

Taking the Long View: Implications of Individual Differences in Temporal Distancing for Affect, Stress Reactivity, and Well-Being

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Recent experimental work demonstrates that temporal distancing from negative experiences reduces distress. Yet two central questions remain: (a) do people differ in the habitual tendency to temporally distance from negative experiences, and if so (b) what implications does this tendency have for well-being? Seven studies explored these questions. Study 1 describes the construction and reliability of the Temporal Distancing Questionnaire, a new measure of individual differences in the tendency to place negative experiences into a broader future time perspective. Study 2 establishes a nomological network around this construct, examining the relationship of temporal distancing to other theoretically related constructs. Study 3 tests whether people high in temporal distancing (i.e., “high temporal distancers”) experience greater concurrent well-being, including greater positive affect and life satisfaction and lesser negative affect, worry, and depressive symptoms. Study 4 examines whether temporal distancing predicts well-being measured at the daily level, and across time. Finally, Studies 5a–5c explore a key way in which temporal distancing may support psychological well-being—by facilitating more adaptive responses to negative experiences. Our results demonstrate that the tendency to temporally distance from negative experiences predicts a more positive profile of affective experiences and stress-reactivity that may support immediate and longer-term well-being. Moreover, many of these findings remained significant when controlling for general reappraisal tendencies.

Keywords: emotion regulation, reappraisal, stress, temporal distance, well-being

Supplemental materials: <http://dx.doi.org/10.1037/pspp0000103.supp>

Expressions such as “she’s good at keeping things in perspective” and “he always blows things out of proportion” reflect the intuitive understanding that certain individuals are more inclined to put personal experiences into a broader context than others. Additionally, many self-help websites echo the belief that it is adaptive to adopt a broader perspective on negative experiences.¹ Although it seems reasonable to assume that some people are habitually more inclined to put negative experiences into a broader perspective, psychologists have yet to directly test this assumption. It is also unknown whether people who regularly adopt a broader perspective on negative experiences actually experience better psychological health.

The current research addresses these questions by examining individual differences in one perspective-broadening strategy—temporal distancing. The term temporal distancing will be used to

refer to the act of mentally envisioning negative experiences from a broader, future time perspective.² A temporally distant perspective can be achieved by imagining how one will perceive a current negative experience in the distant future, for example 5 or 10 years down the road. Prior experimental research demonstrates that temporal distancing, along with a variety of other “perspective-broadening” strategies, leads to momentary reductions in distress (Bruehlman-Senecal & Ayduk, 2015; Yanagisawa et al., 2011). The present studies expand on prior research that demonstrates temporal distancing’s causal role in emotion regulation by examining whether individuals differ in the habitual, natural tendency to temporally distance from negative experiences. They further explore the implications of such differences for affective experiences, stress-reactivity, and broader psychological well-being.

The Emotion-Regulatory Benefits of Perspective Broadening

Recent experimental research indicates that “perspective-broadening” strategies play a central role in emotion-regulation.

This article was published Online First July 11, 2016.

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We thank Catherine Azzopardi, Angelica Chavez, Michelle Hwang, Marsella, Lisa McCaskill, Thomas Vo, and Florence Yuan for their assistance conducting this research, and the members of the Relationships and Social Cognition Laboratory for their feedback.

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¹ For just a few examples, see <http://www.psychologytoday.com/blog/imperfect-spirituality/201409/managing-everyday-stressors-is-key-health-and-longevity>; <http://erandror.com/2013/08/15/stress-and-coping-how-do-i-get-over-the-feeling-of-stress/>; <http://www.inc.com/geoffrey-james/21-great-ways-to-conquer-stress.html>

² Note that the term *temporal distance* has been used more broadly in the construal level theory literature to refer to how far away in time an object or event feels from the self in the here-and-now (for a review, see Trope & Liberman, 2010).

“Perspective-broadening” or “bigger picture” strategies are those that emphasize the ability to “see the bigger picture regarding a discrete event by adopting a broader perspective toward it” (Schar-
tau, Dalglish, & Dunn, 2009, p. 16). This broader perspective can be achieved by viewing personal experiences from a psychologically distant vantage point. For example, one can envision a current negative experience through the eyes of a distant-future self (i.e., temporal distancing) or from an outside observer-like perspective (i.e., self-distancing; Bruehlman-Senecal & Ayduk, 2015; Kross & Ayduk, 2011). A broader perspective can also be achieved by situating one’s experiences in a broader human context, for example, by reflecting on how all people experience stress and loss (Rude, Mazzetti, Pal, & Stauble, 2011). Perspective-broadening strategies are considered to be forms of reappraisal, because they involve the act of reframing an emotion-eliciting situation in such a way that changes its affective impact (Gross & John, 2003).

Perspective-broadening strategies are theorized to be helpful precisely because the perspective shift inherent in them can facilitate new and adaptive insights about negative experiences (Kross & Ayduk, 2011). The theory that it is adaptive to observe one’s experiences from a broader, more distanced perspective also has strong roots in cognitive behavioral therapy (CBT). Many of the appraisal patterns identified as maladaptive in the CBT literature relate to difficulty seeing the bigger picture, for example, by overlooking how one’s circumstances may improve with time (Schartau et al., 2009). CBT theorists have further proposed that distanced observation of one’s thoughts and feelings can ameliorate distress by enabling people to more objectively identify and challenge irrational beliefs (Beck, 1970). Likewise, mindfulness training emphasizes the importance of “decentering,” which involves taking a step back from one’s thoughts and feelings and observing them as passing events in the mind, in promoting well-being (e.g., Sauer & Baer, 2010).

One perspective-broadening strategy that has received growing empirical attention involves adopting a distant-future (i.e., temporally distant) perspective on negative experiences. A temporally distant perspective can be achieved, for example, by imagining how one might perceive a current negative experience one year, five years, or ten years down the road. Recent experimental work demonstrates that temporal distancing plays an important role in regulating the emotional distress associated with negative experiences (Bruehlman-Senecal & Ayduk, 2015; Yanagisawa et al., 2011). Across multiple experiments, participants randomly assigned to reflect on a presently bothersome stressor from a distant-future perspective (i.e., envisioning how they would perceive their stressor 10 years in the future) reported significantly less distress than participants assigned to reflect from a near-future perspective (i.e., envisioning how they would perceive their stressor 1 week in the future; Bruehlman-Senecal & Ayduk, 2015). Moreover, participants in distant-future conditions reported less distress than participants assigned to reflect on their personal stressors in any way that they believed would be helpful for them, suggesting that temporal distancing helps to reduce distress even more effectively than the strategies people naturally rely upon when facing personal stressors.

Importantly, temporal distancing appears to reduce distress by highlighting aspects of negative experiences that are impermanent in nature. Across the experiments just discussed, participants in the

distant-future conditions reported focusing significantly more on the impermanent aspects of their stressors than those in the near-future or control conditions (Bruehlman-Senecal & Ayduk, 2015). For example, participants in the distant-future condition were more likely to consider that their present hurt feelings would fade, and that their stressors would seem insignificant with the passage of time. Critically, participants’ degree of focus on these impermanent aspects consistently mediated the link between temporal distancing and reduced distress. Moreover, manipulating focus on the impermanent (vs. permanent) aspects of personal stressors was found, in a separate study, to reduce emotional distress in a manner parallel to manipulating temporal distance (Bruehlman-Senecal & Ayduk, 2015), further strengthening the evidence for this causal link. Taken together, these findings suggest that temporal distancing reduces emotional distress by activating the insight that many aspects of negative experiences are temporary in nature.

The reviewed temporal distancing research adds to prior work demonstrating that a variety of perspective-broadening strategies—including self-distancing, as well as situating one’s personal experiences in a broader human context—ameliorate distress (e.g., Ayduk & Kross, 2008; Kross & Ayduk, 2008; Kross, Ayduk, & Mischel, 2005; Kross et al., 2014; Rude et al., 2011). It also supports prior research suggesting that perspective-broadening strategies reduce distress by facilitating new and adaptive insights into the nature and meaning of negative experiences (Kross & Ayduk, 2011). One strength of this body of research is that it has established a direct causal link between temporal distancing, as well as other perspective-broadening strategies, and reduced distress. On the other hand, this research has focused on outcomes that are relatively short-term—such as momentary reductions in negative affect—which leaves open the question of whether temporal distancing has implications for longer term well-being. Moreover, as with any experimental research, the tight and artificial control of the settings in which these experiments were conducted might have led to overestimations of effect size, limiting the generalizability of the findings beyond the lab. For these reasons, complementary approaches are needed that assess the consequences of temporal distancing in everyday life.

Individual Differences in Perspective Broadening

To evaluate whether the prior experimental findings translate to real life, research is needed to assess the cumulative impact of the natural use of perspective-broadening strategies. There is some research consistent with the possibility that individuals vary in their tendency to adopt a broader perspective on negative experiences, and that these differences have implications for well-being. For example, prior research has demonstrated that people who spontaneously (i.e., without prompting) self-distanced from a negative personal memory were less affectively (Ayduk & Kross, 2010; White, Kross, & Duckworth, 2015) and physiologically (Ayduk & Kross, 2010) reactive when reflecting on their memory than people who spontaneously reflected from their own, egocentric perspective. Likewise, participants who spontaneously focused on the temporally bound aspects of a single personal stressor were less emotionally reactive to this stressor than those less attuned to its temporary aspects. They also reported lower levels of depressive symptoms and worry, and higher life satisfaction in the recent past (Bruehlman-Senecal & Ayduk, 2015).

However, across these prior studies, participants were asked to indicate the extent to which they adopted a broader perspective on just one or a few negative experiences. Therefore, these findings do not speak to whether individuals differ in their *global* use of perspective-broadening strategies, although they do suggest that there may be similar, and perhaps more pronounced benefits associated with their regular use. The present studies directly test this possibility by examining whether individuals differ in the habitual tendency to engage in one important perspective-broadening strategy—temporal distancing—and if so, what implications these differences have for well-being.

Temporal Distancing and the Broader Tendency to Reappraise

We consider temporal distancing, and other perspective-broadening strategies, to be forms of cognitive reappraisal. Cognitive reappraisal is defined as the act of “construing a potentially emotion-eliciting situation in a way that changes its emotional impact” (Gross & John, 2003). Temporal distancing fits within this definition because it involves cognitively reframing emotional experiences in a manner demonstrated to reduce negative affect. If temporal distancing is simply one of many forms of reappraisal, one might wonder whether there is utility in measuring its use, above and beyond that conferred by a broader assessment of reappraisal. Indeed, a well-validated and widely used individual difference measure of general reappraisal tendencies already exists—the reappraisal scale of the Emotion Regulation Questionnaire (ERQ-R). This scale measures the general tendency to engage in *any* form of reappraisal, without regard to the specific reappraisal strategies used. For example, one representative ERQ-R item reads “I control my emotions by changing the way I think about the situation I am in.”

Individual differences in the general tendency to reappraise, as measured by the ERQ-R, have been shown to predict well-being in a manner similar to the theorized effects of temporal distancing. For example, high reappraisers have been found to experience greater positive and less negative emotion, to have higher satisfaction with life, and to report fewer depressive symptoms (Gross & John, 2003). Why then might there be value in measuring the use of specific reappraisal strategies, like temporal distancing? One reason is that these specific measures may offer predictive utility above and beyond that provided by the more general ERQ-R. In support of this possibility, recent research indicates that people use a wide variety of reappraisal strategies to regulate their emotions, and that the effects of these regulation efforts may vary depending upon the specific reappraisal goals they hold and strategies they use (McRae, Ciesielski, & Gross, 2012). Moreover, it seems plausible that certain forms of cognitive reappraisal (e.g., perspective-broadening strategies, positive reframing, etc.) may be more psychologically adaptive than other forms (e.g., downward social comparison). Thus, there may be value in understanding the stand-alone implications of specific reappraisal strategies—such as temporal distancing—as well as in assessing their predictive power apart from the general tendency to reappraise.

The Present Research

The present research directly addresses whether temporal distancing operates as a stable, regulatory tendency, and explores the

implications of this tendency for individuals’ emotional experiences, their appraisals of and reactivity to stressors, and their subjective well-being. Consistent with prior experimental research, we expected naturally arising individual differences in temporal distancing to negatively predict emotional reactivity to negative experiences. Based on prior theory and research, we likewise predicted that high temporal distancers³ should experience greater positive and lesser negative affect in daily life, appraise and cope with stressful experiences in a more adaptive manner, and report greater well-being than low distancers.

There is no existing measure of the global tendency to temporally distance from negative experiences. Thus, to test our predictions we developed and analyzed the psychometric properties of a new eight-item measure of this tendency. Temporal distancing involves placing negative experiences into a broader future time perspective, an act that reduces distress by highlighting the impermanent aspects of such experiences. Because focusing on the impermanent aspects of negative events is part and parcel of the phenomenon of temporal distancing—indeed the active ingredient in reducing distress—we developed a measure that assesses the joint tendency to adopt a distant-future perspective on negative events *and* to focus on their temporary aspects (e.g., “I focus on how my feelings about the event may *change with time*”). Simply put, this new measure assesses both the act of temporal distancing from negative experiences and the mechanism experimentally demonstrated to account for its benefits.

Using this newly developed measure, the present research additionally explores the larger question of the utility of measuring specific reappraisal strategies, apart from the broader tendency to reappraise. It does so by assessing the convergence of our new temporal distancing measure with the ERQ-R, as well as testing this measure’s incremental validity above and beyond that of the ERQ-R. We expected temporal distancing to converge, but not be redundant with the ERQ-R. This is because high reappraisers are likely to vary in their use of specific reappraisal strategies, and so there is unlikely to be a one-to-one relationship between endorsement of items on the ERQ-R and our new measure of temporal distancing. However, because of the clear conceptual overlap between temporal distancing and reappraisal, we measured and controlled for the shared variance between temporal distancing and the ERQ-R in predicting all study outcomes. Testing the predictive utility of temporal distancing in relation to the ERQ-R can advance understanding of how best to conceptualize and measure reappraisal by addressing the basic question of whether there is value in studying the use of specific reappraisal strategies, apart from the broader tendency to reappraise. To the best of our knowledge, this research is the first to test whether a measure of a specific habitual reappraisal strategy predicts variance in psychological health outcomes above and beyond that predicted by broader reappraisal tendencies.

We conducted a series of seven studies in testing our hypotheses. Study 1 describes the construction and reliability of the Temporal Distancing Questionnaire (TDQ), a new measure of individ-

³ We use the phrase “high temporal distancers” throughout the manuscript to refer to people who are higher on the spectrum of temporal distancing. We do so for the sake of brevity, while acknowledging that temporal distancing is a continuous measure, and that people who are characterized as “high temporal distancers” are higher on this relative continuum, and not in a separate group or class.

ual differences in the tendency to put negative experiences into a broader future time perspective, and to focus on their impermanent aspects. Study 2 establishes a nomological network around this construct, examining the relationship of temporal distancing to other, theoretically related constructs. Study 3 tests whether people high in temporal distancing (i.e., “high temporal distancers”) experience greater concurrent psychological well-being, including greater positive affect and life satisfaction and lesser negative affect, worry, and depressive symptoms. Study 4 examines whether temporal distancing predicts well-being measured at the daily level, and across time. Finally, Studies 5a–5c explore a key way in which temporal distancing may support psychological well-being—by facilitating more adaptive responses to stressful and otherwise negative events.

Study 1: Psychometrics and Group Differences

Study 1 describes the construction and initial test of the structure and reliability of the Temporal Distancing Questionnaire, and explores the relationship of this new measure to the reappraisal scale of the Emotion Regulation Questionnaire (ERQ-R). Study 1 also examines whether individual differences in temporal distancing are linked to any basic demographic characteristics, such as gender or ethnicity.

Method

Participants. The original item selection procedures were conducted using data from Sample A of Table 1. Subsequent analyses were run on Samples B–G. Participants in all samples were undergraduates at large U.S. universities (see Table 1 for a summary of sample characteristics).

Item generation. Our first goal was to develop items for the temporal distancing measure. Our initial item pool was derived rationally, by drawing on prior theory and research on temporal distancing. Table 2 displays the manner in which temporal distancing has been studied in previous research. Prior experimental research demonstrates that placing negative events into a broader time perspective reduces distress by leading people to construe their *feelings* and *thoughts* about these events as temporary and

malleable, and to perceive the *consequences* of these events as limited in scope (Bruehlman-Senecal & Ayduk, 2015). Directly reflecting this research, we generated items that fell into three broad content clusters. Items in the first cluster measured the tendency to reflect on the malleability of one’s *feelings* about negative events, contemplating how one’s feelings may change or fade with time. The second cluster measured the tendency to consider how one’s perceptions or *thoughts* about negative events may change with time, as well as to consider where negative events fit into the bigger picture of one’s life. The third cluster assessed the tendency to focus on the impermanence of the *consequences* of negative events. This rational approach was designed to ensure that the item pool had sufficient conceptual breadth to cover all domains of interest. Table 2 provides sample items illustrative of each content cluster.

In generating our initial pool of items, we originally wrote 14 items, approximately half of which were reverse-coded to prevent response bias. In developing the items, we took care to limit item content to the regulatory strategy under study, and to avoid any language suggesting that this strategy had positive or negative consequences for affect regulation or psychological functioning. We also elicited feedback on the wording and content of the items from other researchers studying emotion-regulation, who judged the items to be face valid. This 14-item questionnaire was subsequently administered to a large college student sample ($n = 1746$, see Sample A from Table 1). In this and all subsequent studies, participants were given the following instructions:

Everyone gets confronted with negative or unpleasant events now and then and everyone responds to them in his or her own way. In the following questions, you are asked to indicate how you typically respond when you face negative or unpleasant life events. Please indicate how you generally respond, not how you think you should respond.

Participants rated their agreement with the items on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*).

As expected, the three content clusters described above were strongly correlated (r s ranging from .66 to .72), suggesting that the items across clusters assess very similar manifestations of the same

Table 1
Sample Characteristics and Within-Sample Means and Standard Deviations (SDs) for the Temporal Distancing Questionnaire (TDQ)

	Sample							
	A	B1	B2	C	D	E	F	G
Sample size	1746	179	176	131	266	111	347	208
Mean age in years (SD)	20.7 (3.3)	20.0 (1.7)	20.0 (2.2)	21.7 (3.3)	20.5 (3.1)	23.6 (7.2)	21.1 (3.6)	20.7 (2.0)
% women	61	65	68	76	67	61	66	73
% African American	2	3	3	2	1	0	1	1
% Asian/Asian American	52	42	46	44	47	0	47	40
% European American	24	30	29	37	39	84	26	42
% Latino	7	7	7	6	6	0	12	10
% Other ethnicity	15	18	15	11	7	16	14	7
Means (SD) for TDQ	4.40 (.94)	4.40 (1.01)	4.56 (.91)	4.67 (.91)	4.50 (1.08)	4.35 (1.34)	4.69 (.85)	4.66 (1.13)
Studies in which sample is included	Study 1	Studies 1, 2, & 3	Studies 1 & 2	Studies 1, 2, 3, & 5b	Studies 1, 3, & 5c	Studies 1, 4, & 5a	Studies 1 & 2	Studies 1 & 2

Note. To ensure the quality of our data, we embedded instructional manipulation checks within the larger questionnaires of samples B1–D, F, and G. We excluded participants’ data if they failed more than one of the three to four manipulation checks embedded within each survey. Failure of multiple manipulation checks indicated that the participant was not reading the content of the questions, but rather answering questions carelessly. Exclusions by study were as follows: B1, 21 participants excluded (11% of the sample); B2, 25 excluded (12%); C, 20 excluded (13%); D, 25 excluded (9%); F, 14 excluded (4%); G, 13 excluded (6%). Statistics reported in this and in all subsequent tables exclude the data of these participants.

Table 2

Relation of Temporal Distancing Questionnaire to Prior Experimental Manipulations and Sample Items by Content Cluster

Experimental manipulation of temporal distance	Experimental manipulation of impermanence	Individual differences: Sample items in 3 domains
We would like you to close your eyes and try to imagine what your life will be like <i>10 years (one week)</i> from today . . . Now we would like you to consider how you will feel about your problem 10 years (one week) from today. Do you think this experience will shape the way you feel at this <i>distant-future (near-future)</i> time point? What emotions, if any, might you experience as you reflect on your problem in the <i>distant future (near future)</i> <i>10 years (1 week)</i> from today?	We would like you to focus on the problem you just identified. Although some aspects of this experience may <i>remain the same (change)</i> , <i>others are likely to change (remain the same)</i> . Consider those elements of this experience that may <i>change with (endure over)</i> time. Reflect on how some of your feelings and thoughts may be <i>temporary (linger)</i> . Consider how some of the current consequences of this experience may <i>fade or may not be relevant to your future life (persist and have a lasting impact on you)</i> . . .	<p>Feelings “I tell myself that my <i>feelings</i> about the event are temporary.”</p> <p>Thoughts “I <i>think</i> about how small the event is in the bigger picture of my life.”</p> <p>Consequences “I generally don’t consider that the <i>consequences</i> of the event may be temporary.” (reverse-keyed)</p>

Note. Another version of the temporal distancing instructions focused on the future **consequences** of the event for the self, rather than on the future feelings the individual might have; this version of the manipulation had equivalent effects on the dependent variables (Bruehlman-Senecal & Ayduk, 2015).

underlying construct. Next, we conducted both an exploratory factor analysis (EFA) and a confirmatory factor analysis (CFA) to evaluate whether a single-factor solution fit the data well, or whether the data was better characterized by a three-factor solution, corresponding to the three content clusters of feelings, thoughts, and consequences. Because Sample A was large ($n > 1700$), we employed a common practice of randomly splitting this sample into two halves, and subsequently conducting an EFA in one half of the data and a CFA in the other (Fabrigar & Wegener, 2014; Wang, Watts, Anderson, & Little, 2013).

The results of both the EFA and the CFA demonstrated that a single factor solution fit the data well. Consistent with the possibility that the items tap into a single underlying construct, the scree test in the EFA suggested the presence of a single general factor, with all items having substantial loadings on this first unrotated (i.e., general) factor, averaging .61. Moreover, this first factor explained 38% of the total variance of this initial item set.

We also conducted a CFA to directly compare the fit of a single-factor model to that of a three-factor model using LISREL. Because of the non-normality of some of the temporal distancing items, we estimated both models with the AC matrix, allowing for robust estimation of standard errors. The “single-factor” model specified that all 14 items would load onto a single, general temporal distancing factor. Across all standard fit indices, the single-factor model showed adequate model fit, with the CFI = .95, the NNFI = .94, the SRMR = .07, and the RMSEA = .09. We compared this single-factor model to a three-factor model, which specified that the items in the three content clusters would load onto three distinct but correlated factors. Selecting the most conservative option, we allowed LISREL to freely estimate the correlations between these factors. This more complex three-factor model did not improve the aforementioned fit indices over the simpler single-factor model (the CFI = .95, the NNFI = .94, the SRMR = .07, and the RMSEA = .09). In other words, these results confirmed that the more parsimonious, single-factor model fit the data just as well as a more complex three-factor model. Taken together, the results of the EFA, CFA, and the substantial intercorrelations between the content clusters suggest that the temporal distancing items tap into a single underlying construct, and thus that this measure should be treated as unifactorial.

Emotion Regulation Questionnaire (ERQ). The ERQ is a 10-item measure of individual differences in the habitual use of two emotion-regulation strategies—cognitive reappraisal and expressive suppression. Its six-item reappraisal scale (ERQ-R) measures the tendency to regulate one’s emotions by altering one’s thoughts (e.g., “I control my emotions by changing the way I think about the situation I’m in”), without regard to the specific reappraisal strategy used. The four-item suppression scale (ERQ-S) measures the tendency to conceal the emotions that one is inwardly feeling (e.g., “I control my emotions by not expressing them”). Participants rated their agreement with these statements on a 7-point scale (*strongly disagree* to *strongly agree*). Alphas across Samples B1–G ranged from .84 to .92 for reappraisal and from .69 to .84 for suppression.

Results

Analysis overview. The data analysis proceeded in stages. First, we selected items from the initial item pool of 14 items for retention in the final scale, a process described below. Next, we examined the factor structure of the final scale using EFA, and tested its internal consistency and temporal stability. Subsequently, we explored the relation of this scale to the ERQ using both EFA and CFA. Finally, we tested for demographic differences in temporal distancing.

Item selection. We reduced the length of the 14-item temporal distancing measure by selecting two to three items for inclusion from each content cluster, with each cluster containing at least one reverse-scored item. We had two goals in culling items: one was to eliminate items that clearly functioned differently from the rest of the pool (i.e., did not correlate well with the other items). The second was to minimize conceptual and empirical redundancy among our items by removing those with content that overlapped too heavily or that correlated too highly with other items. In doing so, we sought a balance between measuring our core construct of interest reliably and capturing the full breadth of this construct by selecting a heterogeneous item pool (see John & Soto, 2007 for an argument for this approach). To achieve this, we utilized corrected item-total correlations to eliminate less optimal items. For example, the item “I question whether the event will really have a lasting impact on my life” was eliminated due to its low corrected item-correlation (.36). Like-

wise, we used our subjective judgment to weed out items that had highly overlapping content. For example, both the items “I focus on how my perception of the event may change over time” and “I rarely consider how my perception of the event may change over time” were included in the 14-item version of the TDQ. Because the content of these items was highly overlapping, we retained only the reverse scored item among the final eight items.

This final eight-item version of the questionnaire was administered to seven additional college student samples (Samples B1–G). The factor structure and internal consistency of this eight-item scale was assessed across all samples (see Table 3). A subset of participants in Sample A ($n = 132$) completed a second survey 35.8 days ($SD = 2.8$ days) after the first to assess the scale’s temporal stability.

Exploratory factor analyses. Exploratory principal-components analyses were conducted on the eight-item scale across samples B1–G. Across samples, the scree test consistently suggested the presence of a single general factor that explained between 36% to 64% of the total scale variance (see Table 3 for the factor loadings for each of the items across studies).

Reliability.

Internal consistency. The Cronbach’s alpha coefficients for each of our samples are reported in Table 3. In all but one of eight samples, the alpha was above .80.

Temporal stability. The approximately 1-month test–retest reliability coefficient was .63, indicating that temporal distancing tendencies are reasonably stable over time.

Relations to the ERQ. Using both exploratory and confirmatory factor analyses, we examined the relationship between tem-

poral distancing and the general tendency to reappraise, as measured by the ERQ-R. We expected temporal distancing to be related to but not redundant with general reappraisal, and thus predicted that the TDQ and ERQ-R would load on two distinct but positively correlated factors. Following past research (Gross & John, 2003), we expected suppression, as measured by the ERQ-S, to load on its own independent factor.

Exploratory factor analyses. We aggregated the data from Samples B1 and C to conduct EFA on the combined items from the TDQ and the ERQ. Results are summarized in Table 4, which gives the VARIMAX loadings on each factor. There was no evidence for a single reappraisal factor. Instead, the scree test suggested the presence of three distinct factors: a temporal distancing factor, a reappraisal factor, and a suppression factor. These three factors accounted for more than 57% of the variance in the sample. Across all three factors, the hypothesized loadings were higher than the highest of all cross loadings (mean cross-loading = .10). These results suggest that the TDQ is substantively distinct from the ERQ-R. Further supporting this interpretation, the average correlation between the TDQ and the ERQ-R across those samples that included both measures was .39 (see Table 3 for correlations within each sample), suggesting that these measures are related but distinguishable.

Confirmatory factor analyses. A series of CFAs tested our predictions more stringently using data drawn from Sample D. We used LISREL to compare three models. The first “three-factor” model reflected our hypothesis that temporal distancing and reappraisal would load on two separate but correlated factors, and that

Table 3

Study 1: Factor Loadings and Alpha Reliabilities for the Eight Items on the Temporal Distancing Questionnaire (TDQ), and Correlations to the ERQ-R

Item	Sample								All samples
	A	B1	B2	C	D	E	F	G	
Factor loadings									
I focus on how my feelings about the event may change with time.	.61	.60	.67	.75	.71	.84	.62	.80	.66
I tell myself that my feelings about the event are temporary.	.69	.75	.72	.82	.75	.80	.70	.76	.72
The possibility that my feelings will fade with time rarely occurs to me.	.66	.71	.64	.54	.74	.81	.55	.72	.66
I think about how small the event is in the bigger picture of my life.	.70	.79	.75	.80	.73	.82	.65	.75	.72
I rarely consider how my perception of the event will change with time.	.62	.74	.55	.58	.72	.85	.53	.72	.64
I generally don't take a step back from the event and place it in a broader perspective.	.64	.75	.71	.76	.70	.78	.54	.76	.66
I tell myself that this event probably won't impact my life very far into the future.	.61	.63	.49	.52	.70	.62	.59	.69	.61
I generally don't consider that the consequences of the event may be temporary.	.67	.69	.65	.60	.76	.84	.58	.82	.69
Alpha coefficients									
Internal consistency	.80	.86	.80	.82	.87	.92	.74	.89	.82
Percentage of variance explained by first factor									
General temporal distancing factor	42	50	42	46	53	64	36	57	45
Correlations of 8-item TDQ with ERQ-R	N/A	.38	N/A	.44	.40	.45	.29	.46	.39

Note. All computations using factor loadings, alpha reliability coefficients (e.g., means across samples or items), and correlations were conducted using Fisher’s r -to- z transformation and weighted by sample size. ERQ-R = Six-item reappraisal scale of the Emotion Regulation Questionnaire.

Table 4

Study 1: VARIMAX Rotated Factor Loadings for Items on the Temporal Distancing, Reappraisal, and Suppression Scales

Factor	VARIMAX factor loadings		
	Factor 1	Factor 2	Factor 3
Temporal distance factor			
1. I focus on how my feelings about the event may change with time.	.22	.63	-.13
2. I rarely consider how my perception of the event will change with time.	.12	.68	-.05
3. I think about how small the event is in the bigger picture of my life.	.26	.75	.08
4. I generally don't take a step back from the event and place it in a broader perspective.	.15	.74	-.07
5. I tell myself that my feelings about the event are temporary.	.24	.74	.06
6. I generally don't consider that the consequences of the event may be temporary.	.12	.64	-.06
7. I tell myself that this event probably won't impact my life very far into the future.	.05	.61	.12
8. The possibility that my feelings will fade with time rarely occurs to me.	.10	.65	-.10
Mean factor loadings	.16	.69	-.02
Reappraisal factor			
1. When I want to feel more positive emotion (such as joy or amusement), I change what I'm thinking about.	.73	.19	.02
2. When I want to feel less negative emotion (such as sadness or anger), I change what I'm thinking about.	.80	.14	-.02
3. When I'm faced with a stressful situation, I make myself think about it in a way that helps me stay calm.	.58	.27	.04
4. When I want to feel more positive emotion, I change the way I'm thinking about the situation.	.89	.11	.00
5. I control my emotions by changing the way I think about the situation I'm in.	.83	.23	-.02
6. When I want to feel less negative emotion, I change the way I'm thinking about the situation.	.86	.17	-.03
Mean factor loadings	.80	.19	.00
Suppression factor			
1. I keep my emotions to myself.	-.10	.00	.80
2. When I am feeling positive emotions, I am careful not to express them.	-.09	.05	.71
3. I control my emotions by not expressing them.	.02	-.03	.84
4. When I am feeling negative emotions, I make sure not to express them.	.22	-.16	.72
Mean factor loadings	.01	-.04	.77

Note. Data are from Samples B1 and C combined. Emotion Regulation Questionnaire reappraisal and suppression items reprinted from Gross and John (2003). All computations using factor loadings (e.g., means across items) were conducted using Fisher's r -to- z transformation. The nonitalicized values in bold represent the factor that the respective items load onto most highly.

suppression would load on a third orthogonal factor. In testing this first model, we allowed LISREL to freely estimate the covariance between the temporal distancing and reappraisal factors, but fixed the covariance of both the temporal distancing and reappraisal factor to the suppression factor to zero. We tested this hypothesized model against two competing models, an "independence model" and a "single reappraisal factor" model. The independence model specified that reappraisal, temporal distancing, and suppression would load on three orthogonal factors. The single reappraisal factor model specified that the reappraisal and the temporal distancing items would load together on a single reappraisal factor, orthogonal to the suppression factor. Because of the non-normality of some scale items in both the ERQ and the Temporal Distancing Questionnaire, we estimated each model with the AC matrix, allowing for robust estimation of standard errors. Across all standard fit indices, the hypothesized three-factor model showed good model fit, with both the CFI and NNFI = .96, the SRMR = .08, and the RMSEA = .07. More importantly, the hypothesized model provided a significantly better model fit than the independence model (Sattora-Bentler scaled chi-square difference (TRd) = 28.14, $p < .01$) and the single reappraisal model (TRd = 39696.24, $p < .001$). The hypothesized model also fit the data just as well as a model in which the covariances between all three factors were freely estimated (TRd = 1.06, $p > .05$).⁴ These results further support distinguishing temporal distancing from the broader tendency to engage in any form of reappraisal.

Demographic differences. Men and women did not significantly differ in their levels of temporal distancing across any of the eight samples (all t s < 1.60, all p s > .10). Across these samples,

the means ranged from 4.27 to 4.85 ($SD = .75$ to 1.17) for men and from 4.32 to 4.73 ($SD = .81$ to 1.44) for women. Ethnicity effects were tested in Sample A, our largest sample, using an ANOVA with ethnicity as a between-participants variable. There were no significant differences between any of the ethnic groups in their level of temporal distancing, $F(4, 1707) = 0.27$, $p = .90$.

Study 1 Summary

The results of Study 1 suggest that the eight-item TDQ measures a single underlying construct and demonstrate this measure's high internal consistency and acceptable temporal stability. They also support the hypothesis that the TDQ is related to but empirically distinct from the broader tendency to reappraise, as measured by the ERQ-R. Due to the conceptual and empirical overlap between the TDQ and the ERQ-R, in the studies that follow we report the zero-order correlations of both the TDQ and the ERQ-R to our outcomes of interest, as well as the partial correlations for the TDQ controlling for the ERQ-R. These latter analyses allow us to examine whether the TDQ accounts for unique variance in our outcomes of interest. Although not a focus of the present investigation, we also report the correlations of the ERQ-S to the depen-

⁴ The results of both the EFA and CFA remain substantively similar when the suppression items are excluded from the factor analyses. In the EFA, temporal distancing and reappraisal continue to load on two distinct factors, and in the CFA, the hypothesized model shows significantly better fit than the independence or single reappraisal models.

dent variables in our tables, as they may be of general interest to emotion-regulation researchers.

Study 2: Establishing a Nomological Net—Relations to Other Constructs

An important first step in better understanding a construct is to assess its convergence with conceptually related constructs. In the present study, we assessed the convergence of our new global measure of temporal distancing tendencies, the TDQ, with participants' reports of how they would regulate their emotions when facing a wide variety of negative events. We reasoned that participants scoring higher on the global TDQ should be more likely to report responding to a range of negative events by temporally distancing from them than those lower in this tendency. Moreover, we expected the TDQ to converge more strongly with this event-specific index of temporal distancing, than with global measures of related but different constructs, such as reappraisal.

We also examined the relationship of temporal distancing to four other conceptually relevant constructs: (a) those related to observing inner experiences from a broader, observer-like perspective, (b) future time perspective constructs, (c) implicit theories about negative events and emotions, and (d) emotion-regulation self-efficacy. We discuss each in turn below. Finally, we explored the relationship between temporal distancing and higher-level personality and self-control constructs, as well as socially desirable responding.

We expected that temporal distancing would converge with constructs related to the ability to view inner thoughts and feelings from a broader vantage point—such as 'decentering' and 'nonreactivity to inner experiences.' "Non-reactivity," a facet of mindfulness, refers to the tendency to step back from one's thoughts and feelings and notice them without reacting impulsively to them (Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006). Another related construct is "decentering," defined as the ability to observe one's own thoughts and feelings as transitory, objective events in the mind (Fresco et al., 2007). These constructs are conceptually related to perspective-broadening, because they both involve, in part, the tendency to observe inner experiences from a broader, more distanced perspective. However, both decentering and non-reactivity additionally assess cognitive self-control (e.g., "I can slow my thinking in times of stress"), and decentering also assesses self-compassion (e.g., "I can treat myself kindly"; Fresco et al., 2007). Moreover, unlike temporal distancing, neither nonreactivity nor decentering tap into the tendency to adopt a future-oriented perspective on present negative experiences. For these reasons, we expected temporal distancing to be only moderately related to, and thus distinct from both nonreactivity and decentering.

We also explored the relationship of temporal distancing to other future time perspective constructs—that is, constructs related to how people conceptualize their personal futures. One such construct that has been widely studied is the extent to which people attend to and prioritize their long-term goals over the short-term gratification of impulses (e.g., Strathman, Gleicher, Boninger, & Edwards, 1994; Zimbardo & Boyd, 1999). A second is the extent to which people view the time left in their life as limited versus expansive (e.g., Lang & Carstensen, 2002). We did not expect temporal distancing to overlap heavily with either of these con-

structs, because although temporal distancing relates to perceptions of the future, it does not tap into the tendency to prioritize long-term goals, or directly relate to perceptions of one's future as expansive.

Another open question is whether temporal distancing tendencies are distinct from general beliefs (i.e., implicit theories) about the stability of the causes or consequences of negative events or emotions, beliefs that are known to predict psychological well-being. A large body of work on attributional style demonstrates that the tendency to view the *causes* of negative life events as stable, along with several other attributional tendencies, contributes to distress and depression (for a review, see Peterson & Seligman, 1984). Similarly, more recent research suggests that people who believe emotions are malleable tend to experience greater well-being than those who view them as fixed (Tamir, John, Srivastava, & Gross, 2007). Temporal distancing involves focusing on the malleability of negative events and one's reactions to them, and thus is likely to be associated with these constructs. However, temporal distancing differs from these constructs in some important respects. First, the act of temporal distancing involves more than simply holding the general belief that negative events and emotions are malleable—it necessitates being able to access and apply these beliefs to one's own life when faced with negative events. Temporal distancing also involves placing negative events in a broader time frame and recognizing that many different aspects of them—not just one's feelings, but also one's thoughts, the consequences of the event, and so forth—are temporally bound. This constellation of responses is not captured by any existing implicit theory measure. For these reasons, we expected temporal distancing to be only modestly correlated with established implicit theory and attributional style constructs.

We did, however, expect temporal distancing to be robustly associated with emotion-regulation self-efficacy, defined as people's perceived ability to successfully regulate their own emotions. Prior experimental research demonstrates that temporal distancing from negative events helps individuals to regulate negative emotion (Bruehlman-Senecal & Ayduk, 2015; Yanagisawa et al., 2011). In light of these findings, it seemed plausible that people who regularly temporally distance from negative events would feel better able to regulate their emotions than those lower in this tendency. In particular, people high in temporal distancing may feel that they possess effective strategies for down-regulating negative emotion.

To situate temporal distancing within the broader context of personality and self-control, we examined its relation to the Big Five personality factors (John & Srivastava, 1999) and measures of cognitive and behavioral control. Because the Big Five and general self-control are conceptualized as both broader than and superordinate to the use of any single emotion-regulation strategy, we did not expect a high degree of overlap between temporal distancing and any one of these constructs. We did, however, expect temporal distancing to be moderately negatively associated with neuroticism, since a defining feature of neuroticism is high stress reactivity, and temporal distancing has been shown to lower reactivity to stressors. Openness was also of interest, because temporal distancing involves the willingness and ability to view events from a novel and broader perspective, and an important component of openness includes being receptive to new ideas, feelings, and viewpoints. It is also conceivable that temporal distancing could be

linked to better self-control abilities if either people with greater self-control are better at putting negative events into perspective *or* if putting negative events into perspective promotes a more controlled response to these events. Finally, given that temporal distancing is conceptualized as a largely adaptive emotion-regulation strategy, we explored the degree of overlap between temporal distancing and socially desirable responding.

Method

Participants. Participants were drawn from Samples B1, B2, C, F, and G as described in Table 1.⁵ The sample in which each of the following measures was included is indicated with subscripts in Table 5. An additional sample of 133 participants (77 women, mean age = 20.29 years, $SD = 2.81$) was recruited to examine the association of the Temporal Distancing Questionnaire to the Attributional Styles Questionnaire (ASQ), because of the length and complexity of the ASQ. The ERQ was not administered to the sample including the ASQ.

Measures. Items on all of the following measures were averaged, unless otherwise noted, to obtain final scores. Temporal distancing, reappraisal, and suppression were measured in a manner identical to that of Study 1.

Event-specific temporal distancing. To test the prediction that global temporal distancing tendencies, as measured by the TDQ, would converge with event-specific temporal distancing, we surveyed undergraduates' responses to 17 hypothetical scenarios. These scenarios represented negative situations that college students may plausibly face in everyday life, across both interpersonal (e.g., the breakup of a romantic relationship; difficulties with friends), and achievement (e.g., a lower than hoped for GPA; a poor job evaluation) domains. Some of the scenarios were adapted from the Cognitive Style Questionnaire (CSQ; Alloy et al., 2000), a scenario-based measure designed for college student samples. Others were generated by the authors to capture additional negative situations that are relevant to college students' lives.

Participants were presented with five possible response options for each scenario, a temporal distancing option, and four distractor response options, such as reframing the negative event in a more positive light, and distracting oneself from the event with other activities. One example of an interpersonal negative scenario was: "You feel discouraged because you really want to be in a romantic relationship but currently aren't," with the temporal distancing response option being: "I would say to myself 'This is a temporary situation—it's likely to change with time,'" and one distractor option being: "I would keep busy with school and other activities, to get my mind off of it." An example of an achievement negative scenario was "You are upset because in one of your classes you can't get all the assignments done on time and there are no extensions," with the temporal distancing response option being: "I would tell myself that being late on assignments in one class does not determine my whole academic future," and one distractor option being: "I would remind myself that coping with this challenging class can make me a stronger person." Participants were asked to indicate the option that best captured how they would *most likely* respond to the event, assigning this response option a "1". They then indicated their second most likely response

with a "2," and so forth, with the value of "5" reserved for their least likely response. Responses to the temporal distancing items across the 17 scenarios were scored such that a higher score indicated a greater endorsement of temporal distancing.

The internal consistency of the full 17-scenario index was high ($\alpha = .81$). However, three of the 17 scenarios did not cohere well with the others, as indicated by corrected item-total correlations below .30. These three items were omitted from the index. Responses were then averaged across the remaining 14-scenarios to form a total event-specific temporal distancing index ($M = 3.23$, $SD = 0.71$, $\alpha = .80$).

Broader, observer-like perspective. *Decentering* was measured using the 11-item decentering scale from the Experiences Questionnaire (EQ; Fresco et al., 2007), an example item of which is "I can separate myself from my thoughts and feelings." Participants rated items on a 5-point scale (1 = *never* to 5 = *all of the time*), $\alpha = .87$.

Nonreactivity was measured using the Nonreactivity to Inner Experiences subscale of the 5-factor Mindfulness Questionnaire (Baer et al., 2006). A sample item reads: "Usually when I have distressing thoughts or images, I am able to just notice them without reacting," rated on a 5-point scale (1 = *never or very rarely true* to 5 = *very often or always true*). Sample C completed the full seven-item version of this subscale ($\alpha = .86$), whereas Sample B1 completed a short version that only included three of the original items ($\alpha = .65$).

Future time perspective. All of the future time perspective measures below were assessed on the same 7-point (1 = *strongly disagree* to 7 = *strongly agree*) scale.

Prioritization of long-term goals. Two commonly utilized measures of the tendency to delay short-term gratification in favor of achieving long-term goals were used here: The Consideration of Future Consequences Scale (CFC; Strathman et al., 1994) and the Future Scale of the Zimbardo Time Perspective Inventory (ZTPI; Zimbardo & Boyd, 1999). One sample item from the 12-item CFC reads: "I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes," $\alpha = .88$. One sample item from the ZTPI reads "Meeting tomorrow's deadlines and doing other necessary work comes before tonight's play." In Sample B2, a short five-item version of the future subscale of the ZTPI was used in lieu of the full 13-item version ($\alpha = .73$), whereas the full version was included in Sample C ($\alpha = .74$).

Perceiving own future as expansive. The Future Time Perspective Scale (FTP) was used to measure participants' perception of their future as expansive versus limited (Lang & Carstensen, 2002). One sample item from this 10-item scale reads: "Most of my life lies ahead of me," $\alpha = .85$.

Implicit theories of emotion and attributional style.

Implicit theories of emotion duration. Participants rated the extent to which they believe people's emotions tend to endure with three items on a 7-point bipolar scale. One sample item reads: "In general, emotions that people experience are: 1 = *short-lived* to 7 = *persistent*," $\alpha = .90$ (Labroo & Mukhopadhyay, 2009).

⁵ In this, and all subsequent studies, when the same outcome measure was included in more than one sample we ran the analyses for this outcome after merging the respective samples. Combining the samples in this manner increased the sample size, thus increasing statistical power and the reliability of our findings.

Table 5

Study 2: Correlations of Temporal Distancing and ERQ to Theoretically Relevant Constructs

	Temporal distancing	Temporal distancing (partial) ^a	Reappraisal	Suppression
Event-specific temporal distancing	.61 _G ^{**}	.55 _G ^{**}	.30 _G ^{**}	-.35 _G ^{**}
Broader-perspective				
Decentering (EQ)	.49 _C ^{**}	.35 _C ^{**}	.49 _C ^{**}	-.01 _C
Non-reactivity	.39 _{B1C} ^{**}	.28 _{B1C} ^{**}	.37 _{B1C} ^{**}	.14 _{B1C} [*]
Future time perspective				
Consideration of future consequences	.18 _{B2C} ^{**}	.19 _C [*]	.08 _C	-.18 _C [*]
Prioritizing future well-being (ZTPI)	.14 _{B2C} ^{**}	.12 _C	.08 _C	-.20 _C [*]
Perceiving own future as expansive (FTP)	.27 _{B2C} ^{**}	.24 _C [*]	.17 _C [*]	-.16 _C
Implicit theories of emotion and attributional style				
Emotions are long lasting	-.26 _{B1C} ^{**}	-.22 _{B1C} ^{**}	-.14 _{B1C} [*]	.04 _{B1C}
Emotions are controllable	.24 _{B1C} ^{**}	.11 _{B1C} [*]	.33 _{B1C} ^{**}	.01 _{B1C}
Stable attributions for positive events	.12	—	—	—
Stable attributions for negative events	-.04	—	—	—
Emotion regulation self-efficacy				
Difficulties with emotion regulation	-.42 _C ^{**}	-.29 _C ^{**}	-.41 _C ^{**}	.19 _C [*]
Lack of emotion-regulation strategies	-.49 _C ^{**}	-.38 _C ^{**}	-.42 _C ^{**}	.11 _C
Personality (BFI)				
Neuroticism	-.39 _{B1C} ^{**}	-.27 _{B1C} ^{**}	-.38 _{B1C} ^{**}	.00 _{B1C}
Extraversion	.13 _{B1C}	.05 _{B1C}	.19 _{B1C} ^{**}	-.40 _{B1C} ^{**}
Openness	.15 _{B1C} [*]	.08 _{B1C}	.19 _{B1C} ^{**}	-.10 _{B1C}
Agreeableness	.22 _{B1C} ^{**}	.15 _{B1C} [*]	.22 _{B1C} ^{**}	-.13 _{B1C} [*]
Conscientiousness	.05 _{B1C}	.02 _{B1C}	.06 _{B1C}	-.18 _{B1C} ^{**}
Self-control				
Self-control (Brief Tangney Scale)	.01 _{B2C}	.18 _C [*]	.05 _C	-.13 _C
Impulsiveness (Barratt Impulsiveness Scale)	-.27 _C [*]	-.24 _C [*]	-.12 _C	.17 _C
Social desirability	.09 _F	.05 _F	.12 _F [*]	-.03 _F

Note. Subscripts indicate the sample(s) on which the analyses were run. ERQ = Emotion Regulation Questionnaire; EQ = Decentering Subscale of Experience Questionnaire; ZTPI = Zimbardo Time Perspective Inventory; FTP = Future Time Perspective Scale; BFI = Big Five Inventory.

^a Partial correlations in this table and all subsequent tables represent the correlations between the Temporal Distancing Questionnaire (TDQ) and the outcome variables controlling for the six-item reappraisal scale of the ERQ (ERQ-R). Partial correlations between the ERQ-R and the outcome variables controlling for the TDQ are available as supplemental materials.

* $p < .05$. ** $p < .01$.

Implicit theories about emotion controllability. Beliefs about the controllability of emotions were measured with four items on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*), with a sample item reading: “Everyone can learn to control their emotions,” $\alpha = .90$ (Tamir et al., 2007).

Attributions about the stability of positive and negative events. The Attributional Styles Questionnaire (ASQ) was used to measure beliefs about the stability of the *causes* of negative and positive personal life events (Peterson et al., 1982), $\alpha = .62$ for both positive and negative events.

Emotion regulation self-efficacy. Emotion regulation self-efficacy was assessed with the 36-item Difficulties in Emotion Regulation Scale (DERS; see Gratz & Roemer, 2004 for scale items). The DERS consists of the following six subscales, each of which measure a different aspect of perceived difficulty with emotion regulation: (a) lack of acceptance of one’s own emotions (nonacceptance), (b) difficulty engaging in goal-directed behaviors when upset (goals), (c) inability to control impulses when upset (impulse), (d) lack of awareness of one’s own emotional states (awareness), (e) limited access to effective emotion regulation strategies (strategies), and (f) difficulty understanding and labeling one’s feelings (clarity). Participants were asked to report how frequently they had difficulty regulating their emotions on a 5-point scale (1 = *almost never* (0–10%) to 5 = *almost always* (91–100%). Alphas for the

subscales ranged from .78 to .93, and items were averaged across the subscales to yield one total measure of difficulties with emotion regulation (α for entire scale = .95). We also examined the relationship of the TDQ to the DERS “strategies” subscale separately ($\alpha = .90$), as we expected people who engage in temporal distancing frequently to be less likely to feel that they lack access to effective emotion regulation strategies.

Personality. The Big Five personality dimensions of neuroticism, extraversion, openness, agreeableness, and conscientiousness were assessed with the 44-item Big Five Inventory (John & Srivastava, 1999). Participants responded on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*), and items were averaged within factor. Factor alphas ranged from .77 to .89.

Self-control.

Behavioral and attentional control. The 13-item Tangney Self-Control Scale (Tangney, Baumeister, & Boone, 2004) measured the ability to control impulsive behaviors (e.g., “I am good at resisting temptations”), and to exert attentional control (e.g., “I have trouble concentrating” (reverse coded). Items on this scale were rated on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*), $\alpha = .82$.

Impulsiveness. The 30-item Barratt Impulsiveness Scale was used to measure three facets of impulsiveness: (a) attentional impulsiveness, that is, difficulty controlling the focus of one’s thoughts, (b) motor impulsiveness, which refers to difficulties

controlling impulsive behaviors, and (c) nonplanning impulsiveness, which encompasses difficulty planning for the future and engaging in complex problem-solving (Patton, Stanford, & Barratt, 1995). Items were rated on a 4-point scale (1 = *rarely/never* to 4 = *almost always/always*), and were averaged across facets to yield a single measure of impulse control difficulties, $\alpha = .85$.

Socially desirable responding. Social desirability was measured with a short 13-item version of the Marlowe-Crowne Social Desirability Scale (Reynolds, 1982). Participants rated their agreement with statements such as “No matter who I’m talking to, I’m always a good listener” on a 2-point scale (0 = *false* and 1 = *true*). Items were reverse scored as appropriate and then summed, such that a higher score indicates that the participant responded in a more socially desirable, but less honest manner, $\alpha = .69$.

Results

Event-specific temporal distancing. As displayed in Table 5, the global TDQ converged well with the event-specific index of temporal distancing. Participants with higher TDQ scores were more likely to endorse the use of temporal distancing to cope with a wide variety of negative events. As expected, the convergence of the TDQ with this event-specific index was higher than the convergence of the TDQ with global measures of related constructs, such as reappraisal.

Broader observer-like perspective. Temporal distancing was moderately associated with measures of decentering and non-reactivity (see Table 5). This moderate overlap was expected, given that temporal distancing similarly taps the underlying tendency to view negative events from a broader perspective, and to recognize that thoughts and feelings are fleeting phenomena.

Future time perspective. Temporal distancing was positively associated with each of the three future time perspective measures, although these associations were fairly small in size. Temporal distancing had the highest overlap with the FTP, which may be attributable to the FTP containing items that measure a sense of optimism about the future (e.g., “Many opportunities await me in the future”).

Implicit theories of emotion and attributional style. Temporal distancing overlapped only modestly with the implicit theory measures. Unexpectedly, temporal distancing was unassociated with attributional style.

Emotion regulation self-efficacy. To the extent that temporal distancing helps people to regulate their emotions, it should be positively associated with perceived emotion regulation self-efficacy. Because the DERS measures perceived *difficulties* with emotion-regulation, we expected temporal distancing to be negatively associated with this measure. As displayed in Table 5, the TDQ was significantly negatively associated with the DERS. Temporal distancing had a particularly strong negative association with the “strategies” subscale of the DERS, which measures perceived lack of access to effective emotion-regulation strategies.

Personality and self-control. The associations of temporal distancing with the Big Five were all modest in size, the largest being the predicted relationship between temporal distancing and neuroticism. These low correlations are to be expected, because broad personality traits are unlikely to predict the use of any one emotion-regulation strategy with great precision. Contrary to our expectations, temporal distancing was only weakly associated with

openness,⁶ and unexpectedly, temporal distancing was significantly, albeit weakly, associated with agreeableness. The associations between temporal distancing and the self-control measures were similarly low.

Socially desirable responding. Temporal distancing was not associated with socially desirable responding, suggesting that people with stronger self-presentational concerns are not more likely to report coping with negative experiences by temporally distancing. This finding converges with Gross and John’s (2003) research demonstrating that habitual reappraisal tendencies are uncorrelated with social desirability.

Overlap with the ERQ-R. With few exceptions, the overall significance of the correlations between temporal distancing and the aforementioned constructs remained largely unchanged after controlling for broader reappraisal tendencies, although some of the associations were attenuated (see Table 5).

Study 2 Summary

The TDQ showed good convergence with an event-specific index of temporal distancing, an index that complemented the global TDQ by providing a contextualized approach to assessing temporal distancing. This contextualized approach is a strength, because when answering questions about their global tendencies, people tend to bring to mind confirmatory episodes (i.e., instances in which they utilized a given strategy), or rely on overgeneralized beliefs about how they typically respond, which may lead them to overestimate their use of the strategy under investigation (Conner, Barrett, Tugade, & Tennen, 2007). By requiring participants to reflect on whether they would use temporal distancing in response to a wide range of *specific negative events*, and by providing participants with response options other than temporal distancing, this event-specific index likely mitigated response biases (Paulhus & Vazire, 2007). The convergence of the TDQ and this event-specific index, despite their methodological differences, supports the validity of the TDQ by suggesting that individuals’ global assessments of their temporal distancing tendencies map on to how they report responding to specific negative events.

Our new measure of temporal distancing also converged with but was clearly distinct from existing future time perspective, implicit theory, emotion-regulation, self-control, and personality measures. The relatively weak correlations of the TDQ to the future time perspective measures indicate that this scale does not duplicate any existing time-perspective assessment. Temporal distancing was also only moderately correlated with implicit theory measures and not related to attributional style, suggesting that the tendency to temporally distance from negative events is not simply

⁶ Sample C also contained the NEO PI-R (Costa & McCrae, 1992), which allowed us to explore the association between temporal distancing and various facets of openness. Although temporal distancing was unrelated to openness as a whole, it was significantly associated with NEO facets of openness to ideas (i.e., intellectual curiosity) and to feelings (i.e., willingness to fully experiencing a range of emotions). This finding is consistent with the conceptualization of temporal distancing as a strategy that involves openness to viewing one’s own emotional experiences from broader and more abstract points of view. We did not have strong theoretical reasons to believe temporal distancing should be related to other facets of openness, such as an appreciation of art or culture or having an active imagination, which may account for its lack of association with openness as measured by the BFI-44.

a function of people's broader beliefs about the stability or controllability of negative events or emotions. Moreover, the relatively weak correlations between temporal distancing and both self-control and socially desirable responding demonstrate that the benefits of temporal distancing cannot easily be attributed to higher-order executive abilities or the desire to present oneself in a positive light.

Consistent with expectations, people who frequently temporally distanced from negative events were more likely to report perceiving their thoughts and feelings as temporary events in the mind that did not overwhelm them, and to believe that their emotions were fleeting. High temporal distancers were also less neurotic, had lesser difficulty regulating their emotions, and were more likely to feel that they possessed effective strategies for managing emotional distress than those lower in this tendency. These associations remained significant even after controlling for the considerable overlap of the TDQ with the ERQ-R. Taken together, these findings demonstrate a link between temporal distancing and a constellation of traits and tendencies that should support well-being. Study 3 tests this possibility more directly, by examining the concurrent associations of temporal distancing with a number of indices of psychological health and well-being.

Study 3: Implications for Affect and Broader Well-Being

Study 3 explores the possibility that the regular use of temporal distancing supports well-being, predicting a more adaptive profile of affective experiences and broader psychological health. Specifically, we anticipated that high temporal distancers would report experiencing greater positive and lesser negative affect than those lower in this tendency. This prediction is consistent with experimental work demonstrating that temporal distancing from stressors reduces momentary negative affect and increases positive affect (Bruehlman-Senecal & Ayduk, 2015). Beyond affective experiences, we also expected temporal distancing to predict positive mental health outcomes. In support of this possibility, past research demonstrates that the extent to which people naturally temporally distanced from a *single, specific* but significant stressful experience negatively predicted their recent symptoms of anxiety and depression, and positively predicted their recent life satisfaction (Bruehlman-Senecal & Ayduk, 2015). Although these correlational findings are consistent with the possibility that the *regular* use of temporal distancing supports psychological health, they do not test this possibility directly. Study 3 takes a first step in this direction by assessing the concurrent associations between a global measure of habitual temporal distancing tendencies and various psychological health and well-being indices.

As in Study 2, we sought to rule out that the anticipated relationship of temporal distancing to well-being could be wholly attributed to general reappraisal tendencies. Prior research demonstrates that people high in reappraisal (as measured by the ERQ-R) experience more positive and less negative affect than those lower in this tendency (Gross & John, 2003). The ERQ-R has also been found to negatively predict depression and positively predict life satisfaction (Gross & John, 2003). Given these findings, it was

important to test whether temporal distancing had any unique relation to these outcomes.

Method

Participants. We tested our hypotheses concerning affective experiences in Sample C and those concerning all other outcomes in Samples C and D (see Table 1 for sample characteristics).

Measures.

Affective experiences. Affective experiences were assessed with two measures. First, participants completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988), indicating how much they generally felt each emotion on a 7-point scale (1 = *not at all* to 7 = *extremely*), $\alpha = .85$ and $\alpha = .88$ for positive⁷ and negative affect, respectively. Second, we adapted a measure of positive and negative affect used by Impett et al. (2010), in which multiple terms tapping into similar emotions are clustered in composite items. The eight positive affect composites included: amused/having fun; joyful/happy/pleased; loving/affectionate/caring; proud of self and accomplishments; self-confident/capable/worthwhile; interested/intellectually stimulated; cared about/loved/connected to others; and hopeful/optimistic, $\alpha = .90$. The eight negative affect composites included anxious/nervous; embarrassed/guilty/ashamed; sad/depressed/down; angry/irritated/pissed off; afraid/scared/fearful; lonely/isolated; distrustful/distant/cold toward others; put down/hurt/rejected by others, $\alpha = .88$. Participants were asked to indicate how they *typically* felt on a 5-point scale (1 = *not at all* to 5 = *a lot*).

Well-being and ill-being. We divided our measures of psychological health into two broad categories, those that measured positive (e.g., life satisfaction) and negative (e.g., depression) outcomes. Consistent with prior research (e.g., Ryff et al., 2006), we refer to the former as measures of "well-being" and the latter as measures of "ill-being."

Well-being measures. *Optimism*, defined as the tendency to hold positive expectations about the future, was measured with the six-item Life Orientation Test—Revised (e.g., "In uncertain times, I usually expect the best"; Scheier, Carver, & Bridges, 1994) on a 5-point scale (1 = *strong disagree* to 5 = *strongly agree*), $\alpha = .83$.

Satisfaction with life was measured with the five-item Satisfaction with Life Scale (e.g., "In most ways my life is close to my ideal"; Diener, Emmons, Larsen, & Griffin, 1985), on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*), $\alpha = .88$.

Positive well-being was measured with the Ryff Scales of Psychological Well-Being (Ryff & Keyes, 1995), a 84-item, six-dimension measure of well-being, which separately assesses environmental mastery, autonomy, personal growth, purpose in life, self-acceptance, and positive relations with others (Cronbach's alphas ranged from .80 to .92). Participants made their ratings on a 5-point (1 = *disagree strongly* to 5 = *agree strongly*) scale. For a detailed description of each dimension, see Ryff and Keyes (1995).

Ill-being measures. *Depressive symptoms* were measured with the 20-item Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), which measures the experience of depressive symptoms over the prior week on a 4-point scale (1 = *rarely or*

⁷ The item "active" was inadvertently omitted from the positive affect scale of the PANAS.

none of the time to 4 = most or all of the time), $\alpha = .91$. One sample item reads: "I felt everything I did was an effort."

The tendency to experience frequent and uncontrollable worry (e.g., "I worry all the time"), was measured with the three-item Short Penn State Worry Questionnaire (Berle et al., 2011) on a 5-point scale (1 = strongly disagree to 5 = strongly agree), $\alpha = .82$.

Loneliness, defined as the feeling of being cut off or isolated from others, was measured by the UCLA Loneliness Scale (e.g., "I lack companionship"). Participants completed a short eight-item version of this scale (Hays & DiMatteo, 1987), making their ratings on 5-point scale (1 = disagree strongly to 5 = agree strongly), $\alpha = .85$.

Results

Affective experiences. As predicted, temporal distancing was linked to the experience of greater positive and lesser negative affect (see Table 6), an effect that held across both measures.

Well-being and ill-being. As shown in Table 6, high temporal distancers reported greater optimism and life satisfaction, and scored higher on all six of Ryff and Keyes' (1995) dimensions of positive well-being than those lower in this tendency. Of the six well-being dimensions, temporal distancing was most strongly associated with autonomy, mastery, and positive relations. Participants higher in temporal distancing also reported lower levels of depressive symptoms, worry, and loneliness.

Overlap with the ERQ-R. With the exception of the PANAS positive scale, all of the associations between temporal distancing and affective experiences remained significant when controlling for the ERQ-R. Likewise, 10 of the 11 associations between temporal distancing and the measures of well-being and ill-being remained significant when controlling for the ERQ-R, with the exception of the "growth" subscale of the Ryff well-being measure

(see Table 6). This pattern indicates that the relationship of temporal distancing to affect and broader well-being cannot be attributed solely to general reappraisal tendencies.

Study 3 Summary

Taken together, the results of Study 3 indicate that people who regularly adopt a temporally distant perspective when faced with negative events tend to experience greater positive and lesser negative affect. Moreover, regular use of temporal distancing predicts positive psychological health outcomes, including greater optimism and satisfaction with life, and lesser vulnerability to worry and depressive symptoms. The more nuanced well-being data provided by the Ryff scales indicate that high temporal distancers are particularly likely to feel a sense of self-determination and environmental mastery—perhaps because they have greater control over their reactions to negative life events. However, this greater sense of control does not appear to come at the expense of maintaining positive relationships with others, as people higher in temporal distancing reported better relations with others and less loneliness. These findings, while cross-sectional, are consistent with the possibility that temporal distancing plays an active role in sustaining well-being.

Study 4

Although the Study 3 findings suggest that temporal distancing is linked to greater psychological well-being, this study is limited by its cross sectional design. Moreover, because most measures in Study 3 were global in nature—with participants indicating what they *typically* do and feel—the associations between temporal distancing and well-being may have been somewhat inflated, as well as subject to memory biases. Study 4 addresses these shortcomings by utilizing

Table 6
Study 3: Correlations of Temporal Distancing and ERQ to Concurrent Affect and Well-Being

	Temporal distancing	Temporal distancing (partial)	Reappraisal	Suppression
Negative affect				
PANAS	-.45** _C	-.38** _C	-.29** _C	.26** _C
Impett et al.	-.37** _C	-.26** _C	-.34** _C	.20** _C
Positive affect				
PANAS	.18* _C	.14 _C	.13 _C	-.16 _C
Impett et al.	.31** _C	.22* _C	.26** _C	-.22 _C
Well-being				
Satisfaction with Life	.28** _{CD}	.21** _{CD}	.23** _{CD}	-.26** _{CD}
Optimism (LOT-R)	.36** _{B1C}	.26** _{B1C}	.32** _{B1C}	-.21** _{B1C}
Autonomy (Ryff)	.31** _C	.24** _C	.24** _C	-.16 _C
Growth (Ryff)	.31** _C	.18* _C	.37** _C	-.16 _C
Mastery (Ryff)	.37** _C	.27** _C	.31** _C	-.18 _C
Positive relations (Ryff)	.33** _C	.27** _C	.22* _C	-.37** _C
Purpose (Ryff)	.24** _C	.19 _C	.17 _C	-.29** _C
Self-acceptance (Ryff)	.31** _C	.20* _C	.30** _C	-.17 _C
Ill-being				
Worry (PSWQ)	-.30** _D	-.24** _D	-.21** _D	.09 _D
Depressive symptoms (CES-D)	-.20** _{CD}	-.18** _{CD}	-.08 _{CD}	.25** _{CD}
Loneliness	-.38** _C	-.32** _C	-.22* _C	.32** _C

Note. Subscripts indicate the sample(s) on which the analyses were run. ERQ = Emotion Regulation Questionnaire; PANAS = Positive and Negative Affect Schedule; LOT-R = Life Orientation Test—Revised; PSWQ = Penn State Worry Questionnaire; CES-D = Center for Epidemiological Studies Depression Scale.

* $p < .05$. ** $p < .01$.

daily diary, experience sampling, and other longitudinal data to test whether general temporal distancing tendencies predict affective experiences at the daily level, and well-being across time. Diary and experience sampling methods have the advantage of reducing memory bias by having participants report on events and experiences as they unfold, and also allow for a more naturalistic, bottom-up assessment of everyday experiences (Conner et al., 2007; Iida, Shrout, Laurenceau, & Bolger, 2012). Separating the measurement of temporal distancing, affect, and well-being in time also reduces shared error variance, for example, eliminating the possibility that participants' temporary mood state on a given day may be inflating the correlation between self-reported temporal distancing tendencies and self-reported affect or well-being.

Based on our prior findings, we predicted that high temporal distancers would display a more adaptive profile of affective responding at the daily level—experiencing greater daily positive affect and lesser daily negative affect. In turn, we expected this profile of affective responding to mediate the connection between earlier temporal distancing and later well-being. This expectation is consistent with prior research demonstrating that daily affective experiences, and affective reactivity to daily events, have a lasting impact on psychological health (e.g., Charles, Piazza, Mogle, Sliwinski, & Almeida, 2013; O'Neill, Cohen, Tolpin, & Gunthert, 2004; Ong, Bergeman, Bisconti, & Wallace, 2006).

We tested the hypothesis that temporal distancing predicts an adaptive profile of daily affect in two ways. First, we examined whether high temporal distancers experienced greater overall daily positive affect and lesser overall daily negative affect across time. We then explored whether the association between temporal distancing and daily affect was particularly pronounced on days in which negative events occurred more frequently or positive events occurred less frequently. We reasoned that temporal distancing might emotionally buffer people against the downs of everyday life, both in the form of experiencing frequent negative or infrequent positive events, by enabling them to put these daily experiences into a broader context. Subsequently, we examined whether temporal distancing is related to downstream psychological well-being, and if so, whether the connection between temporal distancing and downstream well-being is mediated by daily affective experiences.

Method

Participants. Participants were drawn from Sample E (described in Table 1). Because of attrition over time, the total sample sizes at each of the time points were as follows: Time 2: 108, Time 3: 80, and Time 4: 64. All of the data available at each respective time point was utilized in the reported analyses. Participants who remained versus dropped out of the study at each time point did not significantly differ in their Time 1 temporal distancing, reappraisal, or suppression scores, nor did they differ in age (all F s < 1.39 ps > .23). However, proportionally more men than women dropped out of the study between Time 2 and Time 3, as well as between Time 3 and Time 4 (both χ^2 s > 3.9, ps < .05).

Procedure. Participants completed Study 4 as part of a brief emotion-regulation training study. This study included 6 phases: collection of baseline measures, an in-lab training session, an ESM/diary study, a lab-based provocation, a 3-month follow-up, and a 6-month follow-up. During the training session, participants were randomly assigned to one of three brief training conditions:

a self-distancing training ($n = 37$; [Kross et al., 2005, 2014]), relaxation training ($n = 37$), or no training control ($n = 37$); for more details, please contact the corresponding authors. There were no condition differences in any of the independent variables (all ps > .07) or the dependent variables (all ps > .55) reported in this study. Condition also did not significantly moderate any of the links between temporal distancing and any of the dependent variables, all ps > .40. Thus, we collapsed across condition in the reported analyses.

Data used for the current analyses came from four time points. At Time 1 (i.e., baseline), participants completed the TDQ and the ERQ in an online survey with other measures not relevant to the current investigation. One to eight days later ($M = 4.12$ days, $SD = 1.83$), participants started a 10-day, combined experience sampling method (ESM) and daily diary phase of the study (Time 2). As part of the ESM component, participants received five texts per day via their mobile phones, spaced at equal intervals between the hours of 8 a.m. and 10 p.m. These texts contained links to a brief survey in which participants indicated whether they had experienced a positive or upsetting event since receiving the prior text. As part of the daily diary component, participants completed an assessment of their positive and negative emotions once a day in the evening via an online survey. Response rates to both the ESM and daily diary measures were high. On average, participants responded to 82% of the daily diary measures ($SD = 19\%$), with only seven participants (6.5% of the Time 2 sample) responding to fewer than half of the diary measures. Participants also responded to an average of 89% of the ESM measures ($SD = 13\%$), with only 1 participant (less than 1% of the Time 2 sample) responding to fewer than half of the ESM measures.

Approximately three months (Time 3) and six months (Time 4) after the ESM/daily diary component of the study, participants completed an online survey containing the well-being measures, along with other measures not relevant to this study.

Measures.

Time 1. Temporal distancing, reappraisal, and suppression were measured at Time 1 in a fashion identical to the prior studies.

Time 2.

Daily negative and positive events (ESM). The number of negative and positive events participants experienced on each day of the 10-day diary period was estimated by summing participants' ESM responses to the following two questions at the daily level: "Did anything happen that upset you since the last text" and "Did anything happen that made you feel good since the last text" (0 = no, 1 = yes). Summing in this manner yielded a separate count of the number of negative and positive events participants experienced on each day of the 10-day diary period, mean count for negative events = 0.69, $SD = 0.49$, mean count for positive events = 1.71, $SD = 1.00$.⁸

Daily positive and negative emotions (daily diary). Daily positive and negative emotions were assessed via an online survey that participants completed each evening for 10 consecutive days, between the hours of 5 p.m. and 2 a.m. Participants were asked to rate the extent to which they felt a variety of negative and positive

⁸ The descriptive statistics for this, and all other multilevel variables, were derived by first averaging within subjects across the 10 diary days, and then averaging across subjects.

emotions on that respective day on a 5-point scale (1 = *not at all* to 5 = *a lot*). The negative emotions measure was composed of the following items: angry, annoyed, anxious, discouraged, neglected, on edge, rejected, sad, and self-critical, $\alpha = .93$. The positive emotion measure included the items: cheerful, lively, loved, self-loving, $\alpha = .88$.

Well-being indicators at T3 and T4. Two indicators of negative well-being (worry and depressive symptoms) and one indicator of positive well-being (life satisfaction) were included among the Time 3 and Time 4 assessments. The Penn State Worry Questionnaire (Meyer, Miller, Metzger, & Borkovec, 1990), the Beck Depression Inventory (Beck, Steer, Ball, & Ranieri, 1996), and the Satisfaction with Life Scale were respectively used to measure these constructs, all $\alpha s > .87$. After reverse scoring the PSWQ and the BDI and z-scoring all three variables, the variables were averaged within each respective time point to yield composite indicators of well-being at Time 3 and Time 4, with a higher score indicating greater well-being.

Results

Does temporal distancing predict daily affect? The repeated measures design at Time 2 resulted in a two-level hierarchical structure with the 10 daily diary days nested within participants. To model dependencies in participants' responses across time, we utilized a two-level hierarchical linear model. The time-varying, or level 1 predictors were the number of daily negative and daily positive events experienced by participants. The participant specific, or level 2, predictor was participants' Time 1 temporal distancing score. Intercepts were allowed to vary across participants, as were the slopes of the level 1 predictors. All continuous predictors were z-scored, and thus centered with respect to the overall sample mean, before being added to their respective models.

Consistent with our Study 3 findings, we expected participants higher in Time 1 temporal distancing to experience lower average daily negative affect and higher average daily positive affect at Time 2. We further explored whether the relationship between temporal distancing and daily affect was particularly pronounced on days in which negative events occurred more frequently or positive events occurred less frequently.

As expected, high temporal distancers reported less overall negative affect across the 10-day diary period than those lower in this tendency ($B = -.16$, $z^9 = -3.67$, $p < .001$). However, this main effect was moderated by a significant temporal distancing \times daily negative events interaction ($B = -.05$, $z = -2.38$, $p < .05$). As depicted in Figure 1a, the relationship between temporal distancing tendencies and reduced negative affect was more pronounced on days in which participants experienced more frequent negative events. High temporal distancers also reported greater overall positive affect across the diary study ($B = .14$, $z = 2.41$, $p < .05$). This main effect was also moderated by a temporal distancing \times daily positive events interaction ($B = -.08$, $z = -2.43$, $p < .05$). As depicted in Figure 1b, high temporal distancers were buffered against low levels of positive affect on days in which fewer positive events occurred.

Importantly, Time 1 temporal distancing did not significantly predict the number of positive ($B = .09$) or negative ($B = -.01$) events participants experienced at the daily level (both $ps > .06$).

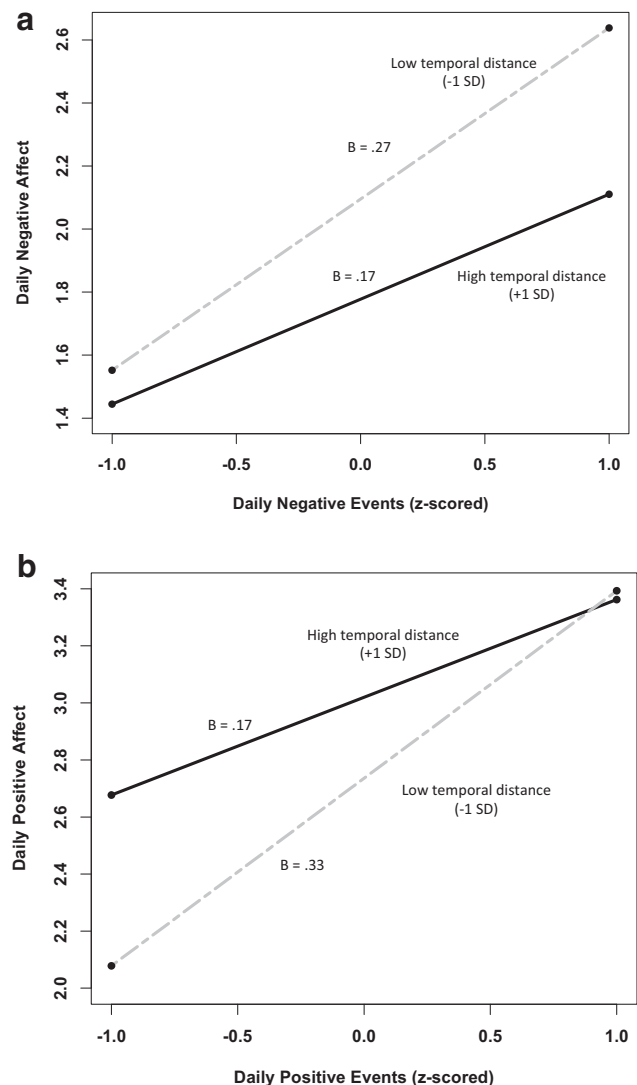


Figure 1. Study 4: Interaction between temporal distancing and daily negative and positive events to predict daily negative and positive affect, respectively.

This finding indicates that the observed relationships between temporal distancing and daily affect are not likely attributable to high temporal distancers actually experiencing, or perceiving that they experience, more frequent positive events or fewer negative events. Taken as a whole, these results demonstrate that temporal distancing is associated with a more favorable profile of affective

⁹ The statistical software program Stata, which was used for all analyses, provides a z statistic for multilevel models in place of a t statistic. The reason the z statistic is favored is because the t distribution is a finite-sample distribution with a shape that varies depending on the degrees of freedom. For multilevel variance-component models, the finite-sample distribution doesn't have a simple form, so Stata uses a large-sample z distribution rather than approximating the finite-sample t distribution (Rabe-Hesketh & Skrondal, 2012).

experiences at the daily level, and not just in retrospective, global reports.

Does daily affect mediate the link between temporal distancing and downstream well-being? Finally, we examined whether our data was consistent with the possibility that temporal distancing supports well-being through its more proximal effects on daily negative and positive affect. To do so, we first examined whether Time 1 temporal distancing was related to well-being assessed three (Time 3) and six (Time 4) months after the diary had ended. Temporal distancing significantly predicted well-being at Time 3, but did not at Time 4, although the relationship was trending in the expected direction (see Table 7). While temporal distancing was not significantly related to Time 4 well-being, current approaches to mediation do not rely on statistical significance criteria for each individual path in a mediational model to test for mediation (Hayes, 2013). Thus, we proceeded to test whether the connection between Time 1 temporal distancing tendencies and Time 3 and 4 well-being was mediated by overall (i.e., average) daily positive or negative affect. We conducted these mediational analyses using bootstrapping methods to construct 95% confidence intervals based on 5,000 random samples (Preacher & Hayes, 2008), utilizing the SPSS macro "Process" (Hayes, 2013).

To examine whether mean daily positive or negative affect mediated the temporal distancing to well-being link, we first calculated the average level of negative and positive affect experienced by each participant across the 10 diary days. This yielded one Time 2 positive and one Time 2 negative affect score for each participant that respectively summarized how negative and positive that participant felt across the entire diary period. These participant-level averages were then entered simultaneously as two potential mediators of the link between Time 1 temporal distancing and Time 3 and 4 well-being.

The link between temporal distance and Time 3 well-being was mediated by daily positive affect (mediated effect = .05, $SE = .03$, 95% CI = .005 to .12) but not negative affect (mediated effect = .04, $SE = .03$, 95% CI = -.01 to .11; see Figure 2). At Time 4, both daily negative and daily positive affect independently mediated the link between temporal distancing and Time 4 well-being

(mediated effect for negative affect = .06, $SE = .03$, 95% CI = .01 to .13 and for positive affect = .06, $SE = .03$, 95% CI = .01 to .15).

Overlap with the ERQ-R. With the exception of the association between Time 1 temporal distancing and daily positive affect, all of the main and interactive associations between temporal distancing and daily affect remained significant when controlling for Time 1 reappraisal (see Table 7). However, temporal distancing was not uniquely related to Time 3 or Time 4 well-being when controlling for the ERQ-R. These findings suggest that temporal distancing and the general tendency to reappraise share overlapping associations with downstream well-being.

Study 4 Summary

Study 4 provides additional evidence that temporal distancing plays an important role in supporting well-being, both at the daily level and across time. Paralleling our Study 3 findings, temporal distancing predicted greater positive and lesser negative affect at the daily level—a pattern that was particularly pronounced on days in which few positive or frequent negative events occurred. This finding suggests that high temporal distancers are somewhat emotionally buffered against the downs of daily life. Mediational analyses further suggested that temporal distancing tendencies might support well-being by enhancing the experience of daily positive emotion, and by decreasing the experience of daily negative emotion.

There are some limitations to Study 4. Because of its correlational design, this study was not well-suited to address whether temporal distancing has a *causal* impact on downstream well-being. Although prior experimental research has already established that temporal distancing has a causal impact on short-term well-being (Bruehlman-Senecal & Ayduk, 2015; Yanagisawa et al., 2011), future intervention research is necessary to examine the causal impact of temporal distancing on well-being over longer time periods. Additionally, because of attrition over time, the sample size, and thus power and generalizability of the Study 4 findings, are limited relative to that of the other studies. Some of the results approaching significance—for example, the rela-

Table 7

Study 4: Correlations of Temporal Distancing and Emotion Regulation Questionnaire (ERQ) to Daily Affect and Prospective Well-Being

	Emotion regulation				Mediators at time 2		Well-being outcomes	
	Temporal distancing	Temporal distancing (partial)	Reappraisal	Suppression	Mean daily positive affect	Mean daily negative affect	3-month follow-up	6-month follow-up
Emotion regulation								
Reappraisal	.45**	—	—	—	—	—	—	—
Suppression	-.06	-.06	-.02	—	—	—	—	—
Mediators at time 2								
Mean daily positive affect	.25**	.19	.20*	-.26**	—	—	—	—
Mean daily negative affect	-.30**	-.24*	-.20*	.03	-.33**	—	—	—
Well-being outcomes								
3-month follow up	.31**	.09	.42**	-.09	.35**	-.31**	—	—
6-month follow up	.17	.00	.35**	.08	.42**	-.43**	.64**	—

Note. Data are from Sample E. Measurement of mediators began 1 to 8 days ($M = 4.11$ days, $SD = 1.83$) after measurement of temporal distancing and the ERQ. Well-being outcomes were measured approximately 3 and 6 months after mediators.

* $p < .05$. ** $p < .01$.

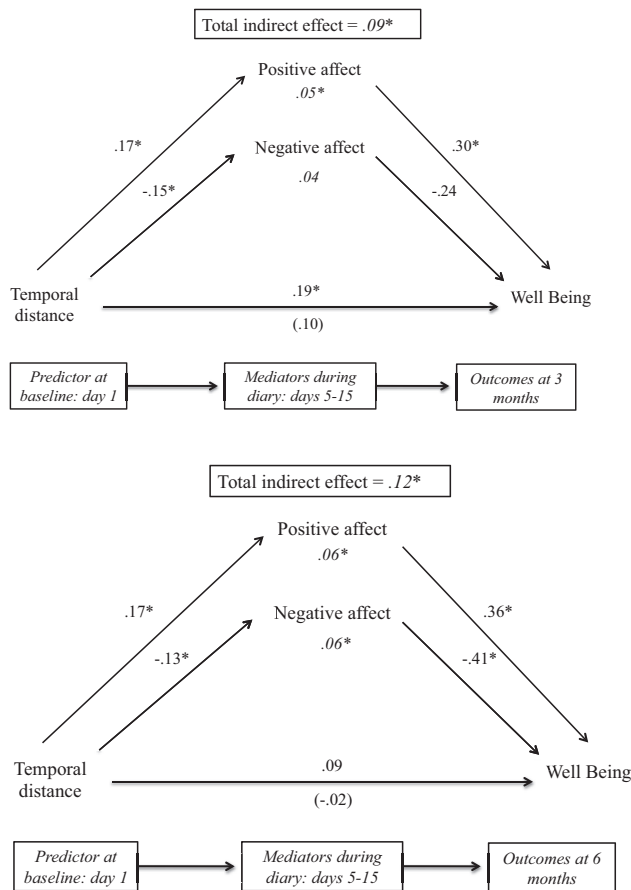


Figure 2. Study 4: Mediation of the link between temporal distancing and well-being at 3-month and 6-month follow-up through positive and negative affect. Indirect effects (based on 5,000 bootstrapped samples) set in italics.

tionship between temporal distancing and the reporting of positive daily experiences—may have reached significance if the sample size was larger. Moreover, unlike Study 3, temporal distancing did not uniquely predict variance in well-being after controlling for general reappraisal tendencies. These limitations notwithstanding, Study 4 provides evidence that temporal distancing may support well-being by promoting a more adaptive profile of affective responding at the daily level. In Studies 5a, 5b, and 5c, we investigate another potential pathway through which habitual temporal distancing may support well-being—by reducing reactivity to and promoting more adaptive coping with daily stressors.

Studies 5a–5c: Implications for Stress Appraisals and Responses

Stress reactivity is known to have a powerful impact on mental health. Prior research demonstrates that people who perceive their lives to be highly stressful tend to have lower levels of subjective well-being (Burns & Machin, 2013; Ng, Diener, Aurora, & Harter, 2009). Heightened affective reactivity to minor and major stressors has also been found to predict greater anxiety, negative affect, and

depression up to a decade into the future (Charles et al., 2013; O'Neill, Cohen, Tolpin, & Gunthert, 2004; Parrish, Cohen, & Laurenceau, 2011). An additional pathway through which temporal distancing may support well-being is by reducing stress reactivity. In support of this possibility, the results of Study 4 demonstrate that habitual temporal distancing plays a particularly important role in buffering individuals against heightened negative affect on days in which stressful or otherwise negative events occur with greater frequency. Moreover, experimentally induced temporal distancing has been found to play a causal role in decreasing emotional reactivity to a wide range of stressors (Bruehlman-Sencal & Ayduk, 2015; Yanagisawa et al., 2011).

In Studies 5a–5c we explored this possibility in greater depth, examining whether temporal distancing moderates participants' reactions to a variety of lab-based and real-world stressors. Study 5a tested whether temporal distancing tendencies predict emotional reactivity to a standardized, laboratory stressor under controlled conditions. Studies 5b and 5c expanded on 5a by testing whether its findings generalize to real-world stressors, both those that have yet to occur (5b), and those that have already arisen (Study 5c). The latter two studies also explored whether high temporal distancers appraise stressful events as less threatening, and cope with them in a more adaptive manner. Study 5c additionally examined whether global temporal distancing tendencies, as measured by the TDQ, predict situation-specific temporal distancing from real-world stressors. As in prior studies, we examined whether temporal distancing predicts unique variance in stressor-related outcomes when controlling for the broader tendency to reappraise.

Study 5a

Study 5a tested whether high temporal distancers respond with less intense emotional reactivity to a standardized, laboratory-induced stressor—specifically, a provocation by an insulting experimenter. Because this provocation was designed to induce anger, we expected that high temporal distancers would experience less anger following this provocation than low temporal distancers. We also explored whether temporal distancing tendencies predicted the experience of other types of negative affect, such as anxiety and sadness.

Method

Participants. Participants were drawn from Sample E as described in Table 1. Because of attrition over time, the total sample size in Study 5a was 97 (60 women, mean age = 23.93 years, $SD = 7.61$).

Procedure. Study 5a was based on the same data reported in Study 4, in which participants completed a brief emotion-regulation training study that included 6 phases: baseline measures, an in-lab training session, an ESM/daily diary study, a lab-based provocation, a 3-month follow-up, and a 6-month follow-up. The current study focuses on the baseline and lab-based provocation phases of the data. Participants' habitual temporal distancing and reappraisal tendencies were assessed at baseline, approximately 4 weeks before the laboratory provocation. As reported in Study 4, condition had no effect on any of the dependent variables reported in this study (all $ps > .41$), nor did it relate

to the independent variables (all $ps > .07$). Condition also did not significantly moderate any of the links between temporal distancing and any of the dependent variables, all $ps > .09$. Thus, we collapsed across condition in all subsequent analyses.

Stress was induced in the laboratory using a well-established provocation paradigm (e.g., Bushman, Bonacci, Pedersen, Vasquez, & Miller, 2005; Mischkowski, Kross, & Bushman, 2012). Participants were asked to solve a series of difficult anagrams under time pressure and while listening to an intense piece of classical music. Within 7 seconds of an anagram first appearing, participants were asked to communicate the solution to the anagram, as well as a sentence that contained the anagram, to the experimenter via intercom. For example, if the participant received the anagram “ebd,” they would have to say the word “bed” and a sentence such as “I sleep in a bed.” If they could not solve the anagram in the allotted time they were instructed to say: “I don’t know.” To provoke participants, the experimenter interrupted them three times by intercom, criticizing them for not speaking loudly enough. These criticisms escalated in their intensity and rudeness. The first interruption, in the first third of the task was: “Look, I can barely hear you. I need you to speak louder please.” The final interruption, in the last third of the task was: “Look, this is the third time I have to say this! Can’t you follow directions? Speak louder!” At the end of the anagram task the experimenter reentered the room and told the participant, in a hostile tone, “It looks like you really messed this task up. I don’t think I can use your results for the study . . . anyway, let’s just continue with the next part.” Shortly thereafter, and following some questionnaires that were not relevant to the current study, participants completed the Profile of Mood State, a measure of their current negative and positive affect. Experimenters were blind to participants’ temporal distancing scores, and the three provocations delivered over intercom were prerecorded and identical for all participants.

Measures.

Temporal distancing and reappraisal. Temporal distancing and reappraisal were measured in a manner identical to prior studies.

Affective reaction to the provocation. A short version of the Profile of Mood States (POMS) was used to measure positive and negative affect (Cranford et al., 2006). This measure, like the original POMS, assesses anger (angry, resentful, annoyed), anxiety (anxious, on edge, uneasy), sadness (sad, hopeless, discouraged), and vigor (vigorous, cheerful, lively) via the three-item subscales above. Fatigue, which is included in the original POMS, was not assessed here. Participants were asked to indicate how they were feeling at the time they completed this measure on a 5-point scale (1 = *not at all* to 5 = *extremely*). Items were averaged within subscale, with subscale alphas ranging from .77 to .86.

Results

As expected, high temporal distancers responded to the provocation with significantly less intense anger than those lower in this tendency (see Table 8). They also reported significantly less anxiety, but not less sadness or greater vigor. These latter two null results are unsurprising given that the provocation was specifically designed to evoke high intensity negative emotion (i.e., anger),

rather than low intensity negative emotion (e.g., sadness) or positive emotion (e.g., cheerfulness).

Studies 5b and 5c

In Study 5a, all participants were exposed to an objectively identical stressor. Yet high distancers responded to this stressor with less negative affect—a finding consistent with the possibility that temporal distancing helps to reduce stress reactivity. Studies 5b and 5c explore this possibility in greater depth, examining how temporal distancing relates to other aspects of the stress response, such as appraisals and coping, in addition to negative affect. They also examine whether temporal distancing predicts reactivity to real world stressors, both those that are relatively uniform (Study 5b), and those that are varied in nature and severity (Study 5c).

Appraisals

It is well documented that the ways in which people appraise, that is perceive and evaluate stressors, affect how they respond emotionally, physiologically, and behaviorally. Two major components of the cognitive appraisal process are *primary appraisals*, which refer to the appraised demands imposed by a stressor, and *secondary appraisals*, which refer to the appraised level of resources or abilities one has to cope with these demands (Lazarus & Folkman, 1984; Tomaka, Blascovich, Kelsey, & Leitten, 1993). When people appraise the demands of a situation as exceeding their resources, they experience a state of psychological threat. This threat state gives rise to a cascade of negative emotional, physiological, and performance-based outcomes, including greater perceived stress, increased blood pressure, and poorer performance on cognitive tasks (for a review see Blascovich & Mendes, 2000).

We anticipated that high temporal distancers would perceive that they have greater resources for coping with stressors. This expectation is broadly consistent with prior work in which experimentally induced temporal distancing reduced emotional reactivity to varied stressors. This experimental finding suggests that people who regularly distance from stressors may feel more capable of staying calm under pressure. It is also broadly consistent with our Study 2 finding that habitual temporal distancing positively predicts emotion-regulation self-efficacy. We were less certain whether temporal distancing would predict perceptions of demands imposed by stressors. It is possible that people who regularly distance from stressors may tend to view them as less onerous. However, it is also possible that high temporal distancers do not discount the demands imposed by stressful events, but are simply more confident that they have the emotional resources to cope with them.

Negative Affect

Prior research demonstrates that threat appraisals give rise to a wide range of negative emotions (Skinner & Brewer, 2002). In turn, high levels of negative emotion, such as anxiety, have been shown to impede optimal functioning during times of stress, fueling repetitive and intrusive negative thinking about the stressor and one’s coping capabilities (e.g., Kent & Jambunathan, 1989; Sarason, Sarason, & Pierce, 1990), and impairing performance on academic and competitive tasks (e.g., Couch, Garber, & Turner,

Table 8

Study 5a–5c: Correlations of Temporal Distancing and ERQ to Stress Response Variables

	Temporal distancing	Temporal distancing (partial)	Reappraisal	Suppression	Stressor-specific temporal distancing
Study 5a: Emotional reactions to laboratory provocation					
Anger	-.20*	-.21*	-.04	.07	—
Anxiety	-.26*	-.27**	-.04	.18	—
Sadness	-.14	-.08	-.15	.14	—
Vigor	.07	.05	.05	-.04	—
Study 5b: Reactions to an upcoming final examination					
Event appraisals					
Perceived demands	-.07	-.14	.15	.19	—
Perceived resources	.20*	.22*	.03	-.17	—
Emotion					
Anxiety	-.24*	-.21*	-.14	.05	—
Coping responses					
Behavioral disengagement	-.18	-.12	-.17	.28**	—
Self-distraction	.11	.10	.05	.22*	—
Rumination	-.28**	-.26*	-.12	.13	—
Positive reframing	.25*	.12	.32**	.03	—
Active coping	.16	-.04	.40**	-.13	—
Study 5c: Reactions to real-world stressor experienced over past 3 months					
Event appraisals					
Perceived demands	-.11	-.06	-.12	.03	-.29**
Perceived resources	.26**	.20**	.19**	-.09	.35**
Emotion					
Negative affect	-.17**	-.14*	-.10	.01	-.39**
Coping responses					
Behavioral disengagement	-.11	-.07	-.11	.19**	-.22**
Self-distraction	-.05	-.08	.07	-.01	.03
Rumination	-.23**	-.19**	-.15*	.13*	-.22**
Positive reframing	.28**	.18**	.30**	-.15*	.41**
Active coping	.18**	.14*	.12	-.16**	.19**

Note. Data from Study 5a, 5b, and 5c were drawn from Sample E, C, and D, respectively. ERQ = Emotion Regulation Questionnaire.

* $p < .05$. ** $p < .01$.

1983; Swain & Jones, 1996). We predicted that high temporal distancers would experience less stressor-related negative emotion than those lower in this tendency. This prediction is consistent with our prior experimental findings, the findings of Study 5a, as well as the expectation that high distancers will appraise their coping resources more favorably, and thus be less prone to experiencing states of threat.

Coping

Another major component of the stress response is how people cope with stressful events. Coping is broadly defined as cognitive and behavioral strategies aimed at managing the internal and external demands of stressful events (Lazarus & Folkman, 1984; Carver, Scheier, & Weintraub, 1989). In the present research, we examined the relationship between temporal distancing and four theoretically relevant dimensions of coping—positive reframing, disengagement, distraction, and active coping—as well as another theoretically relevant cognitive response to stress, rumination.

We expected temporal distancing to positively predict positive reframing, defined as the act of trying to find the “silver lining” in a negative situation (Carver et al., 1989). Temporal

distancing and positive reframing are both forms of cognitive reappraisal, and thus it was reasonable to expect the use of these two strategies to be correlated. We also expected temporal distancing to negatively predict rumination, given that focusing on the impermanence of one’s reactions to negative events is antithetical to dwelling on them. In contrast, we predicted that temporal distancing would be unrelated to avoidant coping strategies that involve trying not to think about or actively address stressors, such as behavioral disengagement and distraction. Although there has been debate about whether psychological distancing functions as a form of avoidance (e.g., Ayduk & Kross, 2009; McIsaac & Eich, 2004), our prior research has found no consistent associations between temporal distancing and emotional avoidance or suppression (Bruehlman-Senecal & Ayduk, 2015). Finally, we examined whether temporal distancing predicted active problem-focused coping. Although it is possible that temporal distancing supports active coping by reducing people’s anxiety and distress to a more manageable level, conversely it may undercut the motivation to engage in active coping by giving rise to the perceptions that personal problems will simply fade with time. Thus, active coping was included for exploratory purposes.

Study 5b

Study 5b examines whether temporal distancing tendencies predict responses to a real-world, yet still relatively uniform stressor: a final class examination. Similar to Study 5a, this design helps to rule out the possibility that high temporal distancers appear less reactive to stressors solely because they tend to experience objectively less severe stressors. Study 5b also adds to Study 5a by exploring whether temporal distancing predicts responses to upcoming stressors, in addition to ongoing ones.

Method

Participants. Participants were drawn from Sample C (see Table 1) and were enrolled in a Personality Psychology class at a large West Coast university.

Procedure. Participants were asked to reflect on an identical upcoming stressor—their final exam in their Personality Psychology class. They completed the exam-related measures, described below, 1 to 5 days before this exam. Participants completed the temporal distancing measure and the ERQ in a separate survey, administered 0 to 4 days after the exam-related measures. All Study 5b measures were completed before the final examination.

Measures.

Stressor appraisals. Both appraisal items below were measured on the same 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*).

Primary appraisals. Primary appraisals are commonly measured with a single item that assesses the extent to which a stressor is perceived to be demanding (e.g., Mendes, Blascovich, Major, & Seery, 2001). Following this model, participants indicated their agreement with the statement: “I expect the exam to be very demanding.”

Secondary appraisals. Similar to previous research (Mendes et al., 2001; Tomaka et al., 1993), we also assessed participants’ perception that they had adequate resources to cope with their stressor with a one-item measure. Participants responded to the statement: “I’m confident I have the skills and resources (e.g. time, energy) necessary to rise to this challenge.”

Anxiety. Participants rated their level of anxiety about the upcoming exam with two items. The first asked how “anxious/nervous about the exam” the participant had been feeling over the past week on a 5-point scale (1 = *not at all* to 5 = *extremely*). The second asked them to rate their agreement with the statement “I feel anxious about the exam” on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). Items were z-scored to place them on the same scale, and then averaged, $\alpha = .84$. We focused on anxiety in Study 5b because threat-related emotions, such as anxiety, tend to be particularly pronounced during the anticipatory phase of stressful events (Folkman & Lazarus, 1985).

Coping responses.

Coping strategies. Participants’ use of positive reframing ($\alpha = .73$), behavioral disengagement ($\alpha = .75$), distraction ($\alpha = .51$), and active coping strategies ($\alpha = .69$) were measured with items adapted from Carver’s (1997) brief two-item COPE scales. Instructions were modified such that participants indicated how they had been coping with their upcoming exam on a 4-point scale (1 = *I haven’t been doing this at all* to 4 = *I’ve been doing this a lot*). Please see the Brief COPE at <http://www.psy.miami.edu/faculty/ccarver/sciBrCOPE.html> for the items.

Rumination. Participants responded to the following three face valid items, created for the purpose of this study: “I keep ruminating over and over again about the exam and the assignments I have to do”; “I can’t help myself from ruminating about everything that could go wrong”; and “I’ve been dwelling on all the work I have to get done.” Participants responded to these items with reference to how they had been thinking about the exam on a 4-point scale (1 = *I haven’t been doing this at all* to 4 = *I’ve been doing this a lot*). Items were averaged, $\alpha = .78$.

Results

Participants high in temporal distancing did not perceive their upcoming exam as significantly less demanding than those lower in this tendency. However, they did view themselves as being more capable of coping with the demands imposed by the exam. Consistent with their assessments of their coping resources, high temporal distancers also felt significantly less anxious. As expected, high distancers were more likely to positively reframe the exam and less likely to ruminate about it. Temporal distancing was unassociated with both avoidant (i.e., behavioral disengagement and distraction), and active coping strategies.

Study 5c

Studies 5a and 5b demonstrated that habitual temporal distancers show a more adaptive profile of responding to stressful experiences. One strength of Studies 5a and 5b was that they focused on participants’ responses to a single type of stressor, helping to rule out that high temporal distancers respond less negatively to stressors simply because they experience less severe stressors. However, these studies did not examine whether habitual temporal distancing tendencies predict lower reactivity to a diverse range of real-world stressors. Nor did they test whether habitual temporal distancing tendencies predict the extent to which people cope with *specific* real-world stressors via temporally distancing from them. Study 5c addresses these gaps by directly testing whether habitual temporal distancing tendencies predict stressor-specific temporal distancing from a wide range of real-world stressors. It also explores whether stressor-specific temporal distancing predicts lowered reactivity to stressors in a manner parallel to habitual temporal distancing.

Method

Participants. Participants were drawn from Sample D as described in Table 1.

Procedure. Participants were prompted to identify and describe in writing the most significant source of stress in their lives over the past three months. The most common type of stressors were academic in nature ($n = 113$), with the most frequently cited academic stressors being an increased workload ($n = 52$), followed by failing or receiving a lower than expected final grade in a class ($n = 22$). Other frequently mentioned stressors included break-ups or significant problems with romantic partners ($n = 31$), disputes with family members ($n = 18$), the death of a close family member or friend ($n = 14$), serious illness or injury to the self or a close family member ($n = 14$), and major problems with room-

mate(s) ($n = 12$). All other types of stressors were mentioned infrequently—by fewer than 10 individuals.

Measures.

Temporal distancing.

Habitual temporal distancing tendencies. As in all prior studies, habitual (i.e., global) temporal distancing tendencies were measured with the TDQ. A subset of participants in Sample D ($n = 132$) completed the TDQ 35.78 days ($SD = 2.85$ days) before taking part in this study.

Stressor-specific temporal distancing. Participants indicated the extent to which they adopted a temporally distant perspective on their respective stressful experiences since they arose using a modified version of the Temporal Distancing Questionnaire. All items were revised to assess the extent to which the participant had coped with their specific stressor via temporal distancing (e.g., “I’ve focused on how my feelings about *this situation* may change with time,” 1 = *strongly disagree* to 7 = *strongly agree*), $\alpha = .86$.

Stressor appraisals. Both appraisal measures were made on a 5-point scale (1 = *none at all* to 5 = *a great deal*).

Primary appraisals. Following Study 5b, participants rated the extent to which they perceived their stressor to be demanding by responding to the item: “Please rate the level of pressure and stress you expect to arise from this situation in the future.”

Secondary appraisals. Participants responded to the statement: “Please rate your ability to cope with the pressures and stress arising from this situation.”

Negative affect. Because participants in Study 5c reflected on varied stressors that likely evoked a wide range of negative emotions, participants were asked to rate their level of emotional distress, broadly framed. Participants responded to the following question on a 5-point scale (1 = *not at all* to 5 = *extremely*): “How much distress is this situation causing you now, regardless of when it occurred?”; and the following two questions on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*): “As I think about this situation now, my emotions and physical reactions to it are still intense,” and “As I reflect on this situation, I find myself re-experiencing the emotions I felt when they were most intense.” These three items were z-scored to place them on the same scale, and then averaged, $\alpha = .80$.

Coping responses.

Coping strategies. As in Study 5b, participants’ use of positive reframing ($\alpha = .81$), behavioral disengagement ($\alpha = .64$), distraction ($\alpha = .58$), and active coping ($\alpha = .72$) were measured with Carver’s (1997) brief COPE scales. Instructions were modified such that participants indicated how they had been coping with their respective stressors.

Rumination. Rumination was measured by averaging the following two items adapted from the Ruminative Response Scale (RRS; Treynor, Gonzalez, & Nolen-Hoeksema, 2003): “I’ve been thinking about the things that have happened to me, wishing they had gone better” and “I’ve been thinking to myself ‘Why can’t I handle things better?’” These items were adapted to refer to how participants had been responding to their respective stressors on a 4-point scale (1 = *not at all* to 4 = *often*), $\alpha = .54$.

Results

The results of Study 5c converged with those of Study 5b. As in Study 5b, participants higher in the habitual tendency to tempo-

rally distance felt better equipped to cope with their stressors, and experienced less intense negative affect, although they did not perceive their stressors as significantly less demanding (see Table 8). Like Study 5b, habitual temporal distancing also negatively predicted rumination, positively predicted positive reframing, and was unrelated to avoidant coping. Unlike Study 5b, habitual temporal distancing was weakly, but positively correlated with active coping.

As anticipated, participants higher in habitual temporal distancing were more likely to report that they coped with their specific stressor via temporal distancing. This was true regardless of whether habitual temporal distancing tendencies were measured concurrently ($r = .59, p < .01$), or approximately one month prior to the study ($r = .51, p < .01$). More critically, participants’ degree of temporal distancing from their respective real-world stressor predicted their responses to this stressor as strongly as to more strongly than the TDQ (see Table 8). Participants who coped with their specific stressor via temporal distancing appraised their coping resources more favorably, experienced less negative affect, ruminated less, and engaged in more positive reframing and active coping. Situation-specific temporal distancing was also significantly related to perceiving one’s stressor as less demanding and to being less behaviorally disengaged. These findings converge with prior experimental research, which demonstrates that the act of temporal distancing during stressful situations significantly reduces emotional distress (Bruehlman-Senecal & Ayduk, 2015; Yanagisawa et al., 2011). They also support the validity of our new measure by demonstrating that habitual temporal distancing tendencies predict situation-specific coping via temporal distancing, which in turn predicts a more adaptive profile of responding to real world stressors.

Overlap with the ERQ-R. Virtually all of the significant associations between temporal distancing and the stress-related outcomes across Studies 5a–5c remained significant when controlling for the ERQ-R (see Table 8). The only exception to this pattern was the significant association between temporal distancing and positive reframing in Study 5b, which dropped to nonsignificance after controlling for the ERQ-R.

Studies 5a–5c Summary

Taken together, the results of Studies 5a through 5c indicate that people who habitually distance from negative events are less emotionally reactive to a wide range of stressors, feel better equipped to cope with them, and are less likely to ruminate on stressful experiences than people lower in this tendency. There was no evidence that temporal distancing predicts the use of avoidant coping responses, such as distraction and disengagement, although the findings regarding distraction should be interpreted with caution, given the low reliability of this measure across Studies 5b and 5c. Study 5c additionally suggests that people who report habitually distancing are in fact more likely to cope with a range of real-world stressors by temporally distancing from them, supporting the validity of the global TDQ. Given the deleterious impact that high stress reactivity and rumination have on mental health (e.g., Charles et al., 2013; Nolen-Hoeksema, Larson, Grayson, 1999; Nolen-Hoeksema, McBride, & Larson, 1997), these results are consistent with the possibility that the regular use of temporal distancing supports well-being, at least in part, by moderating

reactivity to stressful and otherwise negative experiences, without leading to avoidance or disengagement that is considered to be maladaptive.

General Discussion

Findings from seven studies provide converging evidence that the tendency to temporally distance from negative experiences predicts a more adaptive profile of affective experiences and stress-reactivity, a profile that may actively support immediate and longer-term well-being. Consistent with prior experimental work, participants high in habitual temporal distancing responded to a variety of acute stressors in a more adaptive manner. Across these varied stressors, high temporal distancers appraised their coping resources more favorably, experienced less intense negative emotion, and ruminated less than low temporal distancers. High temporal distancers also reported greater positive and lesser negative affect—both when asked how they typically feel (a global measure) and when surveyed about their daily experiences (a granular measure). Likewise, temporal distancing predicted broader well-being outcomes, including life satisfaction and worry, both concurrently and prospectively.

These findings dovetail nicely with prior experimental research demonstrating that temporal distancing, and other perspective-broadening strategies, play a causal role in reducing emotional distress. They also expand upon prior experimental work in three key ways. First, the present research demonstrates that the effects of temporal distancing observed in the laboratory generalize to real life. People who regularly implemented temporal distancing in their everyday lives were less affectively reactive to a variety of real-world stressors—a pattern paralleling the findings obtained when temporal distance is experimentally manipulated (Bruehlman-Senecal & Ayduk, 2015). This basic pattern held across stressors that had just occurred (Study 5a), that were upcoming (Study 5b), and that had already arisen (Study 5c). It also held regardless of whether the stressor was highly standardized, like the experimenter provocation of Study 5a, or naturally arising and varied, as in Study 5c. The finding that temporal distancing tendencies predict diminished reactivity to *standardized* stressors helps to rule out that high distancers simply appear less reactive to stress because they tend to encounter less severe stressors. Taken together, these findings speak to the external validity of past experimental research.

Second, the present research addresses the question of whether individuals differ in the stable, habitual tendency to adopt a broader temporal perspective on negative experiences. Across approximately one month, the test–retest reliability coefficient for the Temporal Distancing Questionnaire was .63. For comparison purposes, this reliability coefficient is roughly similar to that of other emotion-regulation strategies, such as general reappraisal and suppression, as assessed by the ERQ-R (see Gross & John, 2003). The reasonably high level of stability in temporal distancing across time suggests that temporal distancing operates as a habitual way of coping with negative experiences. However, the lack of perfect stability in this tendency indicates that individuals can and do change the extent to which they draw upon this strategy. Although temporal distancing was not found to be as stable as superordinate personality constructs, like extroversion or neuroticism, we believe that these results should be interpreted optimis-

tically, rather than as a limitation of this measure. Indeed, it would be discouraging to find that individuals rarely develop new emotion-regulatory strategies, or do not flexibly adjust the extent to which they draw upon different strategies across time. The relative variability in temporal distancing instead suggests that use of this strategy is somewhat fluid, and perhaps amenable to change via interventions.

Third, the present research went beyond the analysis of the immediate emotion-regulatory benefits of temporal distancing to evaluate whether this tendency predicts broader well-being in everyday life. Our results suggest that regular use of temporal distancing does more than simply reduce momentary distress. Habitual temporal distancing predicted a comprehensive profile of adaptive outcomes, including the experience of greater positive and lesser negative affect, as well as lesser worry and greater life satisfaction in the short and longer-term. Taken as a whole, these findings expand our understanding of the implications of temporal distancing across a wide range of outcomes of real-world significance.

Finally, a secondary goal of the present research was to assess how temporal distancing—a specific reappraisal strategy—relates to the broader tendency to engage in any form of reappraisal. Across four independent samples, our new measure of temporal distancing was related to, but not redundant with the ERQ-R, a widely utilized measure of general reappraisal tendencies (r s ranged from .29 to .45). Exploratory and confirmatory factor analyses similarly supported treating these measures as distinct. Moreover, with few exceptions, temporal distancing predicted unique variance in psychological health outcomes, from stress reactivity, to positive and negative affect, to multiple indices of well-being.¹⁰ This pattern of findings is remarkable given the considerable overlap between the TDQ and the ERQ-R.¹¹ These results suggest that there is incremental value to measuring specific reappraisal strategies, apart from the broader tendency to reappraise, and highlight the value of better understanding the

¹⁰ As a more stringent test of incremental validity, we also conducted hierarchical regression analyses for all study outcomes reported in Tables 5 through 8 (Hunsley & Meyer, 2003). We entered the ERQ-R into the first step of the analyses, and the TDQ into the second step, evaluating the significance of the R^2 change in predicting each respective outcome in this second step. With only one exception, in all cases in which there was a significant partial correlation between the TDQ and a study outcome, the TDQ provided a significant increment to the prediction of each outcome, as evidenced by a significant R^2 change in the second step of the analyses. The one exception was the relationship of the TDQ to the Brief Tangney Self-Control Scale (F of change = 3.27, p = .07). These analyses provide additional evidence that temporal distancing has predictive value above and beyond the general tendency to reappraise.

¹¹ Because the TDQ references responses to negative emotions and events, whereas the ERQ-R references responses to *both* positive and negative emotions and events, we computed a “negative reappraisal” score (including ERQ-R Items 2, 3, & 6 from Table 4). We then reran all analyses using this “negative reappraisal” score as a covariate. The magnitude of the partial correlations between the TDQ and all study outcomes remained substantively similar when controlling for negative reappraisal in place of the full ERQ-R (all z s of the difference between the partial correlations < 1.52, all p s > .12), with one exception. The exception again was the partial correlation between temporal distancing and the Brief Tangney Self-Control Scale, which dropped from r = .18 when controlling for the full ERQ-R to r = .12 when controlling for negative reappraisal (z of change = 1.84, p = .07).

unique benefits and the potential costs associated with the regular use of specific reappraisal strategies.

Limitations and Future Directions

The present research demonstrates that temporal distancing has a meaningful impact on people's emotional experiences, their inward reactivity to stressors, and their subjective sense of their own well-being. In the future, it will be important to explore how these differences in inner experiences map onto variations in outwardly observable behavior and physiological responding. For example, prior research suggests that the tendency to appraise one's coping resources favorably—as high temporal distancers did across Studies 5a–5c—predicts more skilled performance in stressful situations, such as when giving a public speech (e.g., Baggett, Saab, & Carver, 1996; Beltzer, Nock, Peters, & Jamieson, 2014). This appraisal pattern is also related to a physiological profile of responding that enables a more active, approach-oriented response to stressors (e.g., Tomaka et al., 1993). Future research should explore the relationship between temporal distancing and active coping in greater depth, as the present studies provided equivocal data on this relationship. Future research could also explore the interpersonal implications of temporal distancing. If high temporal distancers are less prone to overreact to stressors, it is reasonable to expect that other people would perceive them more favorably (for evidence consistent with this prediction, see Gross & John, 2003). On the other hand, temporal distancing from social transgressions may interfere with the full experience of unpleasant yet prosocial emotions (e.g., guilt, shame), leading to poorer interpersonal outcomes. These alternatives should be explored in future research. The addition of behavioral, physiological, and peer-report measures in the future would help to corroborate the self-report data presented here, and provide a richer picture of the lives of high temporal distancers.

Because we utilized samples of college students, future research is also needed to test whether temporal distancing supports well-being across a broader range of individuals. Of particular interest is whether these findings generalize to more psychologically vulnerable populations, including those prone to anxiety and depression, and to individuals experiencing chronic stress. Given the observed benefits of temporal distancing, both in the present research, and in prior experimental work, it is important to directly investigate the clinical utility of temporal distancing. Also of interest is whether these findings apply across a wider age spectrum. It seems reasonable to expect that the psychological consequences of placing events into a broader future time frame may vary considerably according to whether one is near the beginning versus the end of their life span. For example, someone in their early twenties may look forward to the distant future with great optimism and hope, whereas someone in their seventies or eighties may feel trepidation or sadness about aging.

In the present studies, temporal distancing predicted psychological well-being independent of the broader tendency to reappraise, a finding that highlights the value of measuring specific reappraisal strategies. However, there remains the question of *why* temporal distancing predicted unique variance in well-being. For example, are the benefits associated with habitual temporal distancing solely due to the use of this particular strategy? Or might high temporal distancers be more likely to employ a variety of

adaptive reappraisal strategies in everyday life? It seems plausible that the benefits accrued by high temporal distancers may be due, at least in part, to their tendency to use other effective emotion-regulation strategies, or to their tendency to avoid less adaptive strategies. To assess these possibilities, future research should simultaneously measure the use of multiple reappraisal strategies in order to examine their relative power in predicting downstream well-being. It may be particularly illuminating to test whether temporal distancing is related only to the use of similar perspective-broadening strategies (e.g., self-distancing) or whether it also predicts greater use of strategies that do not explicitly involve perspective broadening. Such research would help clarify whether temporal distancing has unique benefits, and could also contribute to the development of a typology of reappraisal strategies, one that is based on naturally arising patterns in their usage.

Finally, although we need to be cautious about drawing strong causal conclusions about the effects of temporal distancing on psychological functioning from correlational data, it is noteworthy that the current findings show strong parallels with prior experimental work in which temporal distancing was manipulated and found to have a similar impact on emotional responding to negative experiences. Likewise, it is promising that temporal distancing predicted a variety of well-being outcomes, such as worry and life satisfaction, both concurrently and prospectively. These findings suggest that temporal distancing may play an active role in sustaining well-being across time. However, intervention research in which people are trained to regularly temporally distance from stressors could further shed light on whether changes in temporal distancing cause changes in well-being. Consistent with this possibility, recent research demonstrates that teaching individuals to temporally distance from everyday stressors leads to increases in positive affect and life satisfaction, and decreases in negative affect, worry, and rumination (Ranney, Bruehlman-Senecal, & Ayduk, 2015). Although preliminary, this research highlights the importance of further investigating the role of temporal distancing in actively promoting mental health.

Conclusions

The present studies provide robust evidence that certain individuals are more inclined to put negative experiences into a broader perspective than others. They also suggest that doing so regularly supports psychological health. These findings add to a growing body of work demonstrating that perspective-broadening strategies play a central role in sustaining well-being. Given their promise in reducing stress reactivity and promoting psychological health, it is important to explore whether the benefits of temporal distancing, as well as other perspective-broadening strategies, extend to clinical populations, who may experience particular difficulty “seeing the bigger picture.” It will also be important to further investigate whether temporal distancing predicts meaningful change in psychological health across time.

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Received April 14, 2015

Revision received February 20, 2016

Accepted April 7, 2016 ■

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