A "Present" for the Future: The Unexpected Value of Rediscovery

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Abstract
Although documenting everyday activities may seem trivial, four studies reveal that creating records of the present generates unexpected benefits by allowing future rediscoveries. In Study 1, we used a time-capsule paradigm to show that individuals underestimate the extent to which rediscovering experiences from the past will be curiosity provoking and interesting in the future. In Studies 2 and 3, we found that people are particularly likely to underestimate the pleasure of rediscovering ordinary, mundane experiences, as opposed to extraordinary experiences. Finally, Study 4 demonstrates that underestimating the pleasure of rediscovery leads to time-inconsistent choices: Individuals forgo opportunities to document the present but then prefer rediscovering those moments in the future to engaging in an alternative fun activity. Underestimating the value of rediscovery is linked to people's erroneous faith in their memory of everyday events. By documenting the present, people provide themselves with the opportunity to rediscover mundane moments that may otherwise have been forgotten.

At any moment, individuals can choose to capture their current experiences—for example, by taking photographs or writing diary entries—or to let those moments elapse undocumented. Everyday life moments, such as making breakfast or chatting with a coworker, tend to fall in the latter category: They seem too mundane to preserve or too salient in the moment to forget. Documenting such mundane moments in the present, however, offers a clear benefit if they are forgotten: Such records allow the present to be rediscovered in the future. Here, we explore whether people correctly anticipate the value of rediscovering ordinary experiences in the future and how their predictions of future value, in turn, influence their decisions to take advantage of opportunities to document the present.

A large body of research has demonstrated a host of errors that people make in predicting their future affective reactions. People have difficulty predicting how they will feel in the future (Gilbert, Gill, & Wilson, 2002; Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Kermer, Driver-Linn, Wilson, & Gilbert, 2006) and

estimating the emotional impact of both negative and positive events in the future (Frederick & Loewenstein, 1999; Fredrickson & Kahneman, 1993; Gilbert, Morewedge, Risen, & Wilson, 2004; Wilson & Gilbert, 2005). Whereas prior research has focused on how people mispredict their affective responses to future experiences, in the studies reported here we explored people's mispredictions of how they will feel in the future upon rediscovering their past. We found that individuals underestimate the future value of rediscovering today's seemingly mundane experiences.

Why might people underestimate the pleasure of such rediscovery? People mistakenly use their current states as heuristics to make projections about future affective responses (Gilbert et al., 2002) and imagine that their future selves will be similar to their current selves (Caruso,

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Van Boven, Chin, & Ward, 2013; Quoidbach, Gilbert, & Wilson, 2013). Because people inaccurately expect their current states to be similar to their future states (Conlin, O'Donoghue, & Vogelsang, 2007; Loewenstein, 2000; Loewenstein, O'Donoghue, & Rabin, 2003), they may think that they will remember mundane details about the present and that today's mundane details will continue to seem mundane in the future (Dougherty, 2001; Ericson, 2011). In reality, individuals have imperfect memories that fade or become distorted over time (Schmolck, Buffalo, & Squire, 2000; Talarico & Rubin, 2003) such that external cues (e.g., rediscovering an old memento) can trigger more vivid recall of related past experiences (Berntsen, 1998). Given these findings, we predicted that people would undervalue today's experiences, such that rediscovering today's mundane details in the future would be more interesting than they anticipate, and that they would consequently tend to underdocument today's experiences.

We tested our predictions in four experiments. Using a time-capsule paradigm, we first examined whether individuals underestimate the curiosity and interest they will experience when rediscovering mundane details from the past (Study 1). Then, we assessed how the type of experience—ordinary or extraordinary—moderates this effect (Studies 2 and 3). Finally, we examined whether underestimating the pleasure of rediscovery leads to time-inconsistent choices, such that people forgo opportunities to document the present only to find their future selves wanting to rediscover those very moments (Study 4).

Study 1: Underestimating the Value of Rediscovery

In Study 1, we asked people to predict how they would feel when rediscovering their current experiences in the future. Three months later, we compared their predictions with their actual feelings. We expected that people would underestimate the extent to which they would find their current experiences to be curiosity provoking and interesting in the future.

Method

Participants. One hundred thirty-five undergraduates (65.9% female, 33.3% male, 0.7% unreported; mean age = 20.4 years, $SD = 1.0$) in the northeastern United States completed the first part of this online study in exchange for $5, knowing that they would be contacted later for a follow-up. Three months later, 106 of these students (78.5% response rate; 67.0% female, 32.1% male, 0.9% unreported; mean age = 20.4 years, $SD = 1.0$) completed a follow-up survey in exchange for an additional $20.

There were no differences in gender, $\chi^2(1, N = 135) = 0.31$, $p = .58$, Cramér's $V = .05$, or age, $U = 1,487.00$, $p = .97$, $r = .003$, between those who did and did not complete the study; we present results for only those participants who completed both parts of the study.

We calculated our desired sample size using an estimated effect size (d) of 0.3, which required a sample size of approximately 90 participants for 80% power of detecting the effect. We targeted a recruitment of 130 to 150 students, anticipating a return rate of 60% to 70%.

Design and procedure. Participants created time capsules at the beginning of the summer (Time 1) and opened them 3 months later at the beginning of the following school year (Time 2). To create the time capsules, participants responded to nine prompts capturing a range of current experiences: the last social event they attended, a recent conversation, how they met their roommate for the following semester, three songs they recently listened to, an inside joke, a recent photo, a recent status they had posted on their Facebook profile, an excerpt from a final paper for class, and a question from a recent final exam. After creating their time capsules, participants were informed that they would be contacted in "a few months" for the second part of the study. For each element of the time capsule, we asked participants to predict how curious they would be to see what they had documented, how surprised they would be after seeing what they had documented, and how meaningful and interesting they would find each element in the future (1 = *not at all*, 7 = *extremely*).

Three months later (Time 2), participants were e-mailed a follow-up survey that listed the prompts they had viewed at Time 1. Prior to viewing their responses, participants indicated how curious they were to rediscover their response to each prompt. After participants reported their curiosity, they viewed what they had documented 3 months earlier. Then, they rated how surprised they were by each element and how meaningful and interesting they found each element (1 = *not at all*, 7 = *extremely*).

We averaged responses to the surprise, meaningfulness, and interest items to form a composite interest score for both Time 1 ($\alpha = .90$) and Time 2 ($\alpha = .87$). Table 1 provides descriptive statistics for each measure for Study 1.

Results

Across the nine prompts, participants' ratings of their curiosity and interest were highly intercorrelated ($\alpha_{curiosity} = .93$, $\alpha_{interest} = .90$). We therefore present results collapsed across the prompts. Participants' Time 1 predictions of their curiosity ($M = 3.99$, $SD = 1.32$) were lower than their

Table 1. Results From Studies 1, 2, and 4: Comparison of Mean Time 1 and Time 2 Ratings

Study and measure	Time 1 mean (predicted experience)	Time 2 mean (actual experience)	Underestimate (Time 2 – Time 1)	p^a
Study 1				
Curiosity	3.99 [3.74, 4.24]	4.34 [4.10, 4.58]	0.35 [0.11, 0.59]	.005
Interest	3.54 [3.34, 3.73]	3.82 [3.65, 4.00]	0.29 [0.10, 0.47]	.003
Surprise	2.84 [2.64, 3.05]	3.25 [3.06, 3.44]	0.40 [0.19, 0.62]	< .001
Meaningfulness	3.81 [3.60, 4.03]	4.04 [3.84, 4.23]	0.22 [0.03, 0.42]	.02
Interest	3.95 [3.73, 4.18]	4.19 [4.00, 4.38]	0.23 [0.02, 0.45]	.03
Study 2				
Curiosity	3.15 [2.66, 3.63]	4.77 [4.22, 5.32]	1.63 [0.99, 2.26]	< .001
Interest	3.48 [3.10, 3.86]	4.66 [4.20, 5.12]	1.18 [0.67, 1.68]	< .001
Enjoyableness	3.35 [2.95, 3.76]	4.56 [4.07, 5.06]	1.21 [0.70, 1.72]	< .001
Interest	3.60 [3.16, 4.05]	4.75 [4.25, 5.25]	1.15 [0.55, 1.75]	< .001
Study 4				
Curiosity: video	5.03 [4.53, 5.53]	4.78 [4.34, 5.22]	−0.25 [−0.81, 0.31]	.38
Interest: video	4.86 [4.43, 5.29]	4.63 [4.28, 4.98]	−0.23 [−0.67, 0.21]	.31
Enjoyableness	5.03 [4.57, 5.49]	4.72 [4.34, 5.10]	−0.31 [−0.82, 0.19]	.22
Interest	5.03 [4.56, 5.50]	4.92 [4.56, 5.29]	−0.11 [−0.60, 0.38]	.66
Meaningfulness	3.73 [3.33, 4.13]	4.21 [3.78, 4.63]	0.48 [−0.02, 0.98]	.06
Curiosity: conversation	3.67 [3.20, 4.15]	4.47 [4.00, 4.94]	0.80 [0.24, 1.35]	.005
Interest: conversation	3.35 [2.97, 3.74]	4.57 [4.16, 4.99]	1.22 [0.83, 1.61]	< .001
Enjoyableness	3.27 [2.82, 3.72]	4.58 [4.11, 5.05]	1.31 [0.85, 1.78]	< .001
Interest	3.59 [3.13, 4.06]	4.63 [4.18, 5.07]	1.03 [0.63, 1.43]	< .001
Meaningfulness	3.20 [2.75, 3.66]	4.52 [4.04, 4.99]	1.31 [0.75, 1.87]	< .001
Memory	73.31% [67.24, 79.39]	41.85% [34.78, 48.92]	−31.46% [−38.74, −24.18]	< .001

Note: The values in square brackets are 95% confidence intervals. The table presents results for the composite measure of interest as well as for the specific scales. For the measure of memory, participants indicated how much of their written summary of their conversation they expected to remember at Time 2 or they had remembered at Time 2.
^{a}This column presents p values from t tests comparing predictions with actual experience.

actual curiosity ratings at Time 2, immediately before reading their responses ($M = 4.34$, $SD = 1.25$), $t(105) = 2.88$, $p = .005$, $d = 0.27$. Participants also underestimated how interesting they would find their responses. Predictions of interest at Time 1 ($M = 3.54$, $SD = 1.01$) were lower than ratings of actual interest experienced at Time 2 ($M = 3.82$, $SD = 0.89$), $t(105) = 3.10$, $p = .003$, $d = 0.29$.

Discussion

The results of Study 1 demonstrate that people mispredict how their future selves will feel when they rediscover their past experiences: They underestimate not only how curious they will be to rediscover their past but also how interesting they will find the process of rediscovery.

Study 2: Rediscovering Ordinary Versus Extraordinary Experiences

Does the magnitude of misprediction vary as a function of the type of experience? In Study 2, we examined whether

people are more likely to underestimate the value of rediscovering simple, mundane experiences from everyday life than to underestimate the value of rediscovering extraordinary experiences that they may expect to enjoy remembering. In a 7-month longitudinal study, participants predicted the curiosity and interest they would feel while rediscovering documented conversations.

Method

Participants. We recruited 68 participants (57.4% female, 39.7% male, 2.9% unreported; mean age = 38.1 years, $SD = 12.7$) from Amazon's Mechanical Turk. They completed the first part of this online study in exchange for $0.50. Seven months later, 48 participants (70.6% response rate; 56.3% female, 43.8% male; mean age = 38.3 years, $SD = 12.2$) completed a follow-up survey for an additional $3. There were no differences in gender, $\chi^2(1, N = 66) = 0.59$, $p = .44$, Cramér's $V = .09$, or age, $U = 405.00$, $p = .70$, $r = .05$, between individuals who did and did not complete both surveys; we report results only for those participants who completed both parts of the study.

Given an estimated 60% to 70% response rate, we targeted recruitment of approximately 70 participants so that the study would have 80% power to detect an effect with an estimated effect size (*d*) of 0.4.

Design and procedure. Participants signed up for a longitudinal study investigating individuals' thoughts and feelings. At Time 1, all participants wrote about a recent conversation. They were then informed that they would be contacted again in "a few months" to read what they had written. We asked them to predict how curious they would be to view their records and how much they expected to find this experience enjoyable and interesting when contacted in the future (1 = *not at all*, 7 = *extremely*). Participants then rated how ordinary and how extraordinary the conversation they had documented was (1 = *not at all*, 7 = *extremely*; adapted from Bhattacharjee & Mogilner, 2014).

Seven months later (Time 2), we e-mailed a follow-up survey to the same participants. First, they indicated how curious they were to read their written responses from Time 1. After reading what they had written, participants rated how enjoyable and interesting they found rediscovering the conversation (1 = *not at all*, 7 = *extremely*).

We averaged responses to the last two items to form a composite interest score at both Time 1 (α = .85) and Time 2 (α = .81). Descriptive statistics for all variables are presented in Table 1.

Results

Participants' Time 1 predictions of the curiosity they would experience (*M* = 3.15, *SD* = 1.68) were lower than the curiosity they actually experienced at Time 2 (*M* = 4.77, *SD* = 1.88), *t*(47) = 5.17, *p* < .001, *d* = 0.91. Similarly, participants' predictions of how interesting they would find the experience of reading what they had documented (*M* = 3.48, *SD* = 1.31) were lower than their actual ratings of interest at Time 2 (*M* = 4.66, *SD* = 1.58), *t*(47) = 4.70, *p* < .001, *d* = 0.81.

Additionally, the more participants rated their conversations as ordinary, the more they underestimated their curiosity, *r*(48) = .40, 95% confidence interval (CI) = [.14, .63], *p* = .005, and interest, *r*(48) = .35, 95% CI = [.06, .61], *p* = .01, when they rediscovered those experiences at Time 2. Conversely, the more they rated their conversations as extraordinary, the less participants underestimated their Time 2 curiosity, *r*(48) = −.29, 95% CI = [−.58, .03], *p* = .04, and interest, *r*(48) = −.40, 95% CI = [−.59, −.18], *p* = .005.

Discussion

Study 2 replicated the primary results from Study 1: Individuals underestimated the value of rediscovering

current experiences in the future. Moreover, this effect was influenced by the ordinariness of the experience: The more ordinary experiences were perceived to be in the moment, the larger the magnitude of the prediction error. These findings suggest that the unexpected value people receive from rediscovery stems at least in part from the pleasure of reflecting on the simpler, more mundane aspects of daily life; in contrast, the pleasure of rediscovery is more accurately anticipated for memories that seem memorable in the moment.

Study 3: Rediscovering an Ordinary Day Versus Valentine's Day

Whereas participants decided for themselves whether to document ordinary or extraordinary experiences in Study 2, in Study 3 we randomized whether participants rediscovered an ordinary or extraordinary event. In a longitudinal field study spanning 3 months, individuals in romantic relationships predicted the curiosity and interest they would feel to rediscover an extraordinary experience (i.e., what they did on Valentine's Day) and an ordinary experience (i.e., what they did on a typical day near February 14). Three months later, they rediscovered their documentation of one of these experiences. We expected individuals to underestimate their future curiosity and pleasure more for ordinary events than for extraordinary ones.

Method

Participants. We recruited 152 individuals (71.7% female, 27.0% male, 1.3% unreported; mean age = 24.3 years, *SD* = 3.18) from an alumni network at a northeastern university. Individuals who reported having a romantic partner were eligible to complete this 3-month online study. Participants completed the first two parts of the study (1 week apart) in exchange for $5.00. Three months later, 130 participants (85.5% response rate; 73.1% female, 26.2% male, 0.8% unreported; mean age = 24.3 years, *SD* = 3.32) completed a follow-up survey in exchange for an additional $10. There were no differences in gender, χ²(1, *N* = 150) = 0.44, *p* = .51, Cramér's *V* = .05, or age, *U* = 1,239.5, *p* = .49, *r* = .06, between individuals who did and did not complete all surveys; we report results only from those participants who completed all parts of the study. We excluded 1 participant who reported no longer being in a relationship after completing the first part of the study.

Given an estimated 80% response rate, we targeted recruitment of approximately 150 participants so that the study would have 80% power to detect an effect with an estimated effect size (*f*) of .1.

Design and procedure. Participants were informed that the study was about individuals' "thoughts and

feelings across time." On February 8, 2014, we asked participants to recall a recent typical experience with their partner (Time 1 ordinary event) and to write in as much detail as possible about what they did during the event, where they were, what they discussed, and how they felt during the experience. One week later, on February 15, 2014, the same participants were asked to recall their recent experience with their partner on Valentine's Day (Time 1 extraordinary event) and to complete the same writing prompt. For both events, we told participants that they would have the opportunity to read their documentation in a few months. Immediately after documenting each experience, participants predicted how curious they would be to view their documentation in "a few months" and how enjoyable, interesting, meaningful, and surprising they thought reading their account of the event would be in the future (1 = *not at all*, 7 = *extremely*). As a manipulation check, participants also rated how extraordinary they found each event (1 = *extremely ordinary*, 4 = *neither ordinary nor extraordinary*, 7 = *extraordinary*).

Three months later (Time 2), we e-mailed a follow-up survey to the same participants. Half of the participants were randomly assigned to read what they had written on February 8, 2014 (about an ordinary day), whereas the other half were assigned to read what they had written on February 15, 2014 (about Valentine's Day). Participants indicated how curious they were to read what they had written. After reading what they had written, they rated how enjoyable, interesting, meaningful, and surprising they found their responses (1 = *not at all*, 7 = *extremely*). Participants also rated how extraordinary they found the event (1 = *extremely ordinary*, 4 = *neither ordinary nor extraordinary*, 7 = *extraordinary*) and how detailed they found their account (1 = *not at all*, 4 = *somewhat*, 7 = *extremely*). Finally, they indicated the percentage of the written response that they had remembered prior to reading their account. After participants completed the study, they received a message containing the content of both their ordinary and their extraordinary accounts.

For our analyses, we averaged ratings of enjoyment, interest, meaningfulness, and surprise to form a composite interest score at both Time 1 (α = .71) and Time 2 (α = .73).

Results

Extraordinariness. At Time 1, participants rated their experience with their partner on a typical day to be less extraordinary (*M* = 2.73, *SD* = 1.42, 95% CI = [2.39, 3.08]) than their experience with their partner on Valentine's Day (*M* = 4.35, *SD* = 1.38, 95% CI = [4.01, 4.69]), $F(1, 128)$ = 39.86, p < .001, η_p^2 = .24. Thus, our manipulation of extraordinariness was effective.

We conducted a repeated measures analysis of variance (ANOVA) with perceptions of extraordinariness as the dependent measure, time (Time 1 vs. Time 2) as a within-subjects factor, and type of event (ordinary vs. extraordinary) as a between-subjects factor. This analysis revealed a main effect of time, $F(1, 128)$ = 26.23, p < .001, η_p^2 = .17; experiences seemed more extraordinary overall at Time 2 (*M* = 4.23, *SD* = 1.22, 95% CI = [4.02, 4.43]) than they did 3 months earlier, at Time 1 (*M* = 3.55, *SD* = 1.61, 95% CI = [3.27, 3.83]). We also found an interaction between time and type of event, $F(1, 128)$ = 15.02, p < .001, η_p^2 = .11. Simple-effects tests revealed that ordinary experiences were perceived as more extraordinary at Time 2 (*M* = 3.94, *SD* = 1.25, 95% CI = [3.64, 4.23]) than at Time 1 (*M* = 2.73, *SD* = 1.41, 95% CI = [2.39, 3.08]), $F(1, 128)$ = 39.86, p < .001, η_p^2 = .24, whereas these ratings for the extraordinary experiences did not differ between Time 1 (*M* = 4.35, *SD* = 1.38, 95% CI = [4.01, 4.69]) and Time 2 (*M* = 4.52, *SD* = 1.14, 95% CI = [4.23, 4.80]), $F(1, 128)$ = 0.79, p = .38, η_p^2 = .006.

Curiosity. We conducted the same repeated measures ANOVA with curiosity as the dependent measure. We observed a main effect of time $F(1, 128)$ = 6.16, p = .01, η_p^2 = .05; anticipated curiosity at Time 1 (*M* = 3.99, *SD* = 1.42, 95% CI = [3.75, 4.24]) was lower than actual curiosity at Time 2 (*M* = 4.33, *SD* = 1.42, 95% CI = [4.09, 4.58]). There was also an interaction between time and type of experience, $F(1, 128)$ = 5.12, p = .03, η_p^2 = .04. Simple-effects tests revealed that for ordinary events, Time 1 predictions of future curiosity (*M* = 3.73, *SD* = 1.39, 95% CI = [3.39, 4.08]) were lower than actual curiosity at Time 2 (*M* = 4.39, *SD* = 1.48, 95% CI = [4.04, 4.76]), $F(1, 128)$ = 11.08, p < .001, η_p^2 = .08, whereas for extraordinary events, predicted curiosity at Time 1 (*M* = 4.24, *SD* = 1.40, 95% CI = [3.90, 4.58]) did not differ from experienced curiosity at Time 2 (*M* = 4.27, *SD* = 1.37, 95% CI = [3.94, 4.61]), $F(1, 128)$ = 0.02, p = .88, η_p^2 < .001 (Fig. 1).

Interest. We conducted the same repeated measures ANOVA with interest as the dependent measure and again found a main effect of time, $F(1, 128)$ = 25.88, p < .001, η_p^2 = .17; anticipated interest at Time 1 (*M* = 4.20, *SD* = 1.12, 95% CI = [4.01, 4.40]) was lower than actual interest at Time 2 (*M* = 4.69, *SD* = 1.19, 95% CI = [4.49, 4.90]). We also observed an interaction between time and type of experience, $F(1, 128)$ = 4.45, p = .04, η_p^2 = .03. Simple-effects tests revealed that for ordinary events, predicted interest at Time 1 (*M* = 4.04, *SD* = 1.09, 95% CI = [3.76, 4.32]) was lower than experienced interest at Time 2 (*M* = 4.73, *SD* = 1.24, 95% CI = [4.44, 5.03]), $F(1, 128)$ = 25.50, p < .001, η_p^2 = .17. Although predicted interest for extraordinary events at Time 1 (*M* = 4.36, *SD* = 1.13, 95% CI = [4.08, 4.64]) was lower than experienced interest at
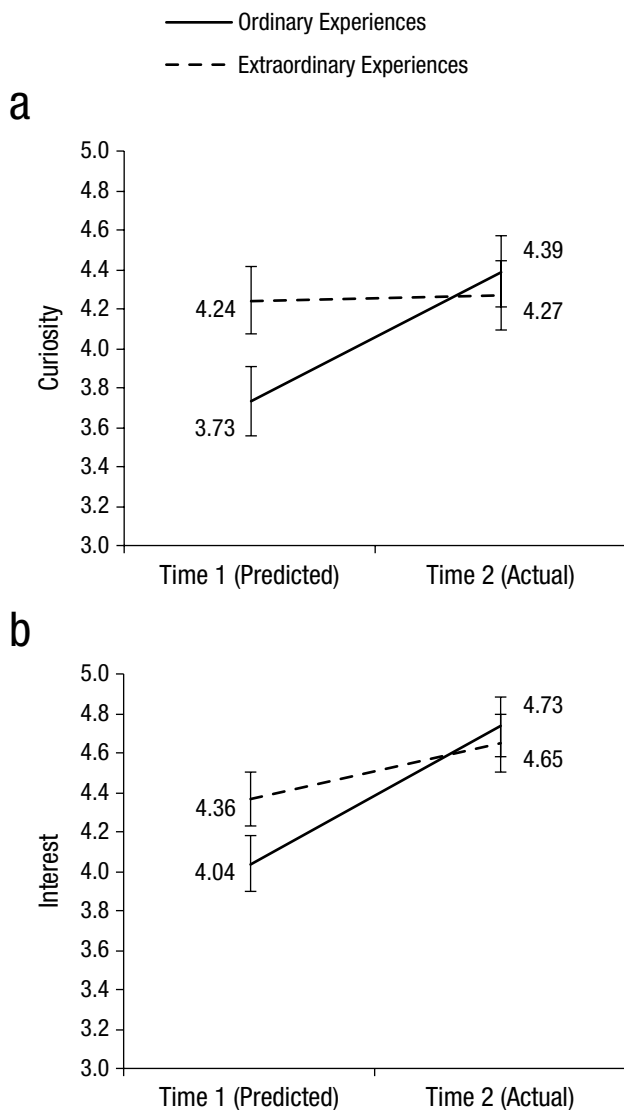
Fig. 1. Results for curiosity (top panel) and interest (bottom panel) in Study 3. Each graph shows predicted feelings (Time 1) and actual feelings (Time 2) separately for ordinary and extraordinary experiences. Error bars represent ±1 *SE*.

Time 2 ($M = 4.65$, $SD = 1.14$, 95% CI = [4.37, 4.93]), $F(1, 128) = 4.51$, $p = .04$, $\eta_p^2 = .03$, the magnitude of underestimation was smaller than for ordinary events (Fig. 1).[1]

Memory. Individuals who rediscovered ordinary events reported remembering a smaller percentage of what they had written ($M = 33.55\%$, $SD = 25.44$, 95% CI = [27.19, 39.90]) than did those who rediscovered extraordinary events ($M = 46.81\%$, $SD = 27.82$, 95% CI = [39.86, 53.76]). This 13.27% difference was statistically significant, $t(126) = -2.82$, $p = .006$, 95% CI = [3.94, 22.59], $d = 2.36$.

Detail. To better understand how the content of records is related to mispredicting the value of rediscovery, we asked participants to rate how detailed their records were at Time 2. We found that participants rated their accounts of ordinary events as more detailed ($M = 4.67$, $SD = 1.49$, 95% CI = [4.30, 5.04]) than their accounts of extraordinary events ($M = 4.22$, $SD = 1.36$, 95% CI = [3.88, 4.55]), by a difference of 0.46, $t(127) = 1.82$, $p = .07$, 95% CI = [−0.04, 0.95], $d = 0.32$. Individuals underestimated their future interest more for accounts that were rated as more detailed, $r(129) = .27$, 95% CI = [.12, .42], $p = .002$, and this correlation was directionally the same for both extraordinary events, $r(65) = .22$, 95% CI = [−.02, .46], $p = .08$, and ordinary events, $r(64) = .26$, 95% CI = [.03, .47], $p = .04$. These results offer initial evidence that in addition to the type of experience, the content of documentation influences the experience of rediscovery, such that detailed accounts provide more value in the future than initially predicted.

Discussion

Mirroring the correlational results from Study 2, Study 3 offers causal evidence that individuals are more likely to mispredict the value of rediscovering ordinary events than to mispredict the value of rediscovering extraordinary events, which are more memorable. Additionally, ordinary events came to be perceived as more extraordinary over time, whereas perceptions of extraordinary events did not change across time.

Study 4: Forgoing Rediscovery

Studies 1 through 3 document when individuals mispredict the pleasure of rediscovering the past. In each study, however, participants were given no choice: They were required to both document and reflect on their experiences. In Study 4, we explored how mispredicting the pleasure of rediscovery may lead individuals to forgo the documentation that allows for future rediscovery. We asked people to choose between documenting an experience and engaging in an alternative fun activity (Time 1). Then, 1 month later, we asked them to choose between rediscovering the experience they had documented and engaging in an alternative fun activity (Time 2). We predicted that people would make time-inconsistent choices, such that most individuals would choose the alternative fun activity at Time 1, even if doing so meant forgoing the opportunity for rediscovery in the future. However, we predicted that at Time 2, most individuals would prefer to rediscover the past rather than engage in the alternative fun activity.

Finally, we examined whether errors in predicting memory could account for individuals' mispredictions about the pleasure of rediscovery. In Study 3, people who rediscovered ordinary events reported remembering

a smaller percentage of what they had written than did those who rediscovered extraordinary events. In Study 4, we compared participants' predictions of their memory accuracy with their actual memory of their focal experiences.

Method

Participants. Eighty-one individuals (55.6% female, 44.4% male; mean age = 34.0 years, SD = 11.5) from Amazon's Mechanical Turk completed the first part of this online study in exchange for $0.50. One month later, 64 participants (79% response rate; 54.7% female, 45.3% male; mean age = 33.9 years, SD = 11.0) completed a follow-up survey in exchange for an additional $5. There were no differences in gender, $\chi^2(1, N = 81) = 0.09$, $p =$ .76, Cramér's V = .03, or age, U = 532.5, p = .89, r = .01, between individuals who did and did not complete both surveys. We present results for only those participants who completed both parts of the study.

Given an estimated return rate of 70%, we targeted a recruitment of 80 individuals so that the study would have 80% power to detect an effect with an estimated effect size (d) of 0.4.

Design and procedure. At Time 1, participants chose between the following two options: (a) spending 5 min writing about a recent conversation they had with a friend and then having the opportunity to read their account in 1 month or (b) watching a 5-min video featuring a conversation between a talk-show host and an author now and then watching a different but similar video in 1 month. Regardless of their expressed preference, participants then completed both tasks (in random order) and predicted how they would feel about these activities in the future. This method allowed us to make within-subjects comparisons of prediction errors across the two activities.

For the writing task, we asked participants to "think about a recent conversation you had, and consider all of the details that went into the conversation: what you said, what the other party said, and where the conversation took place." After writing about their conversation, participants predicted how curious they would be to read what they had written and how enjoyable, interesting, and meaningful reading their documentation would be in 1 month (1 = *not at all*, 4 = *somewhat*, 7 = *extremely*). They also estimated the percentage of their response that they thought they would remember 1 month later. After watching the video, participants predicted how curious they would be to watch a similar video 1 month later and rated how enjoyable, interesting, and meaningful they would find the experience of watching a similar video at that later time. After completing both the video and

writing exercises, participants predicted what they would choose when given the following two choices in a month: read what they had written or watch a similar video.

One month later, we e-mailed a follow-up survey to the same participants. They indicated their level of curiosity to read what they had written and to watch the video (1 = *not at all*, 4 = *somewhat*, 7 = *extremely*) and then made a choice between (a) spending 2 min reading what they had written a month earlier and (b) watching a 2-min video of a conversation between a talk-show host and an author. Regardless of their choice, participants completed both activities in random order and rated how meaningful, interesting, and enjoyable they found each activity (1 = *not at all*, 4 = *somewhat*, 7 = *extremely*). After reading their documentation of their conversation, participants indicated the percentage of their written response that they had remembered.

We averaged responses to the items measuring meaningfulness, interest, and enjoyableness to form a composite interest score at both Time 1 (α = .80) and Time 2 (α = .88). The difference between predicted memory at Time 1 and actual memory at Time 2 served as our measure of participants' misprediction of their memory. Descriptive statistics are presented in Table 1.

Results

Choices. At Time 1, only a minority of participants chose writing about a recent conversation over watching the video (27%, 17/64), and a similarly small percentage predicted that they would choose to read about the conversation in 1 month, at Time 2 (28%, 18/64; see Fig. 2). In other words, the majority of participants decided to forgo the opportunity to read their documentation in the future. However, we found a preference reversal 1 month later: The majority of participants at Time 2 chose to read their account of the conversation (58%, 37/64) instead of watching the video (Fig. 2). Both their choice at Time 1, $\chi^2(1, N = 64) = 5.72$, $p = .02$, Cramér's V = .30, and their Time 1 prediction about their choice at Time 2, $\chi^2(1, N = 64) = 4.09$, $p = .04$, Cramér's V = .25, differed from their actual choice at Time 2.

Curiosity. We conducted a repeated measures ANOVA with curiosity as the dependent measure and time (Time 1 prediction vs. Time 2 experience) and task (video vs. conversation) as within-subjects independent variables. There was an interaction between time and task, $F(1, 63) = 8.42$, $p = .005$, $\eta_p^2 = .12$. That is, participants' Time 1 predictions of the curiosity they would experience prior to reading about the conversation at Time 2 (M = 3.67, SD = 1.89) were lower than the curiosity they actually experienced at Time 2 (M = 4.47, SD = 1.88), $t(63) = 2.88$, p = .005, d = 0.42. However, participants' predicted
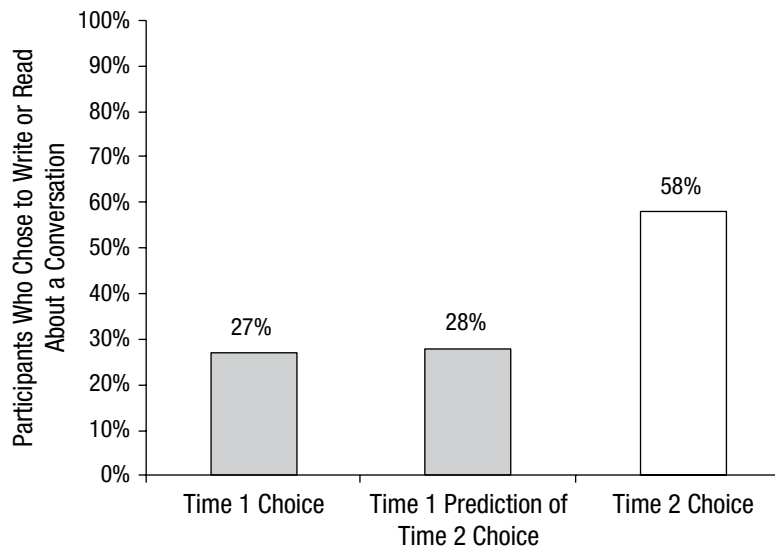
Fig. 2. Results from Study 4: percentage of participants who chose to write about a conversation at Time 1, who predicted that they would choose to read about the conversation at Time 2, and who actually chose to read about the conversation at Time 2.

curiosity about viewing a similar video at Time 2 (M = 5.03, SD = 1.99) did not differ from their experienced curiosity at Time 2 (M = 4.78, SD = 1.77), $t(63)$ = 0.89, p = .38, d = 0.13. Additionally, there was a main effect of task, $F(1, 63)$ = 10.10, p = .002, η_p^2 = .05; participants expressed more curiosity about the video task than the conversation task overall.

Interest. A corresponding ANOVA on interest ratings also showed an interaction between time and task, $F(1, 63)$ = 35.48, p < .001, η_p^2 = .36. Participants' Time 1 prediction of their interest in reading about the conversation at Time 2 (M = 3.35, SD = 1.55) was lower than their experienced interest at Time 2 (M = 4.57, SD = 1.67), $t(63)$ = 6.25, p < .001, d = 0.76. However, participants' Time 1 predictions of the interest they would experience from watching the video at Time 2 (M = 4.86, SD = 1.72) did not differ from their actual interest at Time 2 (M = 4.63, SD = 1.40), $t(63)$ = 1.04, p = .30, d = 0.15. There were also main effects of task, $F(1, 63)$ = 10.92, p = .002, η_p^2 = .15, and time, $F(1, 63)$ = 8.64, p = .005, η_p^2 = .12; participants expressed more interest in the videos than in their conversations, and their predicted interest was overall lower than their actual interest.

Memory. Participants were overly optimistic about how much of the documented conversation they would remember. At Time 1, they believed that they would remember the majority of the conversation (M = 73.31%, SD = 27.63). However, at Time 2, they reported remembering less of the conversation (M = 41.85%, SD = 23.72) than they had predicted, $t(60)$ = 8.65, p < .001, d = 1.22.

In addition, the more they overestimated how much they would remember, the more they underestimated how interesting they would find these conversations in the future, $r(61)$ = .37, 95% CI = [.10, .59], p = .003.

Discussion

Study 4 demonstrates that underestimating the joy of rediscovery leads individuals to make time-inconsistent choices: They choose to forgo opportunities to document experiences in the present, only to find themselves wanting to retrieve those records in the future. Although participants were inaccurate in predicting their enjoyment of rediscovering experiences from their past, they did accurately predict their future enjoyment of a video similar to one they had just viewed. Additionally, their overconfidence in their future memory at least in part explains their undervaluation of future rediscovery. For example, one participant wrote that it "was interesting to find out how little I recalled what I had written." Thus, results from Study 4 provide evidence that people's overestimation of the accuracy of their own memory underlies their underestimation of the pleasure of rediscovery.

General Discussion

Across four longitudinal studies, we found that people underestimate how curiosity provoking and interesting they will find rediscovering today's moments in the future—an effect that leads them to forgo the opportunity to document the present even though they later choose to rediscover it. This phenomenon arises at least in part

because individuals fail to realize that they will forget the mundane details of their current experiences; as a result, the value of rediscovery is mispredicted particularly for ordinary—rather than extraordinary—experiences.

Taken together, our findings demonstrate a novel error in affective forecasting (Gilbert et al., 1998; Wilson & Gilbert, 2005): failure to anticipate the pleasure of rediscovering past experiences. Existing research on forecasting errors shows that people overestimate their emotional reactions to new experiences because they fail to consider how they will acclimate to them (Gilbert et al., 2002; Gilbert et al., 1998; Wilson & Gilbert, 2005). In contrast, when deciding whether to document their current experiences, individuals actually underestimate the pleasure that rediscovery will bring them in the future. Consistent undervaluation of the present leads people to avoid documenting the present even though they will enjoy rediscovering present moments in the future. The time-inconsistent choices we observed suggest that even simple interventions (e.g., taking a few minutes to document the present) could generate unexpected value in the future.

Our investigation suggests several opportunities for future research. First, more research is needed to clarify how ordinary and extraordinary moments may appreciate (or depreciate) in value over time, and whether individuals may even overestimate the value of rediscovering extraordinary moments (e.g., the 5,000 pictures from one's "extraordinary" wedding may be excessive). Second, given that some individuals are more skilled affective forecasters than others (Dunn, Brackett, Ashton-James, Schneiderman, & Salovey, 2007), additional research is needed to identify the types of individuals (e.g., those who do not already keep diaries and journals) who are especially likely to benefit from an intervention that motivates them to document and rediscover their experiences.

We also note that documenting the present does not come without costs. For example, research shows that documenting the present by taking photos or writing about events can hinder encoding of the memories themselves, or even create false memories (Henkel, 2014). Indeed, the increased availability of cameras embedded in cell phones and the explosion of posts and photographs about everyday activities on Web sites such as Facebook, Instagram, and Twitter have led scholars to theorize that an unhealthy narcissism is growing in society (Twenge, Campbell, Hoffman, & Lance, 2010; Twenge & Foster, 2010). We note, however, that the effect we observed hinges on a critical step after documentation: taking time to rediscover and cherish documented memories, rather than documenting endlessly. Future research should explore the optimal balance between enjoying the present as it unfolds and documenting the present to enjoy it in the future.

Conclusion

People systematically underestimate the value of rediscovering the past. Encouraging documentation of the present provides people with access to future value that they otherwise may have missed. As one participant put it, "Re-reading this event of doing mundane stuff with my daughter has certainly brightened my day. I'm glad I chose that event to write about because of the incredible joy it gives me at this moment." By recording ordinary moments today, one can make the present a "present" for the future.

Author Contributions

T. Zhang and T. Kim developed the study concept. All authors contributed to the study designs. T. Zhang and T. Kim collected and analyzed the data under the supervision of A. W. Brooks, F. Gino, and M. I. Norton. All authors interpreted the data. T. Zhang and T. Kim drafted the manuscript, and A. W. Brooks, F. Gino, and M. I. Norton provided critical revisions.

Declaration of Conflicting Interests

Open Practices

Note

1. A possible explanation for our results in Studies 1 and 2 is that only individuals who valued rediscovery of the past completed the survey at Time 2. To address this possibility in Study 3, we ran additional analyses including all participants, assuming that those who dropped out would have given the lowest possible rating (1) for experienced interest at Time 2. Despite these conservative estimates, predicted interest was lower than experienced interest for ordinary events (predicted: $M = 3.93$, $SD = 1.14$; experienced: $M = 4.32$, $SD = 1.66$), $F(1, 145) = 4.62$, $p = .03$, but not for extraordinary events (predicted: $M = 4.18$, $SD = 1.12$; experienced: $M = 4.21$, $SD = 1.60$), $F(1, 145) = 0.04$, $p = .84$. These analyses mitigate the concern that our results were due solely to attrition.

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