

**The Peculiar Longevity of Things Not So Bad**

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Abstract

Intense hedonic states trigger psychological processes that are designed to attenuate them, and thus intense states may abate more quickly than mild states. Because people are unaware of these psychological processes, they may mistakenly expect intense states to last longer. In Study 1, participants predicted that the more contempt they initially felt toward a transgressor, the longer that contempt would last. In Study 2, participants predicted that their contempt for a transgressor who hurt them a lot would last longer than their contempt for a transgressor who hurt them a little, but precisely the opposite was the case. In Study 3, participants predicted that their contempt for a transgressor who hurt them a lot would last longer than their contempt for a transgressor who hurt someone else a lot, but precisely the opposite was the case. These errors of prediction are discussed as instances of a more general phenomenon known as the region-b paradox .

### **The Peculiar Longevity of Things Not So Bad**

“She will be more hurt by it, for Robert always was her favourite. She will be more hurt by it, and on the same principle, will forgive him much sooner.”

Jane Austen, Sense and Sensibility (1811/1996, p. 35)

In just under three million years the human brain nearly tripled in size, due in large part to the dramatic growth of the frontal lobe and its prefrontal cortex. This structure endowed human beings with unprecedented cognitive capacities, none of which was more important than the ability to travel mentally forward in time and preview the future (Banyas, 1999; Melges, 1982; Wheeler, Stuss, & Tulving, 1997). The ability to peer deeply into their own tomorrows meant that people could discover the consequences of an event without actually having to experience it. Modern human beings can envision different futures, envision their hedonic impacts, and then act to bring about those they deem most desirable and avoid those they deem dangerous, unprofitable, or upsetting. Whereas other animals learn by making mistakes or by watching others make them, human beings use their powers of affective forecasting to avoid mistakes that no one has ever made before.

Of course, even the most powerful adaptations have their limits, and research suggests that people often err when attempting to forecast their hedonic reactions to future events ranging from romantic breakups to serious illnesses (for reviews see Frederick & Loewenstein, 1999; Gilbert, Driver-Linn, & Wilson, 2002; Loewenstein & Schkade, 1999; Wilson & Gilbert, in press). What’s more, people make these errors even when they accurately anticipate the time, place, and manner in which the event will unfold. How can people be right about what will happen but wrong about how much they will like it when it does? One reason is that intense

hedonic states trigger a variety of processes that are designed to attenuate them (Taylor, 1991; Wilson, Gilbert, & Centerbar, 2002), ranging from the homeostatic processes that diminish a state's physiological impact (Sandvik, 1985; Solomon, 1980) to the defensive processes that diminish a state's psychological impact (Freud, 1937; Gross, 1999; Lazarus & Alfert, 1964; Taylor, 1991; Taylor & Brown, 1988). People tend to underestimate the power of these attenuating processes (Kahneman & Snell, 1992; Lieberman, Ochsner, Gilbert, & Schacter, 2001; Snell, Gibbs, & Varey, 1995), and thus they tend to overestimate the duration of their hedonic states (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998). This oversight can have a variety of paradoxical consequences, one of which we shall explore.

#### The Region- $\square$ Paradox

When a spoon falls off a table, any first-year physics student can calculate how long it will take to hit the floor. Because no invisible processes inside the spoon are actively working to speed it up or slow it down, the duration of its descent depends entirely on its initial position. The higher the table from which the spoon falls, the longer it takes to hit the floor—and it can never take longer for a spoon to fall from a low table than from a high one. In other words, for objects that do not actively respond to their circumstances, the relation between time and distance is strictly monotonic. On the other hand, for objects that do actively respond to their circumstances, the relation between time and distance can become briefly nonmonotonic. For instance, people tend to use faster modes of transportation to cover longer distances: An urban commuter may adopt the habit of walking to destinations within a mile of her origin and bicycling to more distant destinations. The paradoxical result of actively changing one's mode of travel when the journey exceeds a critical distance is that one will occasionally arrive at a distant destination more quickly than a near destination, briefly reversing the normal relation between time and distance. Figure 1 illustrates this paradox. Notice that although time and distance are

monotonically related within each of the three regions labeled  $\_$ ,  $\square$ , and  $\_$ , they are nonmonotonically related across regions. That is, it always takes the commuter more time to go to a distant point than to a close point within a single region, but it takes less time to reach any point in region- $\square$  than it does to reach the furthest point in region- $\_$ . Anyone who has flown from New York to London more quickly than they could have driven from New York to Boston has experienced the region- $\square$  paradox.

This paradox applies not only to time and distance, but also to the intensity and duration of various states. For instance, one might expect the intensity of a physical injury to determine the duration of one's recovery. But just as travelers take active steps to speed their journeys when their destinations are especially distant, injured people take active steps to speed their recoveries when their injuries are especially severe. Injured people swallow medicines, consult physicians, solicit therapies, and undergo surgeries, but because each of these remedies has its costs, people are much more likely to seek them when they have a heart attack than a hangnail. When people actively adapt their strategies for recovery to the severity of their injuries, they may paradoxically recover more quickly from severe injuries than from mild ones. A trick knee hurts longer than a shattered patella because the latter injury exceeds the critical threshold for pain and thereby triggers the very processes that attenuate it.

The psychological processes that attenuate distress can also have costs (Lazarus, 1985; Pennebaker, 1989; Richards & Gross, 2000; Wegner, 1993), and thus they tend to be triggered only when distress passes a critical threshold. People rationalize divorces, demotions, and diseases, but not slow elevators and uninspired burgundies. The paradoxical consequence is that people may sometimes recover more quickly from truly distressing experiences than from slightly distressing ones (Aronson & Mills, 1958; Gerard & Mathewson, 1966; Zimbardo, 1966). A wife may do the costly cognitive work necessary to rationalize her husband's infidelity ("I

guess men need to try this sort of thing once to get it out of their systems”) but not his annoying habits (“I guess men need to experiment with leaving their dirty dishes in the sink”), and thus the wife’s anger about her husband’s disorderliness may outlive her anger about his philandering.

### The Present Research

If people do not realize that the psychological processes that attenuate distress are triggered only when the severity of that distress passes a critical threshold, then they may mistakenly expect the longevity of distress to be a monotonic function of its initial intensity. In a sense, people may think of themselves as spoons. We sought to demonstrate that people do indeed expect intense distress to last longer than mild distress (Study 1), but that because of the region-□ paradox, this expectation can be precisely wrong (Studies 2 and 3).

## **STUDY 1: PREDICTING DURATION FROM INTENSITY**

### Method

Fifty seven male and 41 female students completed a questionnaire that asked them to imagine (1) that they asked someone for a date and were politely turned down; (2) that a person whom they had recently met failed to recognize them later; (3) that their roommate borrowed their boots without permission; (4) that their classmate failed to show up for a scheduled study session; (5) that an old friend of theirs joined a neo-Nazi group; (6) that they were denied use of a restaurant’s restroom because they were not a customer; (7) that they caught someone trying to break into their gym locker; (8) that their best friend had a romantic encounter with their former girlfriend or boyfriend; (9) that a careless driver dented their car in a parking lot and then sped away. Participants estimated the intensity of their initial reactions to the transgression by indicating how they thought they would feel about the transgressor “at the moment this happened” on a scale whose endpoints were labeled dislike very much (-4) and like very much (4). Participants estimated the duration of each reaction by indicating on the same scale how they

thought they would feel about the transgressor “one week later.”<sup>1</sup>

### Results

Table 1 shows the mean intensity and duration estimates for each transgression. The correlation between intensity and duration estimates across participants was  $r = .88$ ,  $p < .01$ , and there was no evidence of a curvilinear relationship between these variables (i.e., adding the square of intensity to a regression equation resulted in a trivial and nonsignificant increase in the amount of variance explained). We also correlated each participant’s intensity estimates with that participant’s duration estimates, thereby producing a correlation for each participant. (One participant who made the same numerical estimate for all nine duration questions was excluded because a correlation could not be computed). The distribution of within-participant correlations had a strikingly negative skew (-1.34), with a mean of .65 (SD = .30) and a median of .75. In short, participants clearly expected their feelings at the time of the transgression to be a powerful predictor of their feelings a week later.

### **STUDY 2: PARTNERS AND NONPARTNERS**

People expect that the more intense their hedonic reactions are, the longer those reactions will last. But if the psychological mechanisms that attenuate such reactions are triggered only at critical levels of intensity, then the region- $\square$  paradox suggests that there should be instances in which more intense reactions abate more quickly. In Study 2, participants were insulted by a person with whom they expected to interact (a prospective partner) or with whom they expected not to interact (a prospective nonpartner). Because people trust their interaction partners to make special efforts to be polite (Brown & Levinson, 1987; Fraser, 1990), they should feel worse when insulted by a partner than by a nonpartner and thus should expect to dislike the partner more than the nonpartner over time. Yet, just as a severe injury triggers the actions that will attenuate it, the intense distress caused by a partner’s insult should trigger the psychological processes that

attenuate it (Darley & Berscheid, 1967; Finkel, Rusbult, Kumashiro, & Hannon, 2002). As such, we predicted that (a) people would initially feel more distressed when insulted by a partner than by a nonpartner, (b) people would therefore expect that a few minutes after receiving the insult they would dislike a partner more than a nonpartner, but (c) because intense distress triggers the processes that attenuate it, people would actually dislike an insulting nonpartner more than an insulting partner. We tested the first of these predictions in Study 2a and the second and third predictions in Study 2b.

### Study 2a

Twenty one female and 5 male students completed a baseline measure of their hedonic state (“How are you feeling right now?”) by drawing a slash through 8 continuous 125 mm lines that were labeled at their endpoints. Seven of the lines were labeled with the phrases not at all and extremely and corresponded to one of these emotions: Excited, good, happy, hostile, insulted, proud, and upset. The eighth line was labeled with the phrases extremely negative and extremely positive.

Participants were then told that another participant (the rater) was already seated in an adjacent room, that they and the rater would each write an autobiographical story that the other would read, that on the basis of those stories they would assess each other’s personalities, and that each would then learn how they had been assessed. Participants in the partner condition were told that they would ultimately meet the rater and discuss their experiences in the experiment, whereas participants in the nonpartner condition were told that they would never meet the rater. In fact, there was no rater.

The personality assessment task. After participants wrote their autobiographical stories, the experimenter gave them a handwritten story that had ostensibly been written by the rater, and a written description of three personality types (adapted from Gilbert et al, 1998) that differed in

their positivity. Participants indicated which of the personality types best described the rater and reported their confidence in that assessment on a 125 mm continuous line whose endpoints were labeled with the phrases not at all and extremely. Next, participants estimated the extent to which their assessment had been influenced by several factors (e.g., their current mood, their partner's handwriting, etc.) and estimated which of the personality profiles best described them.

The insult. Next, participants were given a handwritten sheet indicating that the rater had assessed them with relatively high confidence as the worst of the three personality types. After placing the sheet on the desk, the experimenter asked participants to complete the same scales they had completed at baseline.

## Results<sup>2</sup>

We expected participants to feel more distressed when insulted by a partner than by a nonpartner. We averaged the eight measures taken at baseline ( $\alpha = .82$ ) and we averaged the eight measures taken after participants received the insult ( $\alpha = .81$ ). We subtracted these two measures to examine changes in the participants' hedonic states. As predicted, participants experienced a greater change in their hedonic state when insulted by a partner ( $M = -28.8$ ) than by a nonpartner ( $M = -13.5$ ),  $t(24) = 2.075$ ,  $p < .05$ . In Study 2b we examined how participants felt about the rater—and how participants thought they would feel about the rater—five minutes after being insulted.

## Study 2b

### Method

Twelve male and 17 female students were randomly assigned to play the role of an experiencer or a forecaster who was insulted by a partner or a nonpartner.

Experiencers. The procedure for experiencers was identical to the procedure used in Study 2a with two exceptions. First, participants made no ratings of their hedonic states. Second,

after receiving the insult, experiencers were left alone in their cubicles while the experimenter ostensibly went to make a photocopy. The experimenter returned five minutes later and asked experiencers to report how they felt about the rater on a scale whose endpoints were labeled with the words negatively (1) and positively (7).

Forecasters. The procedure for forecasters was identical to the procedure for experiencers with one exception. Before receiving the insult, forecasters were asked to estimate how they would feel about the rater five minutes after learning that the rater had assessed them with relatively high confidence as the worst of the three personality types. These ratings were made on a scale whose endpoints were labeled with the words negatively (1) and positively (7).<sup>3</sup>

## Results

We expected that forecasters would predict that they would like a partner less than a nonpartner five minutes after being insulted, but that experiencers would report feeling precisely the opposite. A weighted contrast analysis (as recommended by Rosenthal & Rosnow, 1985) confirmed this prediction,  $t(27) = 3.17$ ,  $p < .005$ . As Table 2 shows, the rater's role had opposite effects on forecasters' predictions and experiencers' reports. Although participants expected to feel more contempt for a partner than a nonpartner five minutes after being insulted, they actually felt less.

## **STUDY 3: VICTIMS AND BYSTANDERS**

Participants experienced more intense distress when insulted by a partner than when insulted by a nonpartner (Study 2a), and yet, contrary to their own predictions, they ended up liking an insulting partner more than an insulting nonpartner (Study 2b). This presumably happened because intense distress triggered the psychological processes that attenuated it. This reasoning makes a counterintuitive prediction. If victims of insults experience more intense distress than do bystanders, then the psychological processes that attenuate distress may be more

likely to be triggered for victims than for bystanders. As such, after a few minutes, victims may actually like a person who insults them more than bystanders do! If victims are unaware of the psychological processes that will attenuate their distress, then they should predict precisely the opposite. Study3 tested this prediction.

### Method

Twenty male and 36 female students were randomly assigned to play the roles of victim or bystander and of experiencer or forecaster.

### Procedure

Victims. The procedure for victims was identical to the procedures used in the partner condition of Study 2b.

Bystanders. Bystanders were told (a) that the rater and the victim were reading each other's stories and would soon be assessing each other's personalities, (b) that the victim and the rater would later interact and that both of them knew this, and (c) that the bystanders themselves would later interact with the victim but not with the rater. Bystanders read the three personality profiles used in Study 2, and were then given the handwritten story written by the victim. Bystanders were also given a handwritten story that had ostensibly been written by the rater but that had actually been written by a participant in the partner condition of Study 2b. (A different story was randomly selected for each bystander). Next, bystanders were shown the victim's assessment of the rater as well as the victim's self-assessment. Thus bystanders had precisely the same information that victims had.

Bystanders in the experiencer condition were given a handwritten sheet indicating that the rater had assessed the victim with relatively high confidence as the worst of the three personality types. After placing the sheet on the desk, the experimenter explained that he needed to print a copy of the next questionnaire and left the bystander alone in the cubicle. The

experimenter returned five minutes later and asked the bystander to report how he or she felt about the rater by marking a scale whose endpoints were labeled with the words negatively (1) and positively (7).

Bystanders in the forecaster condition were told that before they learned how the rater had assessed the victim, they should estimate how they would feel about the rater five minutes after learning that the rater had assessed the victim with relatively high confidence as the worst of the three personality types. Forecasters made this rating on a scale whose endpoints were labeled with the words negatively (1) and positively (7).

### Results

We expected that forecasters would predict that they would dislike an insulting partner more when they were the victim of the insult than when they were a bystander to it, but that experiencers would report feeling precisely the opposite. A weighted contrast analysis confirmed this prediction,  $t(56) = 3.24$ ,  $p < .01$ . As Table 3 shows, the participant's status had precisely opposite effects on forecasters' predictions and experiencers' reports. Although participants expected to feel more contempt for an insulting partner when they were victims than when they were bystanders, they actually felt less.

### **GENERAL DISCUSSION**

When Ovid wrote two millennia ago that "small things affect small minds," he was apparently unaware that when small things fail to trigger our defenses, they may attain a peculiar longevity that even great minds do not anticipate. Contrary to their own predictions, participants in our studies disliked least those who had hurt them most. This paradox arises because intense hedonic states are especially likely to trigger the psychological processes that attenuate them. Because people are unaware of these processes, they mistakenly expect more intense states to last longer than less intense states.

It is easy to imagine how such errors of prediction could become errors of action. An employee who is told that he must relinquish a file cabinet or move to a smaller office may be correct in believing that the minor inconvenience of losing some furniture will be less distressing than the major inconvenience of moving to smaller quarters. What he may fail to realize, however, is that the major inconvenience may be so distressing that it will trigger the psychological processes that attenuate it (“Now that I’m downstairs, I realize how much I like being close to the coffee machine”) whereas the minor inconvenience may not be quite distressing enough to trigger such processes (“Now that I have to stack my files on the floor I realize how much I hate my boss”). As such, the employee may choose the option that is initially the least distressing but that is ultimately the least satisfying. The present studies join others (e.g., Gilbert & Ebert, 2002) in suggesting that when people make decisions without regard for the psychological processes that different outcomes will trigger, they may do so at the expense of their ultimate satisfaction.

The region- $\square$  paradox provides a simple, unifying framework within which this and a host of otherwise disparate phenomena may be similarly understood. For instance, Trope and Fishbach (2002) have shown that people who are scheduled to undergo medical procedures are more concerned about “chickening out” when they expect the procedure to be extremely painful rather than slightly painful. As such, they tend to use counteractive self-control strategies (e.g., making social commitments, agreeing to pay large cancellation fees, etc.) only for extremely painful procedures. The ironic consequence is that people are ultimately more likely to “chicken out” of slightly painful than extremely painful procedures. This interesting phenomenon exemplifies the region- $\square$  paradox. Because self-control strategies are triggered by critical levels of anticipated painfulness, the normally monotonic relation between anticipated painfulness and the likelihood of “chickening out” is briefly reversed, and a more painful procedure can actually

induce greater compliance than a less painful one.

Many other phenomena take the same form and produce the same sort of paradoxical consequences. For instance, people may buy small rather than large amounts of forbidden foods because they believe that the amount they consume will be a monotonic function of the amount they keep in their kitchen cabinets. And yet, when one opens the cabinet, a full-sized Hershey® bar may trigger concerns about health and diet that a single Hershey's Kiss® does not. The paradoxical consequence is that people may actually eat more chocolate when the kitchen cabinet contains one Kiss® than when it contains a full-sized bar—a violation of the normally monotonic relation between availability and consumption. Or consider the fact that drivers may avoid long trips because they believe that the odds of being involved in an accident are monotonically related to the time they spend on the road. If a trip to another state triggers the decision to wear a seat belt while a trip around the block does not, the paradoxical consequence is that people may be more likely to sustain injuries in automobile accidents when they are taking short rather than long trips. Similarly, partygoers may limit their alcohol consumption because they believe that their blood alcohol levels are monotonically related to the likelihood that they will cause an automobile accident on the way home. If becoming thoroughly inebriated triggers prophylactic interventions (“We hid your car keys and called you cab”) while becoming slightly tipsy does not, the paradoxical consequence is that partygoers may be safer when they consume a pitcher of martinis than two glasses of chardonnay. The ease with which examples such as these are generated highlights the ubiquity of the region-□ paradox in everyday life, as well as the potential dangers of ignoring it.

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Footnotes

1. There are many ways to measure the predicted duration of any event (such as an affective reaction). One way is simply to ask people how long they expect the event to endure, but research suggests that people have considerable difficulty making estimates in temporal units (Zakay & Block, 1997). Another way is to ask people to predict whether the event will or will not still be occurring at different points in the future, which is what we have done. This method is conservative inasmuch as it risks Type II errors (e.g., two events may have different predicted durations and yet may both have abated by the particular time about which the experimenter has inquired).

2. Participants' assessments of themselves and the rater were entirely unremarkable and showed no interactions in this and all subsequent studies, and thus for the sake of brevity these data will not be discussed.

3. To avoid creating suspicion, we then asked forecasters to predict how they would feel about the rater if the rater assessed them as the other two personality types.

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Table 1: Forecasted Intensity and Duration of Disliking of Transgressor in Study 1

Transgression	Immediate Disliking (Intensity)	SD	Disliking 1 Week Later (Duration)	SD
1. Rejected	1.07	1.37	0.14	1.28
2. Not recognized	1.10	1.37	0.35	1.21
3. Borrowed boots	1.78	1.64	0.62	1.93
4. Stood up	1.94	1.26	0.07	1.29
5. Neo-Nazi	2.05	1.68	1.88	1.75
6. Restroom	2.46	1.51	1.13	1.72
7. Gym locker	2.97	1.42	2.13	1.69
8. Romantic betrayal	3.22	1.47	2.24	2.25
9. Dented car	3.47	1.10	2.51	1.81

Note: SD = Standard deviation; Larger values indicate greater intensity and duration of disliking of transgressor.

Table 2: Liking of Rater in Study 2b

Participant's Role	<u>Rater's Role</u>		Difference
	Partner	Nonpartner	
<hr/>			
Forecasters			
Mean	2.83	4.57	-1.74*
SD	1.17	1.51	
N	7	7	
Contrast weight	-1	1	
Experiencers			
Mean	4.57	3.33	1.24*
SD	.78	1.30	
N	7	8	
Contrast weight	1	-1	
<hr/>			

Higher values indicate greater liking. An asterisk (\*) indicates that the difference between cells is different than zero,  $p < .05$ .

Table 3: Liking of Rater in Study 3

Participant's Role	<u>Participant's Status</u>			Difference
	Victim	Bystander		
<hr/>				
Forecasters				
Mean	3.15	3.83		-0.68*
SD	.88	1.27		
N	20	12		
Contrast weight	-1	1		
Experiencers				
Mean	4.33	3.36		0.97**
SD	1.05	.92		
N	15	11		
Contrast weight	1	-1		
<hr/>				

Higher values indicate greater liking. A double asterisk (\*\*) indicates that the difference between cells is different than zero,  $p < .05$ , and an asterisk (\*) indicates that the difference between cells is different than zero,  $p < .10$ .

Figure Captions

Figure 1: The Region-□ Paradox: The relation between time and distance for a person who walks at 3 miles per hour (line W), a person who bicycles at 15 miles per hour (line B), and a person who walks to destinations that are less than a mile away and bicycles to destinations that are more than a mile away (bold line).

