

Mispredicting distress following romantic breakup: Revealing the time course of the affective forecasting error [☆]

Paul W. Eastwick ^a, Eli J. Finkel ^{a,*}, Tamar Krishnamurti ^b, George Loewenstein ^b

^a Northwestern University, 2029 Sheridan Road, Swift Hall Room 102, Evanston, IL 60208, USA

^b Carnegie Mellon University, 5000 Forbes Avenue, 208 Porter Hall, Pittsburgh, PA, 15213, USA

Received 23 March 2007; revised 29 June 2007

Available online 10 July 2007

Abstract

People evidence significant inaccuracies when predicting their response to many emotional life events. One unanswered question is whether such affective forecasting errors are due to participants' poor estimation of their initial emotional reactions (an *initial intensity bias*), poor estimation of the rate at which these emotional reactions diminish over time (a *decay bias*), or both. The present research used intensive longitudinal procedures to explore this question in the wake of an upsetting life event: the dissolution of a romantic relationship. Results revealed that the affective forecasting error is entirely accounted for by an initial intensity bias, with no contribution by a decay bias. In addition, several moderators of the affective forecasting error emerged: participants who were more in love with their partners, who thought it was unlikely they would soon enter a new relationship, and who played less of a role in initiating the breakup made especially inaccurate forecasts.

© 2007 Elsevier Inc. All rights reserved.

Keywords: Affective forecasting; Breakup; Romantic relationships; Love; Longitudinal

“If you should ever leave me,
though life would still go on, believe me;
The world could show nothing to me,
so what good would living do me?”
– *God Only Knows*, The Beach Boys

The termination of a romantic relationship is among life's most distressing and disruptive events. Indeed, the negative health consequences of divorce are well documented (e.g., Kiecolt-Glaser et al., 1987), and even non-marital romantic breakup is powerful enough to generate considerable sadness and anger (Sbarra, 2006) and to unveil people's deepest insecurities (Davis, Shaver, & Ver-

non, 2003). Furthermore, this distress is not necessarily alleviated if one actively chooses to end a relationship: “Breakers” tend to experience guilt and even physical symptoms such as headaches and sleeping irregularities (Akert, 1998, as cited in Aronson, Wilson, & Akert, 2005).

Regardless of who initiates a breakup, it is likely that people are typically well aware that relationship dissolution is an unpleasant experience. After all, people strive to maintain their social relationships even in the face of strong external barriers (Baumeister & Leary, 1995), presumably because the alternative life without a particular close other seems dark and miserable. But how accurately can people predict the magnitude of this post-breakup distress? A burgeoning literature on affective forecasting reveals that individuals demonstrate remarkably poor insight when asked to predict the magnitude of their distress following emotional events (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; for reviews, see Wilson & Gilbert, 2003, 2005). From disappointing election results (Gilbert et al., 1998) to lost football games (Wilson, Wheatley, Meyers, Gilbert, & Axsom, 2000) to unpleasant medical procedures (Riis

[☆] Paul W. Eastwick and Eli J. Finkel, Department of Psychology, Northwestern University. Tamar Krishnamurti and George Loewenstein, Department of Social and Decisions Sciences, Carnegie Mellon University. This research was supported by a National Science Foundation Graduate Research Fellowship awarded to P.W.E.

* Corresponding author. Fax: +1 847 491 7859.

E-mail addresses: p-eastwick@northwestern.edu (P.W. Eastwick), finkel@northwestern.edu (E.J. Finkel).

et al., 2005), individuals tend to predict that such events will cause greater levels of distress and negative affect than is actually the case. (Although the present report examines the affective forecasting error regarding a negative event, participants also tend to overestimate their emotional responses to positive events; e.g., Wilson et al., 2000.)

Since the initial demonstration of the affective forecasting error (Gilbert et al., 1998), over two dozen additional articles have empirically explored the characteristics of and processes underlying this pervasive bias. These experiments have uncovered a number of independent reasons why people commit affective forecasting errors. To take one example, participants' forecasts seem not to account for their own *psychological immune systems*: that is, their ability to effortlessly make sense of and subsequently reduce the emotional impact of unexpected negative events (Gilbert, Lieberman, Morewedge, & Wilson, 2004; Gilbert et al., 1998). Another source of bias is called *focalism*, which refers to participants' tendency to focus only on the emotional event in question when making their forecasts, frequently ignoring other life events that could raise or lower their distress in the wake of the event (Wilson et al., 2000). In other cases, errors are due to an *empathy gap* (Loewenstein, 1996, 2005) whereby participants insufficiently correct their forecasts to counteract the biases introduced by their current emotional states (Gilbert, Gill, & Wilson, 2002). The affective forecasting error is consistent and persistent; one or several possible mechanisms may conspire to produce it (see Wilson & Gilbert, 2003, for a comprehensive list).

One central yet unresolved issue in this literature concerns the precise time course of the forecasting error. Wilson and Gilbert (2003) noted that all extant data were consistent with either or both of two possibilities: an *initial intensity bias*, which refers to erroneous predictions about the initial emotional impact of an event, or a *decay bias*, which refers to erroneous predictions about the rate that an emotional reaction diminishes over time.¹ That is, participants could be making incorrect affective forecasts because (a) they believe that emotional reactions are initially more acute than is actually the case and/or (b) they believe that emotional reactions decay at a slower rate than is actually the case. The currently preferred term *impact bias*, defined as an error "whereby people overestimate the impact of future events on their emotional reactions" (Wilson & Gilbert, 2003, p. 353), subsumes both the initial intensity and decay biases.

Research can reveal greater insight into the nature of the affective forecasting error by teasing apart the relative contributions of the initial intensity bias and the decay bias. Perhaps forecasting errors are optimally characterized as an overestimation of the immediate distress people feel

after an emotional event, or perhaps they are due to people's underestimation of the speed at which emotional reactions diminish over time. Why is it that virtually no research has compared the initial intensity and decay biases? A plausible answer is that such a study would entail significant methodological complexity. It would ideally use a within-subjects design, requiring participants to provide both a forecast (before an event) and an actual rating (after an event) of their emotions. This design is more rigorous than a between-subjects design (where some participants are "forecasters" and others are "experiencers"), but it is more difficult to execute because it requires that participants be recruited for the study before the occurrence of the emotional event. Furthermore, such a study would require that participants (a) forecast their future affective experiences at multiple (at least 2, but preferably 3 or more) time points following the emotional event and (b) report their actual emotions at those time points that correspond to the forecasts. To date, only one published study has used such a design (Kermer, Driver-Linn, Wilson, & Gilbert, 2006, Study 2). In advance of placing a bet, participants in this study forecasted their happiness immediately and 10 min after winning or losing it; they then won or lost the bet and provided their actual happiness ratings immediately and 10 min later. The researchers found that participants who lost the bet committed an affective forecasting error, and the magnitude of this error did not differ significantly between the first and second assessments (D.A. Kermer, personal communication, November 26, 2006). That is, participants' emotional reactions were immediately less intense than they had predicted (i.e., an initial intensity bias), and though their forecasts and actual emotions moved toward baseline over the ensuing 10 min, the slopes of these two lines did not differ significantly (i.e., no decay bias).

Though entirely appropriate for the research goals of Kermer and colleagues (2006), 10 min is a very short amount of time to test for the existence of the decay bias. It is plausible that time course differences between forecasted and actual emotions might only emerge given a sufficient time lapse since the emotional event. We constructed the present study to test for both the initial intensity bias and the decay bias over approximately 3 months and in response to a consequential real-life event: the breakup of a romantic relationship.

The current research

When people are asked to recall depressing or adverse events in their life, the vast majority of their answers refer to some form of relationship distress, with the dissolution of a romantic relationship emerging as one of the most common answers (e.g., Harter, 1999; Veroff, Douvan, & Kulka, 1981). For this reason, we chose to explore the time course of the affective forecasting error using romantic breakup as the target emotional event. In general, it is tricky to design a longitudinal study that captures a distressing yet unscheduled major life event. But romantic

¹ The terms initial intensity bias and decay bias differ slightly from those used by Wilson and Gilbert (2003). We adopt this modified terminology to provide precise language relevant to both the theoretical and statistical analyses in this report.

breakups happen to nearly everyone at one point or another, making it plausible that we could conduct an affective forecasting study using the more rigorous within-subjects design. Previous successful within-subjects designs have used lost football games (Wilson et al., 2000), disappointing elections, or negative feedback in an experimental setting (Gilbert et al., 1998; Wilson, Meyers, & Gilbert, 2003); these events, though clearly unpleasant, probably do not have the same potential for lasting distress as a romantic breakup. In fact, Gilbert and colleagues used a romantic breakup scenario in their very first demonstration of the affective forecasting error (Gilbert et al., 1998, Study 1), though they used a between-subjects design (comparing one group of forecasters to a separate group of experiencers), presumably due to the aforementioned methodological complexities.

In the present study, we overcame these methodological hurdles using a 9-month longitudinal study of dating behavior. All of the participants were college freshmen involved in a romantic relationship at study entry, and 38% of them broke up with that partner during the 6 months that followed. For these participants who experienced a breakup, we compared their forecasted distress (reported 2 weeks prior to the report of the breakup) with their actual distress at four different time points covering the initial weeks and months following the breakup. With these multiple assessments in hand, we could probe the existence of both the initial intensity bias and the decay bias. In addition, we explored three potential moderators of the affective forecasting bias: participants' reports of how much they were in love with their romantic partner, their likelihood judgments of whether they would soon begin a new relationship, and their reports of who initiated the breakup. We hypothesized that participants who were especially in love with their partner, who could not envision themselves beginning a new relationship, or who played less of a role in initiating the breakup would be especially likely to overestimate their post-breakup distress. These moderators seemed sensible from the perspectives of both interdependence theory (i.e., affective forecasting errors are pronounced when the outcomes of a relationship are good and the loss of the relationship would be costly; Thibaut & Kelley, 1959) and attachment theory (i.e., forecasting errors are pronounced when one is bonded to and disinclined to separate from one's romantic partner; Mikulincer & Shaver, 2007).

Methods

Participants

Sixty-nine Northwestern University freshmen participated in a 9-month paid longitudinal study. Eligibility criteria required that each participant be a first-year undergraduate at Northwestern University, a native English speaker, involved in a dating relationship of at least 2 months in duration, between 17 and 19 years old, and

the only member of a given couple to participate in the study.

All data in this report pertain to the 26 participants (10 female) whose romantic relationship at study entry ended during the first 6 months (14 waves) of the study. Most participants were 18 years old (two were 17 and five were 19); they had been dating their partner for an average of 14.0 months ($SD = 10.6$ months) at study entry. The questionnaire completion rate was excellent: of the 208 Distress reports required for the present analyses (26 participants \times 8 reports per participant), only one report was missing.

Procedure

This study was part of a larger investigation of dating processes and contained two components that are relevant to the present report. Participants completed an *Intake Questionnaire* at home sent via campus mail and an *Online Questionnaire* every other week for 38 weeks (for a total of 20 online sessions). The first 14 Online Questionnaires took approximately 10–15 min to complete; the remaining 6 (abbreviated) Online Questionnaires took only 1–2 min to complete. Participants could earn up to \$100 by completing the first 14 Online Questionnaires; for each of the 6 remaining (shorter) questionnaires completed, participants received one entry into a \$100 raffle.

Materials

As part of the Intake Questionnaire, participants provided demographic information and reported the length of their current relationship. As part of the biweekly Online Questionnaires, they reported whether or not they were still involved in a romantic relationship with the partner they had been dating at the start of the study. If participants reported that they were no longer romantically involved with their partner, they completed a 2-item measure of *Actual Distress*. This construct was an average of the items "In general, I am pretty happy these days" (reverse scored; see Gilbert et al., 1998) and "I am extremely upset that my relationship with [name] ended" ($\alpha = .62$). (Unless otherwise noted, all items were assessed on 1 [*strongly disagree*] to 7 [*strongly agree*] scales.) Participants subsequently completed this measure on all remaining Online Questionnaires. In addition, on each of the first 14 (longer) Online Questionnaires, participants completed four versions of a 2-item measure of *Predicted Distress* if they were still involved with their partner from study entry. Both items began with the following stem: "If your relationship were to end sometime within the next two weeks, to what degree will you agree with this statement in two [four, eight, twelve] weeks:" and then continued with, "In general, I am pretty happy these days" (reverse scored) and "I am extremely upset my relationship ended" ($\alpha = .80$).

We also explored several potential moderators of the affective forecasting error. If participants reported on the

Online Questionnaire that they were still involved with their partner from study entry, they completed a 1-item measure assessing how much they were *In Love* (“I am ‘in love’ with my partner”) and a 1-item measure assessing *New Relationship Likelihood* (“It is likely that I will start a new romantic relationship over the next two weeks”). Finally, the first time that participants reported on the Online Questionnaire that they were no longer dating their partner, they indicated who was the *Breakup Initiator* (“me”, “mutual”, or “partner”).

Analysis strategy

The Predicted Distress ratings analyzed in the present report were those reported on the Online Questionnaire 2 weeks before participants reported that their relationship ended. In other words, the dataset included participants’ Predicted Distress ratings that corresponded to the breakup session 2 weeks later (Time 0), as well as to the Online Questionnaire sessions that were 2, 6, and 10 weeks following the breakup session (Time 2, 6, and 10, respectively). The Actual Distress ratings included in the dataset are those actually reported by the participants on the Online Questionnaire at the breakup session (Time 0) as well as at the sessions 2, 6, and 10 weeks following the breakup session. The In Love and New Relationship Likelihood ratings analyzed in the present report were also those reported on the Online Questionnaire 2 weeks before participants reported that their relationship ended.

We employed growth curve procedures (e.g., Singer & Willett, 2003) to analyze these data. Growth curve analysis can reveal in a single regression equation whether a predictor has an effect on the initial level and/or the slope of a dependent variable’s trajectory over time. In this case, the initial intensity vs. decay bias distinction maps on perfectly to the distinction between an *initial status* and *slope* effect (see Results). Each participant provided eight rows of data: four Actual Distress reports and four Predicted Distress reports. These reports correspond to Time 0 (the breakup session), 2, 6, or 10; one unit of time corresponds to 1 week in real time. Distress reports at each time point (Level 1) were nested within the dummy variable Distress Type (Level 2), which was coded 0 for Actual and 1 for Predicted, and Distress Type was nested within participant (Level 3). These nested observations violate the Ordinary Least Squares regression assumption of independence. Growth curve models account for this nonindependence by simultaneously examining variance associated with each level of nesting, thereby providing unbiased hypothesis tests.

Results

Affective forecasting error

Did participants commit an affective forecasting error when asked to predict how distressed they would be if their romantic relationship ended? Such an error could possibly

take either (or both) of two forms: an initial intensity bias or a decay bias. These possibilities could be revealed by the following regression analysis:

$$\text{Distress} = \gamma_0 + \gamma_1 \text{DistressType} + \gamma_2 \text{Time} + \gamma_3 (\text{DistressType} \times \text{Time}) + \text{error}. \quad (1)$$

Distress was left on the original 1–7 metric, Distress-Type was dummy coded (0 = Actual; 1 = Predicted), and Time was coded as 0, 2, 6, or 10. The coefficient γ_0 indicates the initial status (Time 0) of Actual Distress. The coefficient γ_1 indicates whether participants’ Predicted Distress reports differed from their Actual reports at Time 0; a positive value for this parameter would indicate an affective forecasting initial intensity bias (statistically referred to as an *initial status* or *intercept* effect; see Singer & Willett, 2003). The coefficient γ_2 indicates whether participants’ Actual Distress reports changed over time. Finally, the coefficient γ_3 indicates whether or not this change over time differed as a function of whether the reports were predicted vs. actual; a positive value for this parameter would indicate an affective forecasting decay bias (statistically referred to as a *slope* or *rate of change* effect). Both the initial status (γ_0) and slope (γ_2) of Distress were permitted to vary randomly across participants (Level 3) and across Distress Type (Level 2).

Results of this regression are displayed graphically in Fig. 1. As hypothesized, the coefficient γ_1 was significant and positive, $\gamma_1 = .79$, $t(24) = 4.30$, $p < .001$, indicating that participants’ Predicted Distress ratings were higher than their Actual Distress ratings at Time 0 (i.e., an initial intensity bias). The coefficient γ_2 was significant and negative, $\gamma_2 = -.07$, $t(6) = -3.12$, $p = .021$, indicating that participants’ Actual Distress ratings decreased over time.

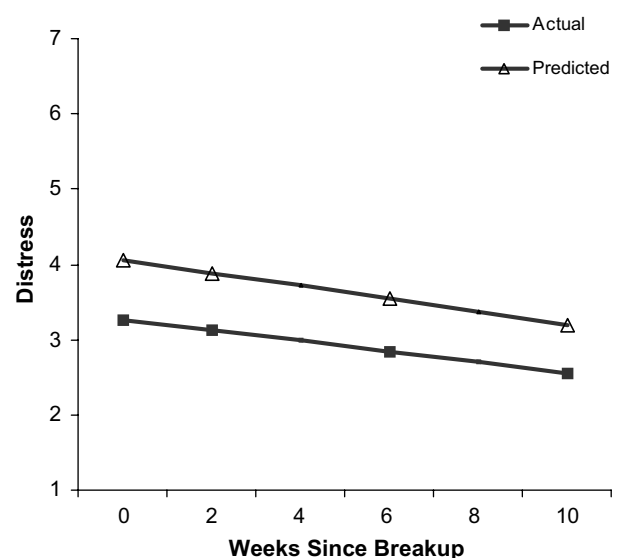


Fig. 1. Actual (squares) and Predicted (triangles) Distress trajectories (see Eq. (1)) following the breakup of a romantic relationship. Predicted Distress ratings were provided 2 weeks prior to the report of the breakup (which was reported at Time 0).

Interestingly, participants' Predicted Distress ratings decreased at a rate that did not differ significantly from their Actual Distress ratings, $\gamma_3 = -.02$, $t(24) = -0.55$, $p = .591$. In other words, the data revealed no evidence of a decay bias. Furthermore, even 10 weeks after the breakup (i.e., the last Actual Distress assessment), participants' Predicted Distress ratings still overestimated their Actual Distress (simple effect γ_1 at week 10 = .64, $t(24) = 2.85$, $p = .009$). Thus, the Eq. (1) regression revealed evidence of an initial intensity bias (γ_1) but no evidence of a decay bias (γ_3): Participants' Predicted Distress was significantly greater than their Actual Distress at wave 0, and both distress types decreased over time at roughly the same rate.

Moderators of the affective forecasting effect

Perhaps the affective forecasting error was more pronounced for some individuals than for others. First, we hypothesized that individuals would overestimate their distress following a breakup to the extent that they reported being in love with their partner at the session immediately preceding the breakup. To examine this possibility, we conducted a second regression analysis:

$$\text{Distress} = \gamma_0 + \gamma_1 \text{DistressType} + \gamma_2 \text{Time} + \gamma_3 \text{InLove} + \gamma_4 (\text{DistressType} \times \text{InLove}) + \text{error}. \quad (2)$$

Again, distress was left on the original 1–7 metric, DistressType was dummy coded (0 = Actual; 1 = Predicted), and Time was coded as 0, 2, 6, or 10.² InLove was a Level 3 variable and was standardized ($M = 0$, $SD = 1$). Coefficients γ_0 , γ_1 , and γ_2 have the same conceptual meaning as in Eq. (1). Coefficient γ_3 indicates whether or not participants who were more in love with their partner experienced more Actual Distress at Time 0, and coefficient γ_4 tests whether the discrepancy between Predicted Distress and Actual Distress ratings was more pronounced for participants who were in love. For example, a positive value for γ_4 would indicate that participants who were more in love evidenced a greater initial intensity bias.

As in Eq. (1), the coefficient γ_1 in Eq. (2) was significant and positive, $\gamma_1 = .47$, $t(35) = 3.20$, $p = .003$, and the coefficient γ_2 was significant and negative, $\gamma_2 = -.08$, $t(35) = -6.08$, $p < .001$. Coefficient γ_3 was marginally significant and positive, $\gamma_3 = .40$, $t(35) = 1.90$, $p = .066$, indicating that participants were (marginally) more likely to experience

distress after breakup to the extent that they had reported being in love with their partner just prior to the breakup. For the critical parameter, γ_4 , In Love indeed proved to be a significant moderator of the initial intensity bias, $\gamma_4 = .62$, $t(35) = 3.78$, $p < .001$. Fig. 2 presents predicted trajectories for participants whose In Love reports were 1 standard deviation above ("In Love") and below ("Not in Love") the mean. The simple effect of Distress Type for "In Love" participants was both substantial and significant: $\gamma_1 = 1.08$, $t(34) = 5.55$, $p < .001$. That is, participants who were in love with their partners greatly overestimated the amount of distress they would feel immediately after the breakup. On the other hand, the simple effect of Distress Type for "Not in Love" participants was both small and nonsignificant, $\gamma_1 = -.15$, $t(34) = -0.63$, $p = .533$. In other words, those participants who were not in love with their romantic partners closely preceding the breakup were quite accurate when asked to forecast their distress. Taken together, the results from Eq. (2) suggest that participants made severe affective forecasting errors (specifically the initial intensity bias) to the extent that they were in love with their romantic partner just prior to the breakup, but they tended not to make such errors when they were not especially in love.

In a second moderational analysis, we hypothesized that participants would be more likely to overestimate their distress if they reported at the session before the breakup that it was unlikely that they would enter into a new relationship during the next 2 weeks. To examine this possibility, we substituted In Love in Eq. (2) with the variable New Relationship Likelihood, which was standardized. Again, the coefficient γ_1 was significant and positive, $\gamma_1 = .70$,

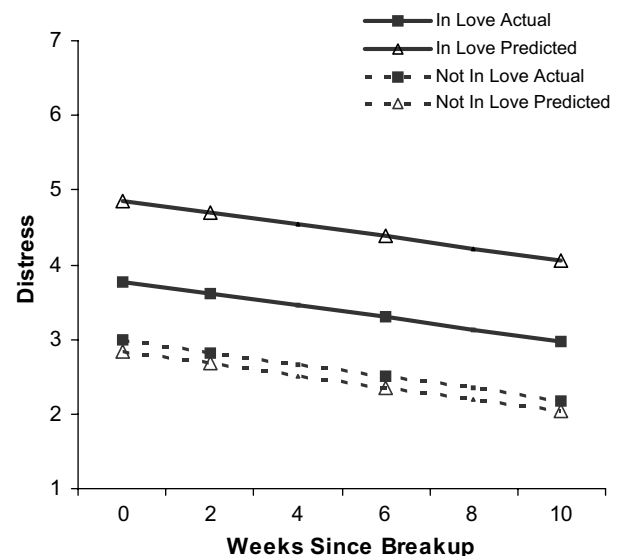


Fig. 2. Actual (squares) and Predicted (triangles) Distress trajectories (see Eq. (2)) following the breakup of a romantic relationship. Trajectories are presented separately for participants who were "In Love" (1 SD above the mean; solid lines) and "Not in Love" (1 SD below the mean; dotted lines) with their partners. Predicted Distress and In Love ratings were provided 2 weeks prior to the report of the breakup (which was reported at Time 0).

² The DistressType \times Time parameter was not included in this analysis because it was nonsignificant in Eq. (1) (and is again nonsignificant if added to Eq. (2), $\gamma = -.02$, $t(23) = -0.79$, $p = .437$). Indeed, Time did not show significant random variability in Eq. (1) at either Level 2 ($\sigma = .003$, $z = 1.08$, $p = .139$) or Level 3 ($\sigma = .000$). Therefore, for this analysis, only the initial status (γ_0) was permitted to vary randomly across participants (Level 3) and across Distress Type (Level 2). Finally, the 3-way interaction DistressType \times Time \times InLove, which would have indicated that InLove moderates the (nonexistent) decay bias, was not significant, $\gamma = -.01$, $t(23) = -0.45$, $p = .658$, and was therefore excluded from Eq. (2).

$t(35) = 5.14, p < .001$, and the coefficient γ_2 was significant and negative, $\gamma_2 = -.08, t(35) = -5.54, p < .001$. Coefficient γ_3 was nonsignificant in this case, $\gamma_3 = -.13, t(35) = -0.06, p = .554$, indicating that participants were not significantly more or less likely to experience distress after breakup to the extent that they thought they were likely to begin a new relationship. However, γ_4 was significant, indicating that New Relationship Likelihood moderated the initial intensity bias, $\gamma_4 = -.76, t(35) = -5.52, p < .001$. Fig. 3 presents predicted trajectories for participants whose New Relationship Likelihood reports were 1 standard deviation above (“Likely”) and below (“Unlikely”) the mean. The simple effect of Distress Type for participants 1 SD above the New Relationship Likelihood mean was nonsignificant: $\gamma_1 = -.05, t(33) = -0.28, p = .783$, indicating that participants forecasted their distress reasonably accurately if they thought they were likely to begin a new relationship in the next 2 weeks. On the other hand, the simple effect of Distress Type for participants 1 SD below the mean on New Relationship Likelihood was large and significant, $\gamma_1 = 1.46, t(35) = 7.61, p < .001$. In other words, participants made especially severe affective forecasting errors if, shortly before the breakup, they thought it was unlikely they would start a new relationship during that period.

In a third moderational analysis, we hypothesized that participants’ affective forecasting errors would be worse to the extent that they played less of a role in initiating the breakup. We substituted InLove in Eq. (2) with the variable Breakup Initiator, which we treated as a categorical

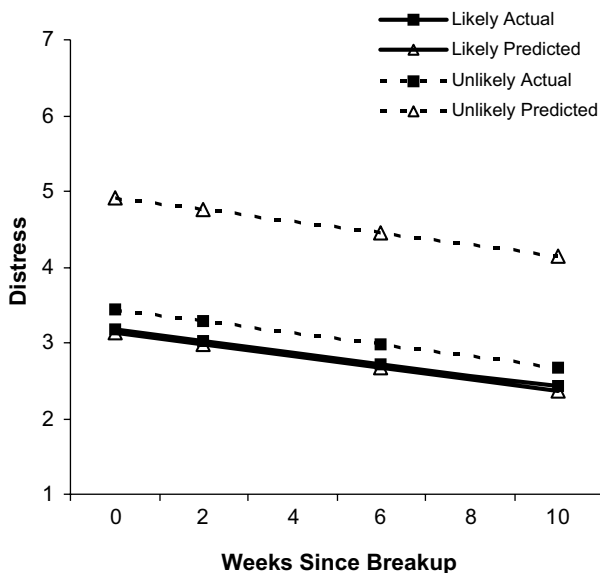


Fig. 3. Actual (squares) and Predicted (triangles) Distress trajectories following the breakup of a romantic relationship. Trajectories are presented separately for participants who believed they were “Likely” (1 SD above the mean; solid lines) and “Unlikely” (1 SD below the mean; dotted lines) to begin a new relationship during the 2-week period that preceded the breakup. Predicted Distress and New Relationship Likelihood ratings were provided 2 weeks prior to the report of the breakup (which was reported at Time 0).

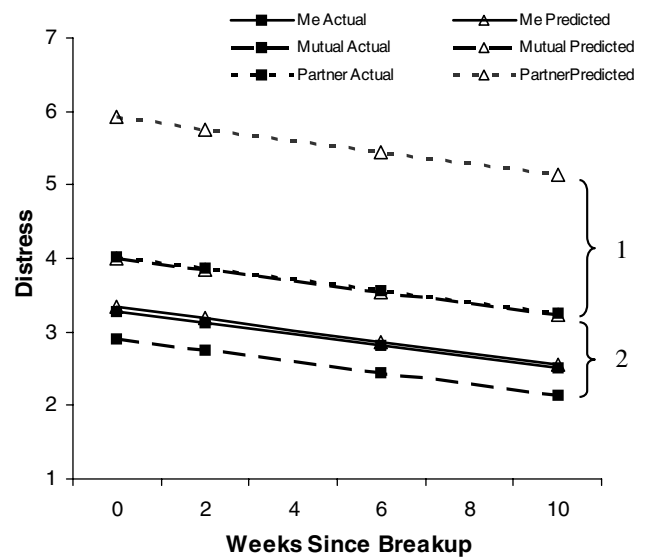


Fig. 4. Actual (squares) and Predicted (triangles) Distress trajectories following the breakup of a romantic relationship. Trajectories are presented separately for participants who reported that the actual initiator of the breakup was the self (“me”, solid lines), both the self and the partner (“mutual”, dashed lines), or solely the partner (“partner”, dotted lines). Significant forecasting errors were committed by participants reporting “partner” (bracket 1) and “mutual” (bracket 2) but not “me”. Predicted Distress ratings were provided 2 weeks prior to the report of the breakup (which was reported at Time 0); Breakup Initiator was reported at Time 0.

variable (me, mutual, or partner). Both Actual and Predicted Distress trajectories for participants who answered “me” ($N = 14$), “mutual” ($N = 7$), and “partner” ($N = 5$) are displayed in Fig. 4. The overall F test for the main effect of Breakup Initiator (γ_3) was nonsignificant, $F(2, 35) = 1.71, p = .196$, suggesting that participants were no more or less likely to experience distress after breakup depending on who broke it off.³ As predicted, however, the interaction of DistressType \times Breakup Initiator (γ_4) was significant, $F(2, 35) = 14.44, p < .001$. The simple effect of Distress Type (γ_1) was significant for participants who reported that their partner initiated the breakup, $\gamma_1 = 1.89, t(35) = 6.14, p < .001$ (see Fig. 4, bracket 1), and for participants who reported that the breakup was mutual, $\gamma_1 = 1.10, t(35) = 4.31, p < .001$ (see Fig. 4, bracket 2). However, this simple effect was nonsignificant for participants who reported that they alone had initiated the breakup, $\gamma_1 = .05, t(35) = 0.27, p = .792$. This analysis suggests that participants made reasonably accurate forecasts if they themselves ultimately were the ones who broke off the relationship, but participants tended to make affective forecasting errors if they were (at least in part) the recipient of the breakup.

³ The Breakup Initiator simple effect of mutual vs. partner predicting actual distress was marginally significant, $\gamma_0 = -1.11, t(35) = -1.84, p = .075$; participants were somewhat less likely to experience distress for mutual compared partner-initiated breakups.

Finally, we simultaneously added the New Relationship Likelihood and Breakup Initiator main effects and the DistressType \times New Relationship Likelihood and DistressType \times Breakup Initiator interactions to Eq. (2). In this rigorous analysis, the DistressType \times InLove interaction, $\gamma = .35$, $t(35) = 2.03$, $p = .050$, and the DistressType \times New Relationship Likelihood interaction, $\gamma = -.62$, $t(35) = -4.43$, $p < .001$, remained significant. However, the DistressType \times Breakup Initiator interaction did not achieve significance, $F(2, 35) = 2.14$, $p = .133$. This analysis suggests that the In Love and New Relationship Likelihood moderational effects are at least partially independent.

Correlational accuracy?

Although the results reported thus far have demonstrated that many participants evidence significant inaccuracies when making affective forecasts, there is another way of examining accuracy in the present study. Whereas the previous results have examined the size of the mean difference between participants' Actual and Predicted Distress ratings, the within-subjects design of this study also permits the calculation of the correlation between participants' Actual and Predicted Distress. A significant correlation would indicate that participants who predicted higher distress ratings for themselves (compared to other participants) actually did experience greater distress (compared to other participants).

Table 1 presents the correlations between participants' Actual and Predicted Distress separately for the four assessment waves. In fact, participants' Predicted Distress reports exhibited substantial accuracy using this correlational metric, especially for the distress reports corresponding to waves 0 and 2. It seems that the mean difference inaccuracies evidenced by participants' affective forecasting errors can coexist alongside substantial correlational accuracy.

Discussion

This report explored participants' predicted and actual distress in response to the breakup of a romantic relationship. On average, participants' predicted distress ratings, provided 2 weeks prior to the report of the breakup, overestimated their actual distress during the 3-month period following the breakup. Participants' actual distress decreased over time, but their predicted distress decreased

at roughly the same rate; these findings are consistent with an affective forecasting initial intensity bias but not with a decay bias. That is, even as participants were first reporting (at Time 0) that they had broken up with their romantic partner, they were not as distressed as they had predicted 2 weeks earlier. But participants did not make the additional error of predicting that their rate of recovery from the breakup would be slower than it actually was. In fact, participants both forecasted that they would and actually did experience decreasing distress as time elapsed after the breakup, but because they had initially overestimated their distress, participants' predicted distress ratings remained substantially higher than their actual distress even several months after the breakup.

A second set of analyses revealed that not all participants committed affective forecasting errors. The initial intensity bias was more pronounced for individuals who (a) were more (compared to less) in love with their partners, (b) felt it was less (compared to more) likely that they would soon begin a new relationship, and (c) played less (compared to more) of a role in initiating the breakup. These moderational effects were consistent with the typical form of the impact bias (in which mild predictions tend to be more accurate) and with several known affective forecasting mechanisms. Perhaps these accurate individuals were already preparing for the impending breakup and imagining the positive features of their new single life (focalism), or perhaps their reduced passion for their partner meant that their predicted and actual reports were made in a similarly cool, rational state (empathy gap). Additional research will be required to determine precisely which mechanisms are responsible for these effects. For now, these moderators join the ranks of a small handful of other naturally occurring individual differences, such as culture of origin (Lam, Buehler, McFarland, Ross, & Cheung, 2005) and temporal focus (Buehler & McFarland, 2001), that predict who is more or less susceptible to committing affective forecasting errors.

These findings are the first to address directly the time course of the affective forecasting error and to explore simultaneously the relative contributions of the initial intensity bias and the decay bias (see Wilson & Gilbert, 2003). The results illustrate why a within-subjects design with multiple time points is optimal for teasing apart these two possible biases: if we had only assessed actual and predicted distress, say, 10 weeks after the initial report of the breakup, the results would have appeared consistent with a decay bias. In other words, the difference between predicted and actual distress at this single point in time might have indicated participants' ignorance of the speed at which their emotional reactions decay. Using a longitudinal model with multiple time points (Singer & Willett, 2003), the present study revealed that all of the "action" in the affective forecasting error had occurred by the very first assessment.

A romantic breakup is in many ways an ideal event for testing hypotheses about affective forecasting (which

Table 1
Correlations between participants' Actual and Predicted Distress reports

Weeks since breakup	Correlation
0	.59**
2	.60**
6	.29
10	.28

** $p < .01$.

perhaps explains why it was the very first event explored by Gilbert et al., 1998). It does, however, represent only a single type of emotionally distressing event; it is certainly plausible that the initial intensity and decay biases play out differently depending on the event in question. Furthermore, for romantic breakups in particular, participants may be more likely to self-present by downplaying their actual distress to avoid appearing rejected and vulnerable. Future work across multiple affective domains will be helpful in determining to what extent the initial intensity bias but not the decay bias characterizes forecasting errors.

The present study contributes to our understanding of how people recover from a blow that beforehand seems unbearably crushing. The affective forecasting literature has demonstrated that recovery takes less time than people originally anticipate, and the present data suggest that these unexpected gains are realized remarkably soon after the distressing event. Whether the discrepancies between people's predicted and actual distress are caused by their psychological immune systems, their inability to foresee positive life events on the horizon, or their inaccurate affective theories, a romantic breakup is apparently not as upsetting as the average individual believes it will be. Does God only know what post-breakup maladies await individuals whose relationships terminate? Perhaps, but it is probable that living will continue to do them plenty of good.

Acknowledgment

Finkel's participation was supported by the National Science Foundation under Grant No. 0719780.

References

- Akert, R. M. (1998). Terminating romantic relationships: The role of personal responsibility and gender. Unpublished Manuscript, Wellesley College.
- Aronson, E., Wilson, T. D., & Akert, R. M. (2005). *Social psychology* (5th ed.). Upper Saddle River, NJ: Prentice Hall.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*, 497–529.
- Buehler, R., & McFarland, C. (2001). Intensity bias in affective forecasting: The role of temporal focus. *Personality and Social Psychology Bulletin*, *27*, 1480–1493.
- Davis, D., Shaver, P. R., & Vernon, M. L. (2003). Physical, emotional, and behavioral reactions to breaking up: The roles of gender, age, emotional involvement, and attachment style. *Personality and Social Psychology Bulletin*, *29*, 871–884.
- Gilbert, D. T., Gill, M. J., & Wilson, T. D. (2002). The future is now: Temporal correction in affective forecasting. *Organizational Behavior and Human Decision Processes*, *88*, 430–444.
- Gilbert, D. T., Lieberman, M. D., Morewedge, C. K., & Wilson, T. D. (2004). The peculiar longevity of things not so bad. *Psychological Science*, *15*, 14–19.
- Gilbert, D. T., Pines, E. C., Wilson, T. D., Blumberg, S. J., & Wheatley, T. P. (1998). Immune neglect: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, *75*, 617–638.
- Harter, S. (1999). *The construction of self: A developmental perspective*. New York: Guilford Press.
- Kermer, D. A., Driver-Linn, E., Wilson, T. D., & Gilbert, D. T. (2006). Loss aversion is an affective forecasting error. *Psychological Science*, *17*, 649–653.
- Kiecolt-Glaser, J. K., Fisher, L. D., Ogrocki, P., Stout, J. C., Speicher, C. E., & Glaser, R. (1987). Marital quality, marital disruption, and immune function. *Psychosomatic Medicine*, *49*, 13–34.
- Lam, K. C. H., Buehler, R., McFarland, C., Ross, M., & Cheung, I. (2005). Cultural differences in affective forecasting: The role of focalism. *Personality and Social Psychology Bulletin*, *31*, 1296–1309.
- Loewenstein, G. (1996). Out of control: Visceral influences on behavior. *Organizational Behavior and Human Decision Processes*, *65*, 272–292.
- Loewenstein, G. (2005). Hot-cold empathy gaps and medical decision making. *Health Psychology*, *24*, S49–S56.
- Mikulincer, M., & Shaver, P. R. (2007). *Attachment in adulthood: Structure, dynamics, and change*. New York: Guilford Press.
- Riis, J., Loewenstein, G., Baron, J., Jepson, C., Fagerlin, A., & Ubel, P. A. (2005). Ignorance of hedonic adaptation to hemodialysis: A study using ecological momentary assessment. *Journal of Experimental Psychology: General*, *134*, 3–9.
- Sbarra, D. A. (2006). Predicting the onset of emotional recovery following nonmarital relationship dissolution: Survival analyses of sadness and anger. *Personality and Social Psychology Bulletin*, *32*, 298–312.
- Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis*. New York: Oxford University Press.
- Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York: Wiley.
- Veroff, J., Douvan, E., & Kulka, R. A. (1981). *The inner American: A self-portrait from 1957 to 1976*. New York: Basic Books.
- Wilson, T. D., & Gilbert, D. T. (2003). Affective forecasting. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (pp. 345–411). New York: Elsevier.
- Wilson, T. D., & Gilbert, D. T. (2005). Affective forecasting: Knowing what to want. *Current Directions in Psychological Science*, *14*, 131–134.
- Wilson, T. D., Meyers, J., & Gilbert, D. T. (2003). "How happy was I, anyway?" A retrospective impact bias. *Social Cognition*, *21*, 421–446.
- Wilson, T. D., Wheatley, T., Meyers, J. M., Gilbert, D. T., & Axson, D. (2000). Focalism: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, *78*, 821–836.