

Psychological distance in hedonic prediction and consumption:
The surprising impact of distant events

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We demonstrate that, although consumers strongly believe that they will be less emotionally affected by more psychologically distant events, consumers' actual emotional reactions are often surprisingly insensitive to psychological distance. Specifically, readers of a sad story overestimated how much their emotional reaction to the story would be reduced by knowing that it is fictional or that it happened in the distant past; and winners of a prize overestimated how much their excitement would be dampened by knowing that the prize will only be available later. We propose that consumers overestimate the importance of the distancing information because they fail to appreciate the absorbing power of the hedonic experience. In support of this mechanism, we find that prize winners do adjust their emotional reaction to the delayed availability of the prize, but only when they are not currently absorbed by the experience of winning.

Would you prefer to purchase a lottery ticket with immediately available prizes or one with prizes that are available a month after the drawing? Would you be more enthralled by a horror film based on a true story or by a horror film that is entirely fictional? Would you be more captivated by a book about an event that recently happened in your hometown or by a book about an event that happened once upon a time in a faraway land? All of these scenarios present consumption experiences that are hedonic in nature, valued in large part because of the feelings that they evoke, both positive and negative. Furthermore, the hedonic events at the center of these consumption experiences (i.e., receiving a prize, the events in the horror story, the event described in the book) vary in their psychological distance from the consumer, that is, they vary in how far removed they are from the consumer's current personal reality. Some are psychologically nearer (immediately available, true, etc.) whereas others are more distant (available later, fictional, etc.). Not surprisingly, people tend to believe that events that are psychologically closer will have a stronger emotional impact. All else being equal, consumers tend to prefer lotteries with immediately available prizes, movies based on a real event, and stories that are closer to their personal reality.

Yet, in spite of these strong intuitions that psychologically closer events will have a stronger emotional impact, we will argue that the actual impact of psychological distance often falls far short of consumers' expectations. More specifically, we propose that consumers tend to underestimate the emotional intensity of hedonic experiences when the object of the experience is removed from their current reality, such as when they read fictional stories or win delayed rewards. Thus, to the extent that consumers are

looking to maximize hedonic intensity, they may choose to forego alternatives that would ultimately have been satisfying.

Surely, psychologically distant events will often have a reduced emotional impact compared to similar events that are psychologically closer to the consumer.

Psychologically close events tend to be construed at a more concrete and vivid level, and so tend to be more emotionally evocative than psychologically distant events (Larsen and Ketelaar 1991). Consumers should feel less sad when reading a novel that recounts a fictional tragedy rather than an actual disaster, and they should be less excited about a present they'll receive in the future than about a present they're unwrapping right now. However, as we will argue, there are several mechanisms that limit the extent to which psychological distance dampens the emotional impact of an experience. Furthermore, consumers are largely unfamiliar with these mechanisms, leading them to overestimate the attenuating impact of psychological distance (and underestimate the emotional force of experiences that center on psychologically distant objects).

We will propose that consumers often approach psychologically distant experiences from a more proximal perspective: readers take the protagonist's perspective and immerse themselves in fictional stories, while future gift receivers imagine what it would be like to receive the gift right now. Although consumers do adjust this perspective (for the fictional nature of the story and the anticipated nature of the gift), hedonic experiences tend to be particularly absorbing, leaving few attentional resources for incorporating the psychological distance information (Morewedge et al. 2010). As a result, the adjustment for psychological distance will often be insufficient, resulting in

surprisingly similar affective reactions for psychologically distant versus near experiences.

Our proposal that the attenuating effect of psychological distance falls short of people's expectations contrasts with many of the prior findings in the domains of affective forecasting and psychological distance. Previous affective forecasting studies have demonstrated that people commonly overestimate the intensity of their affective reactions (e.g., Gilbert et al. 1998, Wilson et al. 2000) and fail to adjust for factors that attenuate their emotional experience (Gilbert, Driver-Linn, and Wilson 2002). In contrast, we propose specific conditions under which people tend to *underestimate* the emotional intensity of their experience because they over-adjust for a potentially attenuating factor (i.e., psychological distance). Furthermore, whereas a wealth of studies has shown that psychological distance can have a pervasive influence on people's perceptions (Trope and Liberman 2003), decisions (Liberman and Trope 1998), and feelings (Ebert 2010; Ekman and Lundberg 1971; Suh, Diener, and Fujita 1996; Van Boven, White, and Huber 2009), we suggest that psychological distance can often be more malleable—and therefore less influential—than is often assumed. Although we may read about a fictional event that happened in the distant past, we may nevertheless imagine this event as if it is real and happening now, thus magnifying our emotional reaction to the event.

In the following section we discuss prior research findings that led to the development of our proposition. We then present six studies that test and provide support for this proposition, rule out alternative explanations, identify an important boundary condition, and show that this effect can lead to sub-optimal consumer decisions.

CONCEPTUAL BACKGROUND

Many consumer experiences include an important affective component, which is usually positive (people enjoy watching funny movies, winning sweepstakes, getting a massage, etc.), but can also be negative, such as watching horror films (Andrade and Cohen 2007) or reading melodramatic stories (Argo, Zhu, and Dahl 2008). When choosing between experiences such as these, consumers are usually guided by how they expect each experience will make them feel (Mellers and McGraw 2001; Pham 1998; Shiv and Huber 2000; Simonson 1992). Often, consumers will try to predict which experience will have the biggest emotional impact. For instance, people tend to prefer melodramatic stories that are more absorbing and, thus, elicit more emotion (Argo et al. 2008). Alternatively, they may sometimes want to minimize the emotional impact of an experience, as when the experience is a “necessary evil” (e.g., a painful medical procedure), or when they are afraid of moving beyond the optimal point (e.g., by watching a sad movie when they are already feeling down).

However, people may have a difficult time predicting the emotional impact of experiences, as past research has shown that people are susceptible to various errors and biases when forecasting their feelings. For instance, people tend to mispredict the intensity and duration of their future feelings (Buehler and McFarland 2001; Gilbert and Wilson 2007; Loewenstein and Angner 2003; MacInnis, Patrick, and Park 2006), as well as the extent to which their feelings are influenced by specific contextual and structural features of the experience (Gilbert et al. 2002; Gilbert and Ebert 2002; Nelson and Meyvis 2008; Novemsky and Ratner 2003). In many cases, people overestimate the emotional intensity of experiences. For instance, people mistakenly believe that a

message will remain highly enjoyable over time (Nelson and Meyvis 2008), that a computer providing them with negative personality feedback will leave them very distraught (Gilbert et al. 1998), or that making an important purchase will affect their happiness weeks after the event (Meyvis, Ratner, and Levav 2010). These overestimations of emotional intensity occur because people fail to appreciate several processes that tend to attenuate the emotional experience, including adaptation (adaptation neglect), ego-protective rationalizations (immune neglect), and the occurrence of random other events (focalism) (Gilbert, Driver-Linn, and Wilson 2002). In the current research, we examine another factor that should reduce the emotional intensity of these experiences: the psychological distance to the object of the experience. However, as we will demonstrate, unlike the previously mentioned mechanisms, people are highly aware of the emotion attenuating properties of psychological distance and, rather than ignore it, they systematically overestimate its impact. As a result, they may *underestimate* their emotional reaction to more psychologically distant events.

Events are more psychologically distant if they happen to someone other than you (social distance, a friend receiving a discount rather than yourself), if they are removed in time (temporal distance, receiving a prize later rather than now), if they are removed in place (spatial distance, a company supporting a charity in a remote town rather than a nearby town), or if they are fictional rather than real (hypotheticality, watching a movie based on a fictional story rather than a true story). How does this psychological distance affect consumers' emotional experience of these events? We know that people process and react to events differently when they are psychologically distant rather than close. For instance, people tend to construe more psychologically distant events at a higher,

more abstract level of representation (Liberman, Trope, and Stephan 2007). More important for this research, more distant events should also evoke weaker affective reactions. People react with less intense feelings to events or objects that are spatially distant (Ekman and Bratfisch 1965; Latane 1981), that are temporally distant in the past or future (Ebert 2010; Ekman and Lundberg 1971; Suh et al. 1996; Van Boven et al. 2009), that involve more socially distant individuals (Newcomb 1961), or that are hypothetical rather than real (Johnson 2004). This is hardly surprising: people feel, by definition, less involved with (more detached from) events that they perceive as more psychologically distant, which in turn implies weaker affective reactions. We therefore expect that people will routinely predict that they will experience weaker affective reactions to events that are more psychologically distant.

But do people always react less emotionally to more distant events? We propose that psychologically distant events can often have a surprisingly strong emotional impact, equivalent to a similar psychologically near event. In contrast to consumers' intuitions, knowing that a movie is entirely fictional rather than based on a true story may not detract from its emotional power. Similarly, winning a sweepstakes which will yield a prize in a month may not cause less excitement than winning a prize that will be available immediately. Although we concur with the common belief that more psychologically distant events tend to be less emotionally evocative, we propose that there are substantial limitations to the attenuating effect of psychological distance. These limitations result from mechanisms that consumers are not aware of, leading them to overestimate the impact of psychological distance (and underestimate the emotional power of psychologically distant events).

Our hypothesis that psychological distance tends to have a weaker impact on consumers' emotions than they would intuitively expect is based on two propositions. First, we propose that when people are confronted with a psychologically distant event, they often start out by taking a psychologically near perspective and subsequently adjust for the psychological distance information. For instance, when people read a fictional story that is happening to someone else in a far away country at some distant time, they will immerse themselves in the story (i.e., be transported by the story, Green and Brock 2000) and initially process the information from the perspective of the protagonist, to whom the story is happening here and now (though the extent to which people actually do so depends on their level of empathy, see Argo et al. 2008). Past research is consistent with the idea that psychological distance information is incorporated after people first consider an event as psychologically near. People take someone else's perspective by adjusting from their own perspective (Epley et al. 2004), suggesting that socially distant information may initially be processed as socially near. Similarly, people estimate value for future events by initially valuing near events before incorporating information about the delay to the event (Ebert 2001). Furthermore, when reading information known to be fictitious, people initially assume it is true and then actively "unbelieve" it (Gilbert, Tatarodi, and Malone 1993).

Our second proposition is that consumers who are engaged in a hedonic experience are often too absorbed by this experience to make the necessary adjustment to fully take the psychological distance information into account. Indeed, resources are required for adjusting from one's own perspective to someone else's perspective (Epley et al. 2004), for incorporating temporal delay information (Ebert 2001), and for

“unbelieving” information known to not be true (Gilbert et al. 1993). Moreover, recent research has shown that hedonic experiences are particularly absorbing, impairing attention to other non-emotional information (Anderson 2005; Derryberry 1993; Eastwood, Smilek, and Merikle 2001). As Morewedge and colleagues (2010) have shown, this captivation by the hedonic experience leaves few resources for taking the context of the experience into account. We thus expect that consumers who are absorbed by a hedonic experience will often fail to adjust for the psychological distance to the object of that experience, leading them to show similar affective reactions to a psychologically distant event (e.g., reading a fictional story or winning a prize they will receive in a month) as to a psychologically close event (e.g., reading a story that actually occurred or winning a prize they will receive immediately).

THE PRESENT RESEARCH

In sum, we hypothesize that consumers will overestimate the extent to which the emotional intensity of a hedonic experience (such as watching a dramatic movie or winning a prize) is influenced by their psychological distance from the object of that experience. We examine our hypothesis in six studies. In the first two studies (studies 1A and 1B), we demonstrate the proposed effect. Specifically, we observe that readers of a sad story overestimate the extent to which the absorbing power of the story is reduced by the knowledge that the story happened 10 years ago (rather than recently) or that it is fictional (rather than a real event). In study 2, we replicate this effect and demonstrate that the results are not based on salience or demand effects. In study 3, we observe the

same effect with a very different hedonic experience, the winning of a prize. People overestimate the extent to which their happiness about winning a prize will be dampened by the knowledge that the prize will only be available in six weeks rather than immediately. In study 4, we identify an important boundary condition for our results. Although the immediate (versus delayed) availability of the prize does not affect people's happiness when they are currently absorbed by the hedonic experience (i.e., winning the prize), it does influence their feelings after a delay, that is, when they have more resources available to incorporate the psychological distance information. Lastly, in study 5, we demonstrate that people's overestimation of the affective impact of psychological distance information can lead them to make sub-optimal consumption decisions.

STUDY 1A: READING SAD STORIES THAT ARE REAL OR FICTIONAL

In the first two studies, we used the experience of reading a sad story to test our central hypothesis that people tend to overestimate the impact of psychological distance on the intensity of their emotional reaction. In the first study (study 1A), participants were either told that the story was real or that the story was fictional, whereas in the second study (study 1B), participants were either told that the event had happened recently or ten years ago. We expected that forecasters would overestimate the impact of this information on readers' emotional reaction to the story.

Method

Participants were 52 undergraduate students who completed the study for partial course credit. Participants were randomly assigned to an experience condition (*experiencer* or *forecaster*) and a psychological distance condition (*real* or *fictional*). All participants read a tragic story about a girl who dies from meningitis.

Before reading the story, *experiencers* were either told that it was real (obtained from a U.S. newspaper about a real event that happened recently) or that it was fictional (written to resemble a U.S. newspaper story that could have happened recently, but did not actually happen). Next, on the following page, they were asked to write down where the story came from to make sure they had accurately processed the information¹. Immediately after reading the story, they indicated how the story had emotionally affected them on three 9-point scales (1 = *Not at all*, 9 = *Very much*) measuring to what extent the story made them feel sad, to what extent the story made them feel distressed, and to what extent they got absorbed in the story.

Forecasters were simply asked to read the story without any knowledge of the real or fictional nature of the story. After reading the story, they were asked to predict how the story would have emotionally affected them either if they had been told before reading it that it was real or if they had been told that it was fictional (depending on the psychological distance condition they had been assigned to and using the same wording as used in the corresponding *experiencer* condition). Next, they predicted their reactions using the same scales as used by the *experiencers*.

Results

¹ In this study and the following studies, all participants accurately recalled the psychological distance information.

The three emotional impact ratings were highly correlated ($\alpha = .73$) and thus pooled into a summary measure of emotional intensity by averaging the ratings for each participant. Participants' summary ratings (see figure 1 for means) were submitted to a 2 (Experience: experiencer, forecaster) x 2 (Psychological distance: real, fictional) ANOVA that revealed main effects of experience ($F(1, 48) = 7.27, p = .01$) and psychological distance ($F(1, 48) = 8.93, p = .004$), which were qualified by the hypothesized interaction: Forecasters overestimated the effect of the psychological distance information on the emotional reactions of the experiencers ($F(1, 48) = 16.66, p < .001$). Whereas forecasters expected weaker emotional reactions to a fictional story than to a real story ($M_{\text{real}} = 6.28, M_{\text{fictional}} = 3.79; F(1, 48) = 24.99, p < .001$), experiencers were just as emotionally affected by the fictional story as by the real story ($M_{\text{real}} = 5.79, M_{\text{fictional}} = 6.18; F < 1, ns$).

Discussion

Participants systematically mispredicted the extent to which psychological distance would change their affective reactions to a sad story. Forecasters expected less intense emotional reactions when reading about a psychologically distant (fictional) event than when reading about a psychologically near (real) event. Yet, in fact, readers reported equally intense emotional reactions when they thought they were reading a fictional story as when they believed they were reading a real story. In study 1B, we attempt to replicate

this result using a different manipulation of psychological distance: whether the sad stories describe events from the recent or distant past.

STUDY 1B: READING SAD STORIES ABOUT RECENT OR DISTANT PAST EVENTS

Method

Participants were 249 university students who received either partial course credit or a piece of candy for completing the study. We used the same procedure as in study 1A, with the following exceptions. First, we used a different tragic story, about a student dying in a dorm fire. Second, we used a different manipulation of psychological distance: participants were told that it was a real newspaper story that either occurred recently or 10 years ago (the story “was obtained from a U.S. newspaper that is 10 years old. It describes a real event that happened 10 years ago.”).

Results

The three measures of emotional impact (sad, distressed, and absorbed) were highly correlated and averaged to form a summary emotional intensity measure ($\alpha = .75$). These summary ratings were again submitted to a 2 (Experience: experiencer, forecaster) x 2 (Psychological distance: recent, 10 years ago) ANOVA, which only revealed a significant interaction. As in study 1A, participants reliably overestimate the effect of the

psychological distance information on their emotional reaction ($F(1, 244) = 6.39, p = .01$; see figure 2 for means). Although forecasters predicted less intense emotional reactions to an old story than to a recent story ($M_{\text{recent}} = 6.23, M_{10 \text{ years ago}} = 5.60; F(1, 244) = 5.58, p = .02$), in fact, the recency of the event did not substantially affect the emotional reaction of the reader ($M_{\text{recent}} = 5.48, M_{10 \text{ years ago}} = 5.80; F(1, 244) = 1.45, ns.$).

Discussion

As in study 1A, participants predicted that they would experience less intense emotional reactions to a story about a psychologically distant (old) event than about a psychologically near (recent) event, while readers were actually just as affected by the distant story as by the near story.

These results are consistent with our proposition that people tend to overestimate the extent to which their psychological distance to an event will affect their emotional reaction to that event. However, there are two (less interesting) alternative accounts for these results. First, at the moment that participants rate their emotional reaction to the story, the psychological distance information may simply be more salient to forecasters than to experiencers, and therefore also have a greater effect on forecasters. Whereas forecasters are given the psychological distance information (i.e., the realism or timing of the story) immediately before making their ratings, experiencers are given this information much earlier, before reading the story (though experiencers did write down the information immediately after receiving it). A second possibility is that forecasters may assume that they should use the psychological distance information simply because

it is presented to them, that is, the results could be driven by a demand or conversational norm effect. Although this information is presented to experiencers as well, the difference in presentation timing between the conditions may result in a stronger demand effect for forecasters than for experiencers. We test these alternative accounts in study 2.

STUDY 2: TESTING SALIENCE AND DEMAND ACCOUNTS

As in study 1A, participants in study 2 were asked to read a sad story that was either presented as fictional or as reporting a real event. To test for salience and demand effects, we added two conditions. First, to test the salience explanation, we added an extra experiencer condition in which psychological distance information was presented both before they read the story and again immediately before they reported their emotion ratings. If, in the first studies, the psychological distance information had a greater effect on forecasters' ratings due to increased salience of the information, then the psychological distance information should have at least as strong an effect on the experiencers in this new condition (given that they received the information twice, including immediately before giving the ratings).

Second, to test the demand effect explanation we added an extra forecaster condition in which the participants were asked to predict the emotional impact of the story on readers if these readers were told that the story is real (or fictional) *after* they've read the story (rather than before reading the story, as in the standard forecaster condition). If, as we hypothesized, forecasters genuinely believe that the psychological distance information changes the extent to which readers are emotionally affected by the

story while reading it (i.e., that they process it in a more detached way when psychological distance is greater), then forecasters should predict a stronger impact of the information when readers receive it *before* reading the story (as in the standard forecaster condition) than when they receive it *after* reading the story (as in the new forecaster condition). However, if forecasters are instead using the psychological distance information just because it is presented (and they therefore assume that it has to be used), then they will use the information regardless of whether they are told that it is presented before or after the story. That is, if our prior results were driven by a demand effect, then there should be no difference between the standard and new forecaster conditions.

Method

Participants were 241 university students who received either partial course credit or financial compensation for completing the study. The procedure and materials used were similar to study 1A. Participants were randomly assigned to one of eight experimental conditions, crossing two psychological distance conditions (real vs. fictional story) with four experience and timing conditions: forecaster-before, forecaster-after, experiencer-before, experiencer-before-and-after. All participants read a tragic story about a girl who dies from meningitis and then rated the extent to which the story emotionally affected them. The *forecaster-before* and *experiencer-before* conditions replicated the corresponding conditions in study 1A. Participants in the *experiencer-before-and-after* condition were told both before and after the story (i.e., immediately prior to providing the emotion ratings) that the story described a real (fictional) event.

Participants in the *forecaster-after* condition were asked to predict the emotional impact of the story on people who learned after reading the story that it described a real (fictional) event.

Results

The three measures of emotional impact (sad, distressed, and absorbed) were again highly correlated and averaged into a single measure ($\alpha = .83$). This pooled measure of emotional impact was submitted to a 2 (Psychological distance: real, fictional) \times 4 (Experience: experiencer-before, forecaster-before, experience-before-and-after, forecaster-after) ANOVA, which revealed main effects of distance ($F(1, 233) = 36.38, p < .001$) and experience ($F(3, 233) = 2.31, p = .077$) and, most important, a reliable interaction ($F(3, 233) = 4.98, p = .002$; see figure 3 for means). We will next decompose and test the specific components of this interaction.

Replicating the basic effect. We first examined whether we replicated the previous results by testing whether the effect of the distance information differed between the forecaster-before and experiencer-before conditions. Consistent with the results from studies 1A and 1B, forecasters overestimated the effect of the psychological distance information on the experiencers' emotional response to the story ($F(1, 233) = 12.84, p < .001$). Whereas forecasters believed that readers would be less emotionally affected by the story when they knew in advance that it was fictional ($M_{\text{real}} = 6.97, M_{\text{fictional}} = 4.30, F(1, 233) = 38.51, p < .001$), experiencers reported a similar emotional response

regardless of the real versus fictional nature of the story ($M_{\text{real}} = 6.59$, $M_{\text{fictional}} = 6.10$, $F(1, 233) = 1.29$, *ns.*).

Is the effect due to a difference in salience? To examine the salience explanation, we turn to the experiencer-before-and-after condition and compare the effect of the distance information in this condition to its effect in the forecaster-before condition. Even when experiencers were reminded of the fictional (or real) nature of the story immediately prior to rating its emotional impact, this information still affected experiencers significantly less than expected by the forecasters (experiencers: $M_{\text{real}} = 6.71$, $M_{\text{fictional}} = 5.88$; forecasters: $M_{\text{real}} = 6.97$, $M_{\text{fictional}} = 4.30$; interaction: $F(1, 233) = 9.10$, $p = .003$). The persistence of the forecasting error indicates that the difference between forecasters and experiencers was not merely due to a difference in salience.

Is the effect due to a conversational norm (demand) effect? To test the conversational norm account of the effect, we turn to the forecaster-after condition and compare the effect of the distance information in this condition to its effect in the forecaster-before condition. If forecasters are only relying on the distance information because they believe they need to use the information that is provided by the experimenter, then they should rely on this information regardless of when it is said to be presented to the readers. However, if forecasters genuinely believe that knowing the fictional nature of the story will reduce readers' emotional response while reading the story, then the predicted effect of the information should be reduced if it is said to be presented only after the story. Consistent with this last account, forecasters predicted a significantly smaller effect of the distance information when it was said to be presented after the story ($M_{\text{real}} = 6.76$, $M_{\text{fictional}} = 5.57$) than when it was said to be presented before

the story ($M_{\text{real}} = 6.97$, $M_{\text{fictional}} = 4.30$; interaction: $F(1, 233) = 5.98$, $p = .015$). These results suggest that predictors are not simply using the distance information because they feel they have to, but rather they use it to the extent that they believe it will affect readers' emotions.

Discussion

As in the previous studies, participants overestimated the impact of psychological distance on the affective impact of a sad story. Although forecasters predicted that readers would be less affected by the story if they knew in advance that it was fictional rather than real, readers in fact showed equally strong emotional reactions for the fictional story as they did for the real story. In addition to replicating the effect, the results of study 2 also demonstrate that the difference between forecasters and experiencers is not due to salience or demand effects. Even when readers were reminded of the fictional (or real) nature of the story immediately before giving their ratings, they were still less influenced by this information than the forecasters predicted; indicating that the effect is not driven by differential salience of the information. Furthermore, forecasters did not use the psychological distance information indiscriminately. When forecasters were told that readers received the information only after reading the story, they predicted a significantly smaller effect of the information on the emotional impact of the story. This indicates that forecasters did not simply feel compelled to use the information because it was presented by the experimenter (as suggested by a demand

effect or conversational norm account), but rather that they used the information to the extent that they believed it would influence readers' emotional response.

STUDY 3: WINNING A PRIZE

Thus far, we have demonstrated that people tend to overestimate the extent to which the emotional impact of a story is reduced by information that increases the reader's psychological distance from the story (i.e., the fictional nature of the story or the fact that it happened a long time ago), and that this forecasting error is not due to salience or demand effects. We've proposed that, instead, readers are too absorbed by the experience to fully take the distancing information into account—and that forecasters ignore or underestimate this phenomenon. This mechanism is not specific to the consumption of stories, but should generalize to other hedonic experiences as well. Therefore, in this next study, we extend our research to a different consumer experience with a strong hedonic component: the winning of a prize. The experiencers in this study played a game and won a prize, which was either available immediately, or available after a six week delay. As such, this study both examines a different hedonic experience (winning a prize) and a different type of psychological distance (temporal distance into the future). Consistent with our previous results, we expected that forecasters would overestimate the extent to which the delayed availability of the prize would reduce people's happiness about winning the prize.

Method

Participants were 84 university students who received partial course credit for completing the study. Participants completed the study in sessions of up to eight people that alternated between *experiencer* and *forecaster* conditions. Within each session, participants were randomly assigned to a psychological distance condition (*immediate prize* or *delayed prize*). All participants completed a computer-based Stroop task (Jensen and Rohwer 1966) lasting about 5 minutes. However, whereas experiencers expected that they could win a prize based on their performance, forecasters had no such expectation.

Before completing the task, *experiencers* were told that if they performed well (in the top 10% of students completing the task) they would win a prize. They were shown two prize options, matched on value: a 1GigaByte USB memory stick and a university coffee mug. Depending on the psychological distance condition, they were either told that the prize would be available immediately after the study or that it would be available six weeks later (for pick up or to receive by mail), after which they selected which of the two prizes they would like to receive if they won. They were asked to complete the task “as quickly and accurately” as they could, were reminded of the prize possibility, and given instructions for the Stroop task. After completing the task, they waited for a short delay “while the computer determines whether you win a prize” and were reminded what the prize would be and when it would be available. All experiencers were then told they had won the prize they had selected, after which they were asked to answer several survey questions. They were first asked to indicate whether they had won a prize (for consistency with the cover story) and then asked to rate their feelings about winning the prize on three scales: how happy they were about winning the prize (1 = *Not at all*, 9 =

Very much), how excited they were about winning the prize (1 = *Not at all*, 9 = *Very much*), and how happy they were about winning the prize relative to finding a \$10 bill on the street (-4 = *Much less happy (relative to finding \$10)*, 0 = *About the same happiness*, 4 = *Much more happy (relative to finding \$10)*). They also rated how much they liked the item they chose as a prize (i.e., the USB stick or the coffee mug) to be later included as a covariate in the analysis. In addition, to make sure that they had accurately processed and memorized the psychological distance information, they were asked to indicate when they would receive the prize. Finally, they were given instructions for getting their prizes immediately or in six weeks, depending on their psychological distance condition.

The time course of the procedure was identical for experiencers and forecasters: both groups experienced the psychological distance manipulation and completed the dependent variables at exactly the same moments during the procedure. In contrast to the experiencers, *forecasters* were told that they were “pilot testing” the task and could not win a prize. Forecasters did complete the same Stroop task and answered the same survey questions with the following exceptions: 1) all instructions were presented in reference to the participants who would complete the study, e.g., “if they perform well on this task (in the top 10% of students who complete it) they will win a prize”, 2) they did not indicate a prize preference during the computer task; 3) they did not win a prize; 4) they rated how they thought “a participant in the real live version of the study will feel about winning this prize” using the same three scales; and 5) they indicated which prize they would prefer if they were a participant, before rating their liking of the prize item.

Results and Discussion

Winning a prize was generally viewed by participants as a positive experience. The overall means of the three feelings ratings were: happiness, $M = 6.88$; excitement, $M = 6.16$; relative happiness, $M = -0.85$. The feelings ratings were highly correlated ($\alpha = .72$) and were therefore standardized and averaged to form a summary measure of participants' emotional reaction to winning the prize. These summary ratings were submitted to a 2 (Experience: experiencer, forecaster) \times 2 (Psychological distance: immediate prize, delayed prize) ANCOVA with participants' liking of their preferred prize as a covariate². As expected, the effect of the timing of the prize on the happiness ratings depended on whether participants were experiencers or forecasters ($F(1, 79) = 4.22, p = .04$; see figure 4 for means). Whereas forecasters expected that prize winners would be less happy if they knew they would receive the prize after a six week delay rather than immediately ($M_{\text{immediate}} = 0.08, M_{\text{delayed}} = -0.38; F(1, 79) = 4.39, p = .04$), the actual prize winners were equally happy regardless of when they expected to receive their prize ($M_{\text{immediate}} = 0.15, M_{\text{delayed}} = 0.18; F(1, 79) = 0.70, p = .41$).

Thus, as in the previous studies, forecasters expected that affective reactions to a psychologically distant event (receiving a prize later) would be less intense than their reaction to a psychologically near hedonic event (receiving an immediate prize), while actual prize winners were in fact equally happy regardless of the psychological distance to the event. These results demonstrate that the overestimation of the impact of psychological distance on people's emotional reaction to a hedonic event is not limited to

² Liking of the preferred prize was not influenced by any manipulation (F 's < 1) and was included as a covariate to reduce error variance due to variability in individual preferences.

readers' reactions to tragic stories, but also generalizes to the emotional intensity of a very different, positive experience (winning a prize).

We have proposed that people are less affected by their psychological distance from the event than they intuit because they are too absorbed by the core hedonic experience (the tragic event being related in the story, the feeling of winning). As a result, they do not have sufficient resources available to take the distance information into account and appropriately distance themselves from the event. If this is indeed the case, then the impact of the psychological distance from the event should increase if people's feelings are assessed after a delay instead of immediately after the hedonic experience. Indeed, after a delay, absorption in the hedonic experience should be reduced, freeing up the necessary resources to take the distance information into account. We test this proposition in the next study.

STUDY 4:

ENABLING EXPERIENCERS TO INCORPORATE PSYCHOLOGICAL DISTANCE IN THEIR EMOTIONAL REACTIONS

In study 4, all participants completed the Stroop task and were told that they had won a prize, which was either available immediately or after four weeks. To test whether people are more influenced by psychological distance when they are not currently immersed in the hedonic experience, the emotional reaction to winning the prize was measured either immediately after winning (as in study 3) or after a filler task. We expected that knowing that the prize would only be available in four weeks would

dampen winners' emotional reaction after the filler task, but not immediately after winning the prize.

Method

Participants were 186 university students who received partial course credit for completing the study. They were randomly assigned to a filler condition (*filler* or *no-filler*) and a psychological distance condition (*immediate prize* or *delayed prize*). The procedure and materials for the no-filler conditions were identical to those for experiencers in study 3, except for the following differences. First, the delayed prize was available after four (rather than six) weeks. Second, immediately after completing the dependent variables, participants also rated the importance to their feelings of the prize itself and of when they would receive the prize (1 = *Not at all*, 9 = *Very much*). The filler conditions differed from the no-filler conditions in that participants completed a short filler task after being told they had won their chosen prize and before rating their feelings. In this filler task, participants viewed a series of visual patterns for 2 to 3 minutes and then either evaluated the patterns (first 75 participants) or performed a short recognition memory test (the remaining 111 participants). The nature of the filler task did not affect participants' responses, nor did it interact with the manipulations.

Results

As in study 3, winning the prize was perceived as a positive experience (happiness, $M = 6.81$; excitement, $M = 6.23$; relative happiness, $M = -0.54$) and the three feelings ratings were highly correlated ($\alpha = .69$). They were therefore standardized and averaged to form a summary measure of participants' emotional reaction to winning the prize. We expected that knowing that the prize would only be available in four weeks would reduce participants' emotional response to the winning of the prize—but only in the filler condition (that is, only after the absorption by the hedonic experience had lessened). To test this prediction, we contrasted the emotional reaction in the filler / delayed prize condition to the emotional reaction in the other three conditions.

Consistent with our hypothesis, participants were less excited about winning the prize when they were asked after the filler task and knew that they would receive the prize in four weeks ($M = -0.21$) than when they expected to receive the prize immediately ($M = 0.20$) or when they were asked right after winning, regardless of whether they would receive the prize immediately ($M = 0.07$) or in four weeks ($M = 0.05$) ($F(1, 148) = 5.29, p = .02$; see figure 5)³. Consistent with study 3, in the absence of a filler task, participants showed no impact of the prize availability information ($F < 1, ns.$). However, after an intervening filler task, the prize availability did affect their responses ($F(1, 148) = 5.29, p = .02$), indicating that they were incorporating the psychological distance information in their experience, thus tempering their feelings. The filler task appeared to change how participants incorporated the psychological distance information rather than change the type of information that participants perceived as relevant, given that the filler task did not affect the self-reported importance to their feelings of the prize timing ($F(1,$

³ Since participants' liking of their preferred prize, assessed after the dependent variables, showed a marginal effect of the filler manipulation ($p = .09$), we decided not to include it as a covariate in the analyses.

148) = 1.83, *ns*) or of the prize itself ($F < 1$, *ns*), nor did these importance weights interact with the psychological distance manipulation (both F 's < 1.79, *ns*).

Discussion

We have proposed that psychological distance information affects people's emotional reactions less than they would intuitively predict because they are absorbed by the hedonic experience, leaving them few resources to incorporate the distance information into their reaction. Consistent with this proposition, study 4 showed that knowing that a prize would only be available at a later point in time reduced prize winners' emotional intensity only after they were no longer absorbed by the excitement of winning, thus freeing up attentional resources to incorporate the psychological distance information.

Given that the objective of this study was to examine when consumers' affective reactions are sensitive to psychological distance information, the design was restricted to experiencer conditions and thus did not include forecasters. However, the observed pattern of results raises the question whether consumers can accurately predict that a delay (i.e., a filler task) will increase their sensitivity to psychological distance information. To examine this question, we conducted a separate follow-up study in which participants ($n = 30$), who went through the same procedure as those in the main study did, were asked to predict how they would rate their feelings if they won a prize that was available immediately or after four weeks. Participants were asked to predict their ratings

at two points in time: before the filler task and after the filler task. They were first asked to predict what their feelings would be immediately after winning the prize. Then, after completing the filler task, they were asked to predict what their feelings would have been if they had been assessed at that point in time instead (i.e., after rather than before the filler task). Not surprisingly, people expected to be happier if they would get the prize immediately ($M = 0.56$) versus after four weeks ($M = -0.53$; $F(1, 28) = 60.51, p < .001$). More interestingly, predictors intuited that this effect of psychological distance would *decrease* after the filler task ($F(1, 28) = 11.55, p = .002$). This is the opposite of what we observed for the experiencers in the main study. Thus, not only do people overestimate the effect of psychological distance on their immediate affective reactions, but they also erroneously expect this effect to weaken rather than strengthen over time.

Thus far, we have demonstrated that people tend to mispredict the impact of their psychological distance from a hedonic event on their emotional reaction to that event. In our last study, we examine whether this forecasting error can lead to sub-optimal decisions.

STUDY 5: MAKING BAD CHOICES

We have proposed that people underestimate the emotional impact of activities that involve psychologically distant objects (e.g., reading fictional stories or receiving prizes at some point in the future). This biased intuition can lead to two types of sub-optimal decisions: people who seek to *maximize* their emotional intensity may unnecessarily avoid experiences that involve psychologically distant events, whereas

people who seek to *minimize* their emotional intensity may erroneously prefer experiences that involve psychologically distant events. In study 5, we focus on this latter case. Participants are presented with a true story about a sad event and a fictional story about an even more tragic event. We expected that participants who want to minimize their sadness would prefer to read the fictional story, even though readers of the fictional story would end up feeling more upset than readers of the true story.

Method

Participants were 173 university students who received partial course credit for completing the study. Participants were randomly assigned to one of four conditions: two experienter conditions (*true sad story* or *fictional tragic story*) and two forecaster conditions (in which they read both stories, with the order being counterbalanced).

The procedure for *experiencers* was similar to that in studies 1A, 1B, and 2. Experiencers were either told that they would read a real newspaper story or a fictional newspaper story. They then recalled this information, read the story, and rated to what extent the story made them feel sad and distressed (on the same 9-point scales used in the first studies). There were two different stories: the fictional story was the previously used tragic story about a girl who dies from meningitis; the true story was a sad (i.e., less tragic) story about a bear that injures a baby girl.

Forecasters were presented with both stories (with order counterbalanced across the two predictor conditions) and simply asked to read the stories. After reading both stories, they then predicted how each story would affect their feelings if they had known

in advance that the bear story was true and that the meningitis story was fictional (using the same scales as used by experiencers). Next, they were asked to imagine they were feeling depressed and wanted to minimize their sadness, yet had to read one of the two stories for a class assignment. They were asked to indicate which of the stories they would choose to read in that situation. Finally, as a manipulation check, forecasters indicated which of the two stories was fictional.

Results and Discussion

The two feelings ratings were highly correlated ($\alpha = .76$) and therefore averaged to form a single measure of participants' emotional reaction to the story. We first examined the experiencers' ratings to assess the actual emotional impact of reading each story. Experiencers who read the fictional tragic story felt significantly worse than those who read the true sad story ($M_{\text{fictional}} = 6.49$, $M_{\text{true}} = 5.60$, $F(1, 103) = 6.19$, $p = .014$). This not only confirms that the tragic story was more upsetting than the sad story, but also demonstrates that knowing it was fictional did not sufficiently compensate for the more distressing content of the story. Next, we examined the forecasters' responses to test whether they could accurately predict this outcome. The results reveal that they could not. A significant majority of forecasters indicated that they would choose to read the fictional tragic story if they wanted to minimize their sadness ($P = 76\%$, $\chi^2(1) = 19.06$, $p < .001$). Consistent with this stated preference, they expected to feel much worse after reading the true sad story ($M_{\text{true}} = 6.24$) than after reading the fictional tragic story ($M_{\text{fictional}} = 3.57$; $F(1, 67) = 110.85$, $p < .001$; see figure 6).

These results confirm that people's failure to anticipate the emotional impact of a psychologically distant event (a fictional story) can result in sub-optimal decisions. Even though readers felt more upset after reading the fictional tragic story than after reading the true sad story, forecasters nonetheless expected that the true story would make them feel worse than the fictional story—and consequentially selected the fictional story as the best option to minimize their sadness.

GENERAL DISCUSSION

Whereas many prior studies have shown that people overestimate the intensity of their affective reactions because they are unaware of factors that attenuate their emotional experience (e.g, Gilbert et al. 1998, Wilson et al. 2000), our results identify an instance in which people in fact over-correct for a potentially attenuating factor. Across our studies, participants overestimated the extent to which their emotional reaction to a hedonic experience would be influenced by their psychological distance from the object of that experience. Whereas forecasters expected that the affective intensity of a hedonic experience would be greatly reduced with increased psychological distance, participants who actually went through the experience showed little effect of psychological distance. When reading newspaper stories about tragic events, forecasters expected to feel less upset after reading a fictional story rather than a real story (studies 1A and 2) and after reading a story from 10 years ago rather than a recent story (study 1B). Yet, readers were in fact equally sad regardless of whether they believed the story was real or fictional and regardless of whether they thought the story was from the recent or distant past.

Similarly, whereas forecasters expected that they would be less excited about winning a prize that would be available later rather than immediately, actual prize winners were equally excited regardless of when the prize was available (study 3).

These differences between participants' predicted and actual feelings were not simply due to differences in salience or demand effects, as demonstrated by the results of study 2. The gap between forecasters and experiencers persisted when the psychological distance information was made highly salient for forecasters (thus ruling out a salience account) and forecasters only used the information to the extent that it would plausibly affect people's experience (thus ruling out a demand effect account). Instead, we proposed that the limited effect of the psychological distance information on experiencers' emotional reactions was due to the absorbing nature of the hedonic experience, a factor that people often fail to consider (Morewedge et al. 2010). More specifically, we have argued that hedonic consumption experiences, such as reading a sad story or winning a prize, tend to absorb consumers' attention, leaving insufficient resources to adjust the emotional reaction for the fictional nature of the story or the delayed receipt of the prize. Consistent with this explanation, the prize winners in study 4 were in fact less excited when they won the delayed prize compared to the immediate prize, but only when a filler task separated the experience of winning from the emotion ratings. Whereas the filler task did not affect winners of the immediate prize, it did reduce the emotional response of the delayed prize winners, indicating that those participants were now able to adjust their feelings based on the delay information. Furthermore, forecasters did not anticipate this effect of the filler task, as they expected that it would weaken the effect of the prize timing, whereas, in reality, the filler task was

required for revealing the effect. Whereas, across our studies, forecasters consistently overestimated the impact of psychological distance on their affective reactions, it is not clear whether this bias resulted from underestimating their affective response to psychologically distant stimuli or overestimating their response to psychologically near stimuli. The results of study 4 suggest that the former effect is more important. When inserting the filler task provided prize winners with more resources to take the psychological distance information into account, participants in the distant (delayed) condition adjusted their ratings downward, but participants in the near (immediate) condition did not adjust their ratings upward. This suggests that, when a hedonic experience features a psychologically distant event, people initially take a more psychologically near perspective and only subsequently adjust for psychological distance. Thus, when people win a delayed prize, they process the experience as if the prize was available immediately, before incorporating the information that the prize will be delayed.

We can also more directly test whether the forecasters' prediction error was indeed mainly due to their underestimation of the emotional impact of psychologically distant events. Specifically, we can compare the emotional intensity ratings of forecasters to those of experiencers—both within the “near” conditions and within the “distant” conditions. However, we have to be cautious in our interpretation of these comparisons, as the ratings scale could have a different meaning for predictors versus experiencers, for instance as a result of different standards of comparison (e.g., Hsee and Zhang 2004). With this caveat in mind, we find that, for the most part, forecasters are fairly accurate in the near conditions, but underestimate the strength of their affective reaction in the distant

conditions—thus providing further evidence that experiencers do not distance themselves as much from those experiences as they tend to expect. Forecasters' predictions did not reliably deviate from experiencers' emotional responses to reading a real newspaper story (study 1A: $F < 1$, *ns.*; study 2: $F < 1$, *ns.*) or winning an immediately available prize (study 3: $F < 1$, *ns.*), but forecasters did significantly underestimate experiencers' emotional reaction to reading a fictional newspaper story (study 1A: $F(1, 48) = 22.97$, $p < .001$; study 2: $F(1, 233) = 17.55$, $p < .001$) or winning a delayed prize (study 3: $F(1, 79) = 11.48$, $p = .001$). The only exception to this pattern was observed in study 1B, in which experiencers were unusually unmoved by the sad story in both the near and distant conditions, resulting in forecasters' overestimation of affect in the near condition ($F(1,244) = 7.99$, $p = .005$)⁴.

How do these findings relate to previous research on psychological distance and affective forecasting? First, these results caution against generalizing some previous findings in the literature. Whereas much prior work on affective forecasting has shown that people tend to underestimate attenuating factors, leading them to overestimate the intensity of their affective reactions (e.g., Gilbert, Driver-Linn, and Wilson 2002), the current research documents a situation in which people overestimate the influence of an attenuating factor, leading them to underestimate their affective intensity. Similarly, whereas many studies have shown that psychological distance can have a pervasive influence on people's feelings (e.g., Ebert 2010; Van Boven, White, and Huber 2009), the current results indicate that psychological distance may have less influence on affective reactions than is commonly expected. Furthermore, the current findings are also in

⁴ We can only speculate as to whether this single deviation from the pattern is due to idiosyncratic properties of the selected story, a change in the meaning of the rating scale, or specific properties of the concept of story recency.

apparent contrast to one prior study that has linked affective forecasting to a dimension of psychological distance. Igou (2008) observed that people tend to predict that negative affect will persist longer for others than for themselves, suggesting that a more distant experience (other people's suffering) is expected to be more powerful than a close experience (own suffering). However, in this case, the psychological distance (self versus other) refers to the experiencer herself and not to the object of the experience, as in the present research. While people expect others' suffering to last longer than their own suffering (because they are unaware of others' coping strategies), they would likely expect to feel more emotion when contemplating their own suffering versus contemplating others' suffering.

Our results are consistent with previous findings that people initially approach psychologically distant events from a less distal perspective, before adjusting them for the distance information. People take someone else's perspective by initially considering their own perspective (Epley et al. 2004); estimate value for future events by initially valuing near events (Ebert 2001); and process fictional information by initially assuming it is true (Gilbert et al. 1993). However, our results differ markedly from these prior findings in the mechanism that underlies the surprising similarity between distant and near conditions. Whereas in those prior studies, the difference between distant and near conditions is reduced through external interventions that interfere with adjustment, such as imposing time pressure (Ebert 2001; Epley et al. 2004; Gilbert et al. 1993) or a second task (Ebert 2001; Gilbert et al. 1993), in our studies, the lack of adjustment results from the absorbing properties of the hedonic experience itself (as no external interventions are imposed in any of our studies).

Our results also build on a second stream of prior research that shows that consumers' hedonic experiences are often remarkably insensitive to the context of the experience—a phenomenon that has recently been attributed to the surprisingly absorbing nature of hedonic experiences (Morewedge et al. 2010). For example, consumers have been found to overestimate the degree to which they will contrast a hedonic experience against a preceding experience (e.g., in a taste test, they overestimate the impact of a prior jellybean on their enjoyment of the current jellybean, Novemsky and Ratner 2003), which has been interpreted as a consequence of an underestimation of the absorbing properties of the hedonic experience (Morewedge et al. 2010). Similar to preceding experiences, psychological distance can be viewed as a qualifier of hedonic experiences that is used in prediction but neglected in experience. Given the frequency with which psychological distance (in some form) can feature in decision options, we suspect that this effect may prove to be a prevalent source of systematic error in hedonic prediction.

Although the proposed failure to appreciate the absorbing nature of hedonic experiences (and the resulting inability to fully incorporate the psychological distance information) is consistent with both prior research and the observed forecasting error, there is also a second mechanism that may contribute to the observed bias. More specifically, people may underestimate their ability to bring psychologically distant events closer. Prior research has shown that consumers easily become immersed in completely fictional stories and can vividly imagine what may or may not happen a long time from now (Argo et al. 2008; Green and Brock 2000). Moreover, bringing the object of the experience closer not only produces greater affective intensity (Ebert 2010; Ekman and Bratfisch 1965; Latane 1981; Van Boven et al. 2009), but this greater affective

intensity will in turn make the object of the experience seem even closer (Van Boven et al. 2010), thus producing a recursive and self-reinforcing system. If consumers underestimate the power of this process and thus underestimate the ability of their imagination to bring psychologically distant events closer to the here and now, then their failure to appreciate this ability could contribute to the observed overestimation of the impact of psychological distance on emotional intensity. Yet, although this mechanism may contribute to the forecasting error, it is unlikely to be the only mechanism as it does not explain why delayed prize winners in study 4 reduced their emotional reaction after insertion of the filler task. As such, the surprisingly absorbing nature of the hedonic experience seems essential to account for the full pattern of findings. People's underestimation of their ability to bring distant experiences closer may contribute to the effect, but the precise role of this mechanism remains an issue for future research.

Finally, what are the possible downstream consequences of the forecasting error documented in this research? Similar to other affective forecasting errors, the overestimation of the impact of psychological distance on emotional intensity has the potential to bias consumers' decisions and produce suboptimal outcomes, as was demonstrated in study 5. In this study, a majority of forecasters assumed that reading the fictional tragic story would make them less sad than reading the true sad story—even though readers actually felt more upset after reading the fictional tragic story. These suboptimal choices make sense in light of forecasters' previously observed tendency to underestimate the emotional impact of experiences that involve psychologically distant elements. People assume that the tragic story will not upset them if they know it is fictional, yet get absorbed by the story while reading it, thus reducing their ability to

adjust for its fictional nature. This same biasing mechanism can potentially affect any consumer decision involving emotionally absorbing experiences with a psychological distance component (be it social distance, temporal distance, spatial distance, or hypotheticality). To be sure, we are not claiming that these dimensions of psychological distance will have no effect on consumers' feelings, as past research has demonstrated that these dimensions often do matter. Rather, we expect that consumers will tend to overweight psychological distance in their decisions and so potentially end up with less enjoyable options. They may choose to see a play about their hometown, watch a live basketball game on television, or read a novel based on a true story, but miss out on seeing a more enjoyable play about a distant city, watching a more exciting basketball game recorded earlier, or reading a more absorbing fictional novel.

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Figure 1. Mean emotional intensity scores for forecasters and experiencers (study 1A)

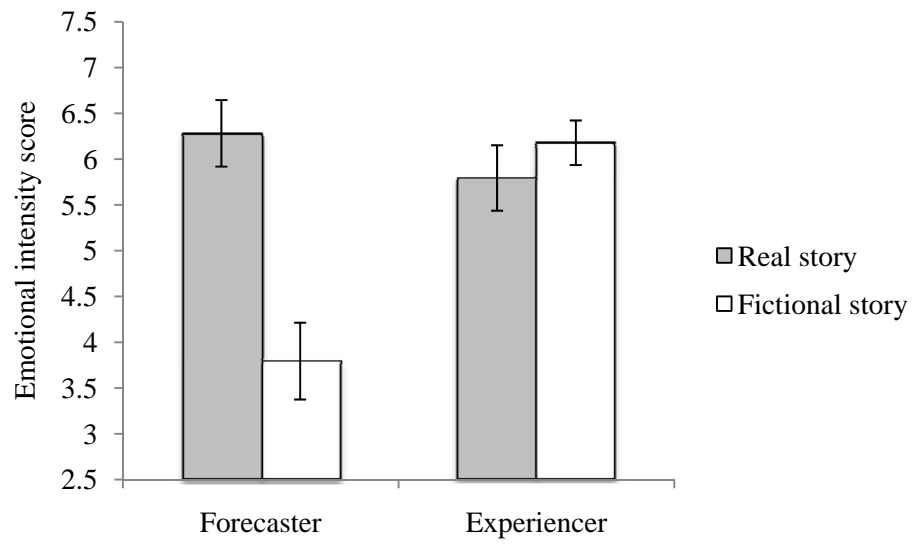


Figure 2. Mean emotional intensity scores for forecasters and experiencers (study 1B)

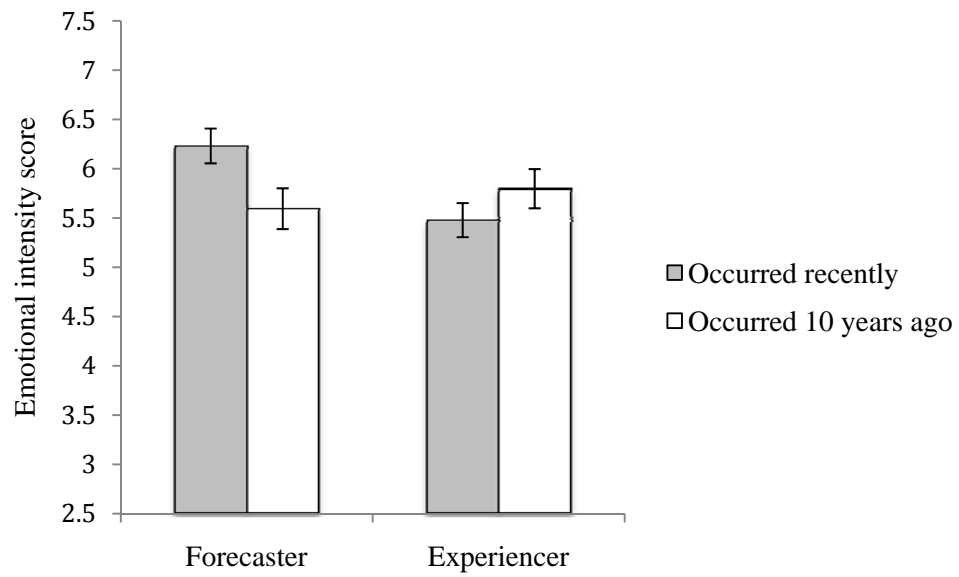


Figure 3. Mean emotional intensity scores for forecasters and experiencers (study 2)

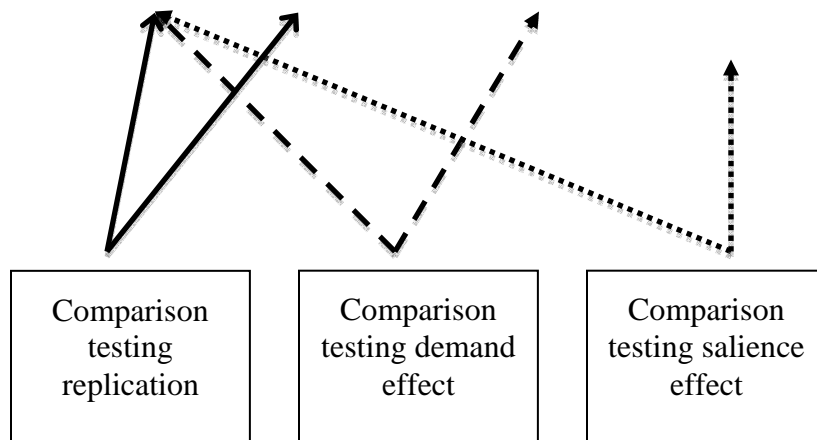
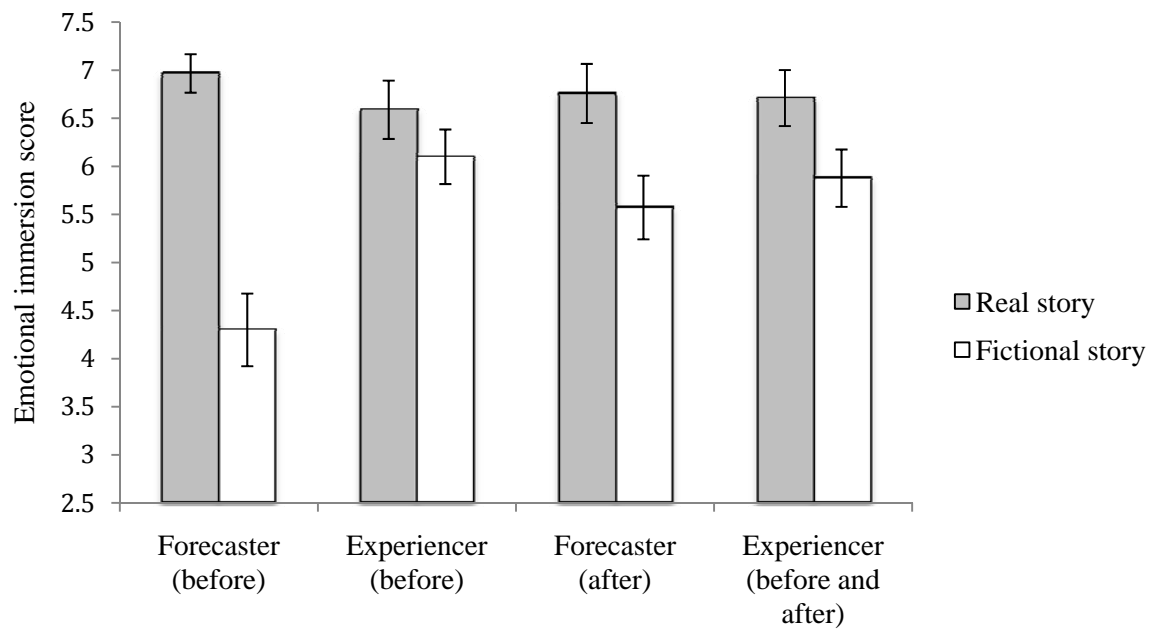


Figure 4. Mean standardized feelings scores for forecasters and experiencers (study 3)

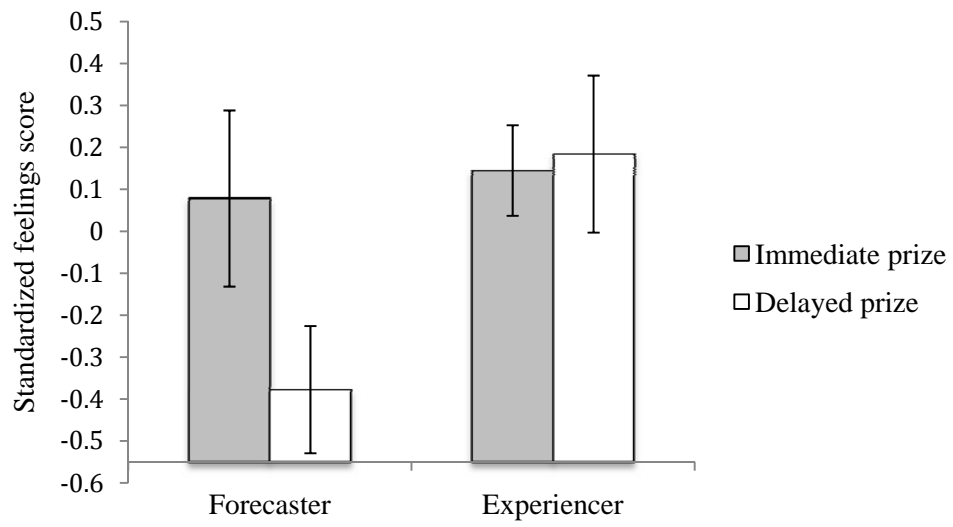


Figure 5. Mean standardized feelings scores for experiment conditions in (study 4)

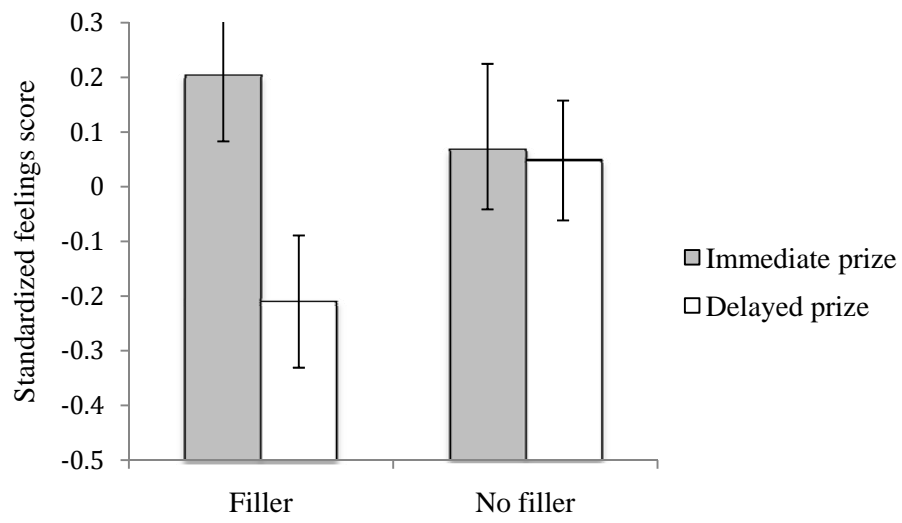


Figure 6. Mean emotional intensity scores for forecasters and experiencers (study 5)

