  years), 76 were male, 62 were female, and 1 did not report his or her gender. One male passenger and 1 female passenger failed to complete the questionnaire and were excluded from all analyses, leaving 33 forecasters in the narrow-margin condition, 36 forecasters in the wide-margin condition, 33 experiencers in the narrow-margin condition, and 35 experiencers in the wide-margin condition.

### **Regret**

Participants' forecasts and experiences of regret were submitted to a contrast analysis which revealed that the predicted pattern of means was significant,  $t(133) = 3.59$ ,  $p = .001$ ,  $d = .62$  (see Table 1). Post hoc analyses (Fisher's LSD) revealed that the size of the margin influenced forecasted regret,  $p = .04$ , but not experienced regret,  $p = .43$ . Forecasters overestimated how much regret they would feel in the narrow-margin condition,  $p = .004$ , but not in the wide-margin condition,  $p = .09$ .

### **Disappointment**

Participants' forecasts and experiences of disappointment were submitted to a contrast analysis which revealed that the predicted pattern of means was significant,  $t(133) = 6.00$ ,  $p < .001$ ,  $d = 1.04$  (see Table 1). Post hoc analyses (Fisher's LSD) revealed that the size of the margin influenced neither forecasted disappointment,  $p = .597$ , nor experienced disappointment,  $p = .365$ . Forecasters overestimated how disappointed they would feel in both the narrow-margin condition,  $p < .001$ , and the wide-margin condition,  $p < .001$ .

## STUDIES 3A AND 3B: SELF-BLAME IN THE SUBWAY

In Studies 1 and 2, participants expected the margin of loss to influence their feelings of regret but not their feelings of disappointment; in fact, the margin of loss influenced neither emotion. Our interpretation of these results is that participants expected a narrow margin of loss to exacerbate self-blame and hence to exacerbate regret but not disappointment, but because participants were better at avoiding self-blame than they realized, the size of the margin influenced neither emotion. In Studies 3a and 3b, we sought direct evidence to suggest that forecasters were underestimating their ability to avoid self-blame. In Study 3a, we asked subway passengers to predict or report their feelings of regret and their counterfactual thoughts after missing a train by a narrow margin. In Study 3b, we asked subway passengers to predict and report their feelings of personal responsibility after missing a train by a narrow or a wide margin.

### Study 3a

#### Method

The procedures for Study 3a were identical to those of Study 2 except that all passengers were assigned to the narrow-margin condition. In addition to answering filler items, forecasters predicted how much regret they would feel if they missed a train by 1 min (on the same scales used in Study 2) and also predicted how they would complete the counterfactual statement “I would not have missed my train if only . . . .” Experiencers were told that they had missed their train by 1 min, were asked to report how much regret they felt, and were then asked to complete the same counterfactual statement.

#### Results

Of the 30 male and 30 female passengers who agreed to complete a questionnaire (mean age = 25.8 years,  $SD = 10.5$  years), 3 male and 2 female passengers did not complete the questionnaire and were excluded from all analyses, leaving 28 forecasters and 27 experiencers.

Forecasters predicted that they would feel more regret ( $M = 49$ ,  $SD = 34$ ) than experiencers actually reported feeling ( $M = 24$ ,  $SD = 25$ ) upon missing their train by a narrow margin,  $t(53) = 2.98$ ,  $p = .002$ ,  $d = .82$ .

Three judges who were blind to the hypothesis and to each participant's role read each of the participant's statements and rated (among other things) the extent to which the participant seemed to blame his or her outcome on “factors that are within the person versus factors that are outside the person.” Judges made this rating on a 5-point Likert scale that was anchored at the endpoints with the phrases “internal” (1) and “external” (5). The judges' ratings were averaged ( $\alpha = .96$ ), and analysis revealed that forecasters made more internal counterfactual statements ( $M = 2.2$ ,  $SD = 1.4$ ) than did experiencers ( $M = 2.9$ ,  $SD = 1.5$ ),  $t(53) = 1.76$ ,  $p = .044$  (one-tailed),  $d = .48$ . In other words, forecasters expected to blame themselves (e.g., one forecaster wrote: “I would not have missed the train if only I'd woken up earlier and gotten out of the house faster”), whereas experiencers actually tended to blame someone or something else (e.g., one experiencer wrote: “I would not have missed the train if only all the gates were opened instead of just one”). Apparently, participants found it easy to absolve themselves of responsibility for missing a train

by 1 min, but difficult to predict that they would do so.

### Study 3b

#### *Method*

The methods of Study 3b were identical to the methods of Study 2 except that (a) passengers were not paid for their participation, and (b) they were asked just one question. Specifically, passengers were asked to complete the sentence “I feel . . .” by drawing a slash through a continuous 105-mm line that was marked at its endpoints with the phrases “not at all responsible for missing the train” and “entirely responsible for missing the train.”

#### Results

Of the 164 passengers who agreed to complete a questionnaire (mean age = 29.05 years,  $SD = 11.44$  years), 75 were male, 88 were female, and 1 did not report his or her gender. There were 41 forecasters in the narrow-margin condition, 41 forecasters in the wide-margin condition, 39 experiencers in the narrow-margin condition, and 43 experiencers in the wide-margin condition.

Participants’ forecasts and experiences of responsibility were submitted to a contrast analysis which revealed that the predicted pattern of means was significant,  $t(160) = 4.87, p < .001, d = .77$  (see Table 1). Post hoc analyses (Fisher’s LSD) revealed that the size of the margin influenced forecasted responsibility,  $p = .018$ , but not experienced responsibility,  $p = .71$ . Forecasters overestimated how much responsibility they would feel in both the narrow-margin condition,  $p < .001$ , and the wide-margin condition,  $p = .027$ . Apparently, participants thought they would be more likely to blame themselves for missing a train by 1 min than by 5 min, but they were wrong.

### DISCUSSION

Regret can be a bit of a boogeyman, looming larger in prospect than it actually stands in experience. In our studies, people mistakenly expected a narrow margin of loss to exacerbate their feelings of regret because they did not realize how readily they would absolve themselves of responsibility for their disappointing outcomes. We do not mean to suggest that margins of loss can never influence the experience of regret. Indeed, Medvec et al. (1995) studied the facial expressions of Olympic athletes and found that bronze medalists (who missed a gold medal by a wide margin) appeared happier than silver medalists (who missed a gold medal by a narrow margin). That study suggests that margins of loss *can* have an impact on emotional experience, and our studies merely suggest that however powerful that impact is, it is not as powerful as people anticipate. One of the reasons for this is that people are less likely than they realize to blame themselves for their negative outcomes.

The failure to realize just how easily future regrets will be minimized may be costly for decision makers, who often favor gambles in which bad outcomes are likely but unregrettable over gambles in which bad outcomes are unlikely but regrettable. For example, research on *inaction inertia* has shown that when people forgo a profitable opportunity (buying a \$10 shirt for \$2), they tend to forgo a subsequent opportunity that is somewhat less profitable (buying the

same shirt for \$7) because they believe that accepting the second opportunity will cause them to regret having refused the first (Tykocinski & Pittman, 1998). The irony is that these people may be forgoing profits in order to avoid regrets they would never actually experience. The anticipation of regret can cause people to overpay for consumer goods (Simonson, 1992), to negotiate ineffectively (Larrick & Boles, 1995), and to overvalue the ability to change their minds (Gilbert & Ebert, 2002). Clearly, people pay a steep price to avoid future regrets, and our studies suggest that they may be purchasing emotional insurance that they do not really need. Ilsa could not face the possibility of looking back in anguish and so reluctantly boarded the plane, but had she stayed with Rick in Casablanca, she would probably have felt just fine. Not right away, of course. But soon. And for the rest of her life.

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*Table 1*

Forecasted and Experienced Regret, Disappointment, and Responsibility in Studies 1, 2, and 3b

		Margin		
		Narrow	Wide	Narrow - Wide
Study 1				
Regret				
	Forecaster	50 (37)	20 (3)	30*
	Experiencer	24 (36)	10 (24)	14
Disappointment				
	Forecaster	44 (31)	49 (33)	-5

Study 2	Experiencer	19 (43)	24 (38)	-5
	Regret			
	Forecaster	41 (30)	29 (29)	12*
	Experiencer	23 (17)	19 (16)	4
	Disappointment			
	Forecaster	47 (23)	45 (31)	2
	Experiencer	24 (18)	19 (19)	5
Study 3b				
	Responsibility			
	Forecaster	55 (36)	38 (34)	17*
	Experiencer	19 (26)	22 (34)	-3

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*Note:* Values for Study 1 indicate the average change in the location of a slash mark in millimeters from the endpoint (0) of a 116 mm scale. Values for Studies 2 and 3b indicate the location of a slash mark in millimeters from the endpoint (0) of a 108 mm scale (Study 2) or a 105 mm scale (Study 3b). Higher values indicate greater increases in (Study 1) or amounts of (Studies 2 and 3b) regret, disappointment, or responsibility. Values in parentheses are standard deviations. An asterisk (\*) indicates a reliable difference,  $p < .05$ . The weights for all analyses of regret and responsibility were 3 in the narrow margin/forecaster condition and -1 in all other conditions. The weights for all analyses of disappointment were 1 in the forecaster conditions and -1 in the experiencer conditions.