Personality and Individual Differences 225 (2024) 112663

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

A broad view of time predicts greater subjective well-being

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ARTICLE INFO

Keywords:
Time perspective
Subjective well-being
Happiness
Life satisfaction
Meaning
Scale development

ABSTRACT

Time is a critical resource, because how we spend the hours of our days sums up to the years of our lives. Yet are there individual differences in the way people think about their time, and how do such differences relate to subjective well-being? In the current research, we developed and empirically validated a 4-item scale to assess the extent to which people take a broad view of time—typically thinking more in terms of their years and life overall, rather than by hours and days. We provide evidence that those with a broad view of time report greater subjective well-being (i.e., more positive emotion, satisfaction, and meaning in life), and they spend their time in more meaningful ways (i.e., by dedicating more time to important activities, and not merely urgent ones).

Time is a critical resource. Indeed, how we spend the hours of our days sums up to the years of our lives. Research has shown that individuals who recognize this and attend more to time than money report feeling happier and more satisfied in their lives (Hershfield et al., 2016; Mogilner, 2010; Mogilner, 2019; Whillans et al., 2016). Yet, rushing from task to task, people often feel limited by the hours in their days and unhappy from the little time they have (Kasser & Sheldon, 2009; Sharif et al., 2021). A nationwide poll found that roughly half of Americans do not feel they have enough time to get everything they need to do done (Newport, 2017; Trupia et al., 2024). The stress associated with time intensified during the COVID-19 pandemic (Giurge et al., 2021) and is not unique to those living in the United States. People across the globe suffer from time poverty—feeling like they have too much to do and not enough time to do it (Hamermesh, 2019; Hamermesh & Lee, 2007; Rudd, 2019). People everywhere struggle deciding how to allocate the hours of their days in pursuit of multiple and often competing goals (Etkin, 2019; Etkin et al., 2015; Tonietto et al., 2021; Tonietto & Malkoc, 2016). Given the constraints imposed by this resource, how could being so keenly focused on time be associated with greater emotional well-being?

Perhaps the benefits from thinking about time depend less on the extent to which one thinks about it, but rather *how* one thinks about time—and, in particular, the scope of that thinking. In this research, we investigate whether there are individual differences in the extent to which people take a broad view of time (thinking more in terms of their years and life overall) versus a narrower view of time (thinking more in terms of their hours and days). We further examine how one's time perspective relates to subjective well-being.

1. The benefits of a broad view

In behavioral decision making, researchers have observed the positive consequences of shifting from a narrower perspective to a broader one. In the financial domain, for instance, when people budget with a broader mindset and consider a larger swath of their purchases, they are less likely to overspend (Sussman & Alter, 2012). In the case of making financial bets, when gamblers take a broader view and consider their choices all at once, rather than one at a time, they are more likely to select optimal (non-dominated) options (Koch & Nafziger, 2019; Rabin & Weizsäcker, 2009). And when consumers choose from their broader set of options presented all together instead of one-by-one, they end up more satisfied with their choices (Mogilner et al., 2013).

The benefits of assuming a broader perspective extend to the domain of physical settings too. People are significantly happier when they are outside (vs. inside), and when they are exposed to the more expansive views that nature offers (vs. when visually confined within narrower urban streets; Mackerron & Mourato, 2013).

Additionally, in the interpersonal domain, those who more broadly incorporate others into their self-concept enjoy greater feelings of belonging and happiness compared to those who define themselves

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https://doi.org/10.1016/j.paid.2024.112663
Received 15 December 2023; Received in revised form 19 March 2024; Accepted 1 April 2024
Available online 24 April 2024

more narrowly (Aron et al., 1995; Galinsky et al., 2005). And in the case of thinking about negative personal events, people who take a broader, third person viewpoint experience less emotional reactivity compared to those who remain immersed in their narrower, first-person point of view (Ayduk & Kross, 2010; Kross et al., 2005).

Here, we explore whether taking a broader perspective affords benefits in the domain of time as well. That is, compared to people who stay narrowly focused on the hours of their days, are individuals who are more prone to think broadly about their years better off? Perhaps taking a (figurative) step back and looking across the broader scope of one's time, as if from a bird's-eye view, is associated with greater well-being.

2. A broad view of time

In this research, we examine whether there are individual differences in how people think about their time along this dimension of scope. That is, do people vary in the extent to which they tend to take a broader (vs. narrower) view of time? By taking a broad view of time, we mean that a person typically thinks about their time more in terms of their years, and life overall, rather than their minutes or hours. Further, we test whether those who take a broad view of time experience higher levels of subjective well-being: experiencing greater happiness, satisfaction, and meaning in life.

Based on previous theorizing (Holmes, 2022; Mogilner et al., 2017), we predicted a positive association between holding a broader time perspective and subjective well-being. We expected this positive relationship for several reasons.

First, narrowly thinking about time in terms of hours necessitates the consideration of opportunity costs (Spiller, 2011). Spending an hour in one way means forfeiting all the other ways that hour could have been spent. Studies have shown, for instance, that when people think about the amount of money they could make in an hour of work, they are less likely to spend their hours in highly fulfilling (but less profitable) ways, like volunteering and cultivating relationships (DeVoe, 2019; DeVoe & House, 2012; DeVoe & Pfeffer, 2010). Moreover, this incessant attention to tradeoffs elicits negative feelings, such as guilt and regret. For instance, faced with the decision of whether to spend the next hour working or socializing, people are forced to grapple with the conflict between what they "should" do versus what they "want" to do (Dai et al., 2014; Milkman et al., 2008). Although spending the hour with friends promises greater happiness (Kahneman et al., 2004; Mogilner, 2010), not spending the time doing the work they *should* do threatens feelings of guilt (Bazerman et al., 1998; Khan et al., 2005). Furthermore, other research shows that even if one were to choose to spend that time working, they are likely to later feel regret from having missed out on life's pleasures (Kivetz & Keinan, 2006). Thus, thinking about one's time hour-by-hour imposes tradeoffs that elicit negative emotions, no matter which choice was made.

However, holding a broad view of time minimizes this conflict. The pained decision between *whether* to spend a given hour on one activity versus another gives way to considerations of *when* to spend time on each of the activities. That is, by thinking more broadly about their time, individuals can assign hours to work *and* hours to socialize—allowing them to dedicate some time to *all* their important activities. This more encompassing perspective of time reduces the negative emotions from making forced tradeoffs hour-by-hour, allowing people to cultivate a multitude of interests and priorities *across* their time. This opportunity for greater balance in life could offer increased subjective well-being (Sheldon et al., 2010; Sheldon & Niemiec, 2006).

Second, a broader time perspective also allows people to see how each of the experiences that fill their hours coalesce to create the complex and beautiful mosaic of their lives. This alleviates the pressure for each hour to be perfect. No one hour defines a person; it is how all of one's hours fit together into the years and decades that comprise the chapters of one's life story. Indeed, research shows that even negative experiences can have positive effects. They serve to contribute to a greater sense of meaning in life *if* one can see how those experiences fit into their broader life narrative (King et al., 2016; Mancini, 2019; Vohs et al., 2019). Having a broad view of time could thus help people be more resilient when subjected to trying circumstances. Knowing that "this too shall pass"—that the current time is just a portion of one's time overall—might help people get through hard times, and perhaps even end up better off due to personal growth and learning.

A third benefit of thinking about time in terms of the years of one's life, instead of the hours of the day, is that considering one's daily hours could make time feel scarcer. With only 24 hours each day, and even fewer of those available to spend between sleep and professional and personal obligations, thinking in terms of these smaller and more imminently finite units could highlight just how little time one has to get everything done. This lack of time may be due to structural factors that are outside of individual control—such as working hours, traffic conditions, and access to childcare (Trupia et al., 2024). Previous research has shown that this sense of time poverty can have negative consequences, making people less healthy (Höge, 2009; Strazdins et al., 2011; Yan et al., 2003), less kind (Darley & Batson, 1973; Mogilner et al., 2012), and less happy (Kasser & Sheldon, 2009; Sharif et al., 2021). When people feel pressed for time, they become more prevention-focused rather than promotion-focused, thus settling for less aspirational goals (Mogilner et al., 2008; Pennington & Roese, 2003). Furthermore, the sense of scarcity exerts a cognitive load that makes people more reactive in their decision-making, often ending up with less satisfying outcomes (Dhar & Kim, 2007; Monga et al., 2017; Mullainathan & Sharif, 2013). Time management and planning can mitigate some of the negative effects of time scarcity by increasing feelings of control (Macan, 1994; Häfner & Stock, 2010; Aeon et al., 2021, Avnet & Sellier, 2011), yet how an individual thinks about their time in terms of scope may too play a role.

Finally, and perhaps most critically, when people feel constrained by time, they devote less time to what truly matters to them. When in a rush, people are prone to spend on tasks that feel urgent, regardless of the importance of those tasks. Indeed, the "mere urgency effect" suggests that because urgent tasks consume attention, people opt to spend their time on them, even if it means forgoing more important tasks (Zhu et al., 2018). However, by taking a broad view of time and thinking about one's years and life overall, this sense of urgency may attenuate. People would then have the space to consider their higher-order goals and values. Indeed, students who were given assignments that led them to consider their years and life overall (e.g., writing one's own eulogy or counting the times in life they have left to do something they love) gained greater clarity about what is ultimately important to them (Holmes, 2022). With a broad view of time, it seems that people could become more deliberate in how they allocate their hours: spending on what is important to them, and not just reacting to what seems urgent in the moment. This would be beneficial because spending time doing activities that one deems valuable and fulfilling provides greater feelings of satisfaction (Mojza et al., 2011).

3. Time perspectives

Time is a rich and fundamental construct, and we are not the first to distinguish the ways people think about it. For instance, Zimbardo and Boyd (1999) created a scale (the Time Perspective Inventory) to measure the extent to which people are oriented toward the past, the present, or the future, as well as the valence they associate with each. Other scales center on thoughts about the future. Namely, Lang and Carstensen (2002) developed the Future Time Perspective Scale to assess the amount of time people perceive themselves as having left in their lives; Hershfield and colleagues (Ersner-Hershfield et al., 2009) developed the Future Self-Continuity Scale to measure how much continuity – or overlap – people feel with their future selves. Other scales focus on the present—either measuring the extent to which individuals are mindful of the present moment (Brown & Ryan, 2003) or how much available

time individuals perceive they currently have (Kasser & Sheldon, 2009). Additionally, Vallacher and Wegner's (1987) Theory of Action Identification scale, which assesses an individual's tendency to think of events at a high level of construal (i.e., *why* to do it) versus at a low level (i.e., *how* to do it), has been linked to perceived temporal distance: how far versus close the event seems (Trope & Liberman, 2010). We contribute to the existing literature by introducing a novel measure of time perspective that identifies temporal scope as another important dimension along which individuals vary in their thinking about this fundamental resource. We test whether the extent to which individuals take a broad (vs. narrow) view of time is distinct from these other conceptualizations, and whether it plays a unique role in predicting subjective well-being.

4. Research overview

In the current research, we develop and validate a scale to assess the extent to which people tend to take a broad view of time. In doing so, we examine how a broader time perspective is distinct from other related concepts and relates to a host of subjective well-being measures, including affective experience, life satisfaction, flourishing, and having a sense of meaning, as well as downstream consequences, such as how people choose to invest their time.

Inspired by our theorizing, we first conducted an initial survey with a comprehensive set of potential scale items. We then employed an exploratory factor analysis to narrow the set of questions down to four items that make up the Broad View of Time scale (Study 1). In the next study, we validated the scale with a confirmatory factor analysis and examined test-retest reliability, we assessed the scale's discriminant validity, and we tested for our predicted relationship with subjective well-being, controlling for a host of related time perspective measures (Study 2). Lastly, we examined the scale's predictive validity, finding that having a broad view of time predicts choice of how to spend time: preferring important (rather than merely urgent) tasks (Study 3). Although we theorize that the broad view of time causally affects subjective well-being and time use, our analytical strategy does not allow for causal inference. Thus, we view our correlational findings as a first step in understanding the relationships between individuals holding a broad view of time with important and theoretically informed outcomes.

Pre-registrations, study materials, data, and code are all available at https://researchbox.org/1218. All analytic choices in this paper follow pre-registrations unless otherwise specified.

5. Study 1: Broad View of Time scale

The purpose of Study 1 was to compose a broad pool of items that would potentially capture what it means to take a broad view of time. Then, because short and internally consistent scales are preferred for theoretical and practical purposes (Clark & Watson, 1995), we used a factor analysis to help identify the optimal subset of items that would describe the theorized construct most accurately and efficiently.

5.1. Method

5.1.1. Participants

Five hundred participants were recruited to take part in a pre-registered survey through Amazon's Mechanical Turk. Seventeen failed the pre-registered attention check, leaving a total sample of 483 participants (ages 19–75, $M = 36.3$, $SD = 11.4$; 42.7 % female).

5.1.2. Materials and procedure

We first generated a wide variety of potential items for the scale. The items were informed by our theorizing (see also Mogilner et al., 2017) and included a mixture of description (e.g., "I try to take a broad view of my time—thinking in terms of years instead of hours") and visual metaphors (e.g., "I take a birds-eye-view of my time, looking down and seeing all of the moments in my life at once") to ensure the statements were comprehensive and also comprehensible to lay people. The initial set included 50 items in total (see Appendix A): 25 items capturing a broad view of time (e.g., "I tend to think in terms of longer timeframes") and 25 items capturing a narrower view of time (e.g., "I tend to think about my time in terms of hours"). Participants were asked to indicate the extent to which they agreed with each statement on a 7-point scale from 1 (strongly disagree) to 7 (strongly agree). Presentation order was randomized. After responding to the items, participants completed demographic questions.

5.2. Results and discussion

We conducted an exploratory factor analysis of the 50 items. We first used a parallel analysis scree plot, which suggested the optimal number of factors was six. We next ran a series of models using Ordinary Least Squares estimation and an oblimin rotation, extracting 3, 4, 5, and 6 different factors. In each analysis, we retained items that had factor loadings above 0.5 for their respective factor (Costello & Osborne, 2005). After examining the extracted factors in each analysis, the 6-factor extraction suggested by the scree plot turned out to be a poor structure because it separated factors that were conceptually similar, and one of the factors only retained a single item with a factor loading over 0.5. The 4-factor structure, with 32 significant items, did a slightly better job at capturing dimensions that were in line with our theorizing and had at least two items with loadings above 0.5 per factor. Yet, after scrutinizing the four factors and their loadings (see Appendix A), it was clear that only the first factor contained items with high face validity to accurately capture our construct of interest. For instance, the second factor included "An hour now is as important as an hour in my future or past," while the third and fourth factors contained "Time is like a road that I'm driving along, with the future ahead and the past behind" and "All I care about is the present." Because we were a priori interested in assessing the degree to which people adopt a broad view of time, we thus focused on the first factor. We further removed the conceptually redundant items in this factor with high inter-item correlations (Boateng et al., 2018) so that what remained was an internally consistent ($\alpha = 0.71$) and succinct one-factor 4-item Broad View of Time scale:

1. I try to take a broad view of my time—thinking in terms of years instead of hours.
2. I take a birds-eye-view of my time, looking down and seeing all of the moments in my life at once.
3. I tend to view my time as if I am looking down on a calendar, seeing all of my days and weeks and months laid out.
4. I make decisions thinking about my whole lifespan.

We found that individuals vary considerably in the degree to which they take a broad view of time ($M = 4.32$, $SD = 1.13$). See Fig. 1 for a histogram showing the distribution.

6. Study 2: predicting subjective well-being

The purpose of Study 2 was to test for the internal and retest reliability of the four-item Broad View of Time scale, as well as to assess the scale's nomological validity. Nomological validity is a form of construct validity that gauges whether the proposed measure correlates with other variables as expected (Cronbach & Meehl, 1955). Additionally, we investigated discriminant and predictive validity by testing whether, compared to other time perspective measures, the Broad View of Time scale uniquely predicts subjective well-being.

6.1. Method

6.1.1. Participants

Eight hundred participants were recruited to take part in the survey

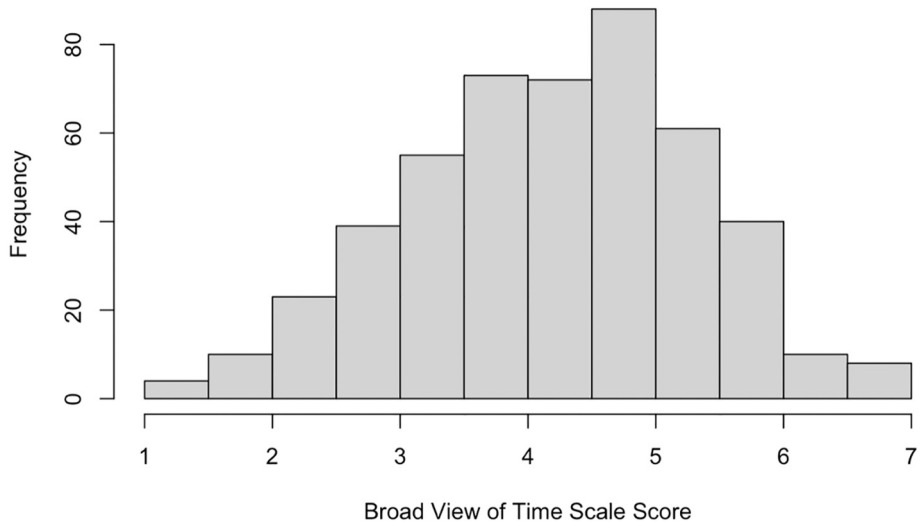

Fig. 1. Study 1: Distribution of individuals on the Broad View of Time scale.
Note. A histogram representing the distribution of scores on the Broad View of Time scale from Study 1.

through Amazon's Mechanical Turk. Due to experimenter error, we failed to pre-register this portion of this study. We did however confirm the results of Study 2 in an additional pre-registered study reported in Appendix B. Thirty-seven failed the attention check, leaving a total sample of 763 participants (ages 18–72, $M = 37.3$, $SD = 11.3$; 49 % female). To assess retest reliability, two weeks after the initial study, we recruited as many of the original participants as possible through Amazon's Mechanical Turk ($N = 445$; ages 18–72, $M = 38.3$, $SD = 12.0$; 52.3 % female). (This portion of Study 2 was pre-registered).

6.1.2. Materials and procedure

In addition to completing the four-item Broad View of Time scale ($\alpha = 0.74$), participants completed other related scales, presented in a random order, including those specifically pertaining to time—Future Time Perspective (Carstensen & Lang, 1996), Zimbardo's Time Inventory for Past Negative, Past Positive, Present Fatalism, Present Hedonism, and Future (Zhang et al., 2013), Future Self Continuity (Ersner-Hershfield et al., 2009), and Time Affluence (Kasser & Sheldon, 2009)—as well as those that assess how individuals tend to think more generally, including Construal Level (Vallacher & Wegner, 1989) and Mindful Attention Awareness (Brown & Ryan, 2003). Participants also reported their subjective well-being on a number of measures: the Scale of Positive and Negative Experience (Diener et al., 2010), Satisfaction with Life (Diener et al., 1985), Flourishing (Diener et al., 2010), and Meaning in Life, including one's Presence of and Search for Meaning (Steger et al., 2006). Participants reported their demographic information at the end of the study, including their BMI inputs and whether they smoke, so we could assess whether taking a Broad View of Time relates to longer-term health behaviors. Appendix C reports the relationships between demographic factors and Broad View of Time scores.

Individuals varied considerably in the extent to which they adopted a broad view of time ($M = 4.07$, $SD = 1.28$) (Fig. 2).

To assess retest reliability, two weeks after responding to the initial survey, the same participants were contacted to again complete the four-item Broad View of Time scale.

6.2. Results and discussion

6.2.1. Confirmatory factor analysis

A confirmatory factor analysis for the four-item scale using the lavaan package (Rosseel, 2012) in R showed a good fit for a single factor model (comparative fit index (CFI) = 0.94, root-mean-square error of

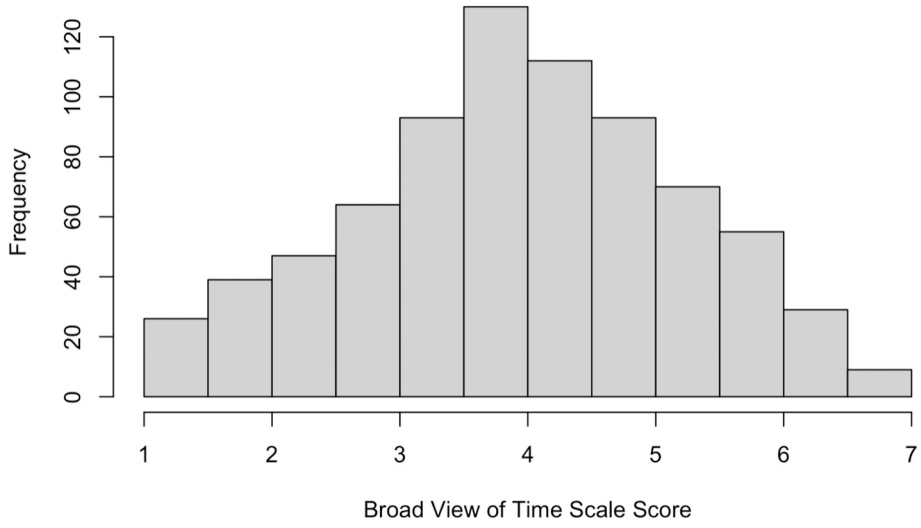

Fig. 2. Study 2: Distribution of individuals on the Broad View of Time scale.
Note. A histogram representing the distribution of scores on the Broad View of Time scale from Study 2.

approximation (RMSEA) = 0.17, standardized root-mean-square residual (SRMR) = 0.04, X^2 (2, N = 767) = 46.84, $p < .001$).

6.2.2. Construct validity

To assess nomological validity, we conducted correlations between the Broad View of Time scale and all the other time-related and construal measures we collected (see Table 1). As we would expect, the Broad View of Time scale was significantly related to Future Time Perspective, which pertains to the amount of time individuals perceive themselves as having available in terms of years and their lives overall. Individuals who take a broader view of time tend to view their futures as more expansive. The Broad View of Time scale was also positively related to each component of the short Zimbardo Time Inventory, which assesses the extent to which individuals are oriented toward the past, present, or future. Since having a broad view of time involves figuratively taking a birds-eye-view of time—from where one can look down and see all the moments in their life at once—it makes sense that people who tend to take this view are similarly focused on their past, present, *and* future. However, the Broad View of Time scale was not related to feelings of time affluence (which pertains to the availability of daily hours), nor was it related to connection to future selves.

Also as expected, the Broad View of Time scale was positively related to construal level as measured with the Behavioral Identification Form. This suggests that individuals who take a broader view of time tend to think more abstractly than concretely. Interestingly, the Broad View of Time scale also positively relates to mindfulness, which is a significant predictor of subjective well-being (Brown & Ryan, 2003).

6.2.3. Predicting subjective well-being

To test our theorized relationship between taking a broad view of time and subjective well-being, we estimated OLS regressions with the Broad View of Time scale as the primary independent variable and with each measure of subjective well-being as the dependent variables. For each of the well-being measures, we conducted three regressions: first without covariates, then with demographic controls, and finally with demographic controls and the other time-related scales. In line with our predictions, we found that the Broad View of Time scale positively predicted subjective well-being: including affective experience (calculated by subtracting negative affect scores from positive affect scores), life satisfaction, flourishing, and presence of meaning in life. In support of the scale's discriminant validity, these effects held when controlling for existing time perspective scales and demographic variables. The Broad View of Time scale did not statistically significantly predict the extent to which individuals search for meaning in life when controlling for demographics and the other scales. See Table 2 for the full regression results.

Table 1
The Broad View of Time scale's correlations with other scales.

Scale	Alpha	Correlation with the Broad View of Time scale
Future Time Perspective (Carstensen & Lang, 1996)	0.80	0.197***
Short Zimbardo Time Perspective Inventory (Zhang et al., 2013)		
Past Negative	0.89	0.09**
Past Positive	0.78	0.27***
Present Fatalism	0.55	0.16***
Present Hedonism	0.72	0.21***
Future	0.72	0.20***
Time Affluence (Kasser & Sheldon, 2009)	0.89	−0.05
Future Self Continuity Scale (Ersner-Hershfield et al., 2009)		−0.02
Construal Level - Behavioral Identification Form (Vallacher & Wegner, 1989)	0.88	0.16***
Mindful Attention Awareness Scale (Brown & Ryan, 2003)	0.94	0.24***

Note. *$p < .05$. **$p < .01$. ***p < .001

Table 2
The Broad View of Time scale predicts subjective well-being.

	Affective experience			Life satisfaction			Flourishing			Presence of meaning			Search for meaning		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Broad View of Time scale	0.095**	0.111**	0.067*	0.295***	0.187***	0.112***	0.286***	0.251***	0.145***	0.286***	0.258***	0.212***	0.194***	0.134**	0.064
	(0.036)	(0.039)	(0.030)	(0.035)	(0.035)	(0.029)	(0.035)	(0.037)	(0.028)	(0.035)	(0.036)	(0.032)	(0.036)	(0.038)	(0.037)
Demographic controls	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes
Controlling for other time scales	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes
Observations	767	753	753	767	753	753	767	753	753	767	753	753	767	753	753
R^2	0.009	0.093	0.537	0.087	0.266	0.559	0.082	0.186	0.579	0.082	0.220	0.471	0.038	0.127	0.266

Note. The regressions in columns (1, 4, 7, 10, 13) do not include covariates; columns (2, 5, 8, 11, 14) include demographic controls (age, gender, education, income, race, marital status, children, grandchildren, smoking, and BMI); columns (3, 6, 9, 12, 15) include demographic controls, as well other time perspectives including abstract thinking, future self-continuity, future time perspective, time affluence, mindfulness, and the Zimbardo time perspectives. Details on how categorical variables are coded can be found in the appendix and ResearchBox codebook. All coefficients are standardized. Standard errors are in parentheses underneath the coefficients, and coefficients statistically significantly different from zero are followed by asterisks (*$p < .05$. **$p < .01$. ***$p < .001$).

We also conducted ancillary analyses, finding that taking a broad view of time is positively related to indicators of healthy behavior. In particular, those higher on the Broad View of Time scale have lower BMI and are less likely to smoke (see Appendix C for full demographic reporting).

Altogether, these results support the construct validity of the Broad View of Time scale, behaving as it should within its nomological network and being positively associated with conceptually related constructs and theorized outcomes.

6.2.4. Test-retest reliability

Finally, to evaluate test-retest reliability, we correlated participants' Time 1 and Time 2 scores on the Broad View of Time scale, finding acceptable reliability ($N = 445$; $r = 0.72$, $p < .001$).

6.2.5. Replication

To gain greater confidence in these results, we conducted an additional, pre-registered study that we report as Appendix B Study. This study successfully replicated the key results, finding again that the Broad View of Time scale uniquely predicts subjective well-being over and above other measures of time perspective. See Table B1 in the Appendix for the regression coefficients.

7. Study 3: predicting time use

The purpose of Study 3 was to again test the predictive validity of the Broad View of Time scale, with another theoretically informed outcome. We theorized that viewing one's time more broadly—thinking in terms of years and one's life overall—would help people prioritize their time for what ultimately matters to them: spending on tasks that are important, and not just what might seem urgent in the moment. This is a critical outcome variable because prior research warns that in the hurry of day-to-day life, people are prone to waste their time on tasks that are presented as urgent, irrespective of the importance of those tasks (Zhu et al., 2018). Here, we tested whether people who take a broader time perspective are more likely to choose to spend their time on tasks that are important, irrespective of their urgency.

7.1. Method

7.1.1. Participants

As pre-registered, to reach people who had already completed the Broad View of Time scale, we recruited participants who took part in our previous studies (Studies 1 and Appendix B Study). We were ultimately able to recruit 225 respondents through Amazon's Mechanical Turk (ages 20–71, $M = 42.0$, $SD = 13.2$ years; 56.3 % female).

7.1.2. Materials and procedure

Participants first read a description about urgent and important tasks that read as follows: "Sometimes we do tasks because they are important to us (i.e., the consequences are big), and sometimes we do tasks because they are urgent (i.e., they must be completed soon). Tasks can be important and urgent, or neither important nor urgent, but there are also tasks that are urgent but not important, and tasks that are important but not urgent." Participants were then asked how much time they spent on each type of task, with the following questions: "In the past week, to what extent did you dedicate your time to tasks that are important?" and "In the past week, to what extent did you dedicate your time to tasks that are urgent?" (both on 7-point scales ranging from 1 = *never* to 7 = *all the time*).

To get a sense of the types of tasks participants were considering when answering these questions, we asked them to list activities that fall into each of the four categories: both important and urgent tasks (e.g., "taking medication," "going to work on time," "paying bills," "helping someone who is injured"), important but not urgent tasks (e.g., "exercising," "calling a family member," "saving for retirement," "getting a colonoscopy"), urgent but not important tasks (e.g., "reading emails," "taking out the trash," "texting someone back right away," "replying to boss"), and neither important nor urgent tasks (e.g., "playing videogames," "watching TV," "social media," "buying clothes").

7.2. Results and discussion

To evaluate the predictive validity of the scale, we estimated an OLS regression with the extent to which people spent time on important tasks as the dependent variable, controlling for the extent to which people spent time on urgent tasks as a covariate, and with the Broad View of Time Visual Scale as the primary independent variable of interest. We pre-registered to control for urgency in the regression because many tasks are both important and urgent. We wanted to test whether, holding time spent on urgent tasks constant, people who take a broader view of time are more likely to spend time on important tasks. Also, by testing the reverse, holding time spent on important tasks constant, we could see if people are less likely to spend time on urgent tasks, given this broad perspective. This approach offers insight into whether people who have a Broad View of Time prioritize important tasks above and beyond urgent ones. In addition, we controlled for other related measures (Future Time Perspective, the Zimbardo Time Inventories, Time Affluence, Future Self-Continuity, Construal Level, Mindfulness) and demographics. We used a dummy variable to control for the original survey that participants took part in (Study 1 or Appendix B Study).

As predicted, we found support for our hypothesis that the Broad View of Time Scale is predictive of the extent to which people spend time on tasks that are important, controlling for their time spent on tasks that seem urgent ($\beta = 0.20$, $p = .003$, 95 % CI [0.07, 0.32]). Also consistent with our theory, the Broad View of Time Scale did not predict time spent on urgent tasks when controlling for time spent on important tasks ($\beta = 0.11$, $p = .068$, 95 % CI [−0.03, 0.24]).

8. General discussion

Across a total of four studies, we developed and validated the Broad View of Time scale to assess individual differences in the extent to which people take a broader view of time (thinking more in terms of years and their life overall) versus a narrower one (thinking more about the hours in their days). The resulting four-item scale not only identifies the presence of a novel individual difference, but also documents how this perspective relates to subjective well-being. We found that taking a broad view of time (as measured by the Broad View of Time scale) is positively associated with higher levels of positive affect, life satisfaction, meaning in life, and flourishing. It is also predictive of how people choose to spend their time: people who take a broad view of time are more likely to spend their time on tasks that are important, rather than merely urgent. Taken together, this work helps to identify a distinctive—and potentially beneficial—temporal perspective, thus expanding our understanding of how people think about, experience, and manage their time.

8.1. Theoretical contributions

This research contributes to both theory and practice in the domain of time. Although there is a large and robust literature aimed at understanding temporal perspectives and how people divide their attention between the past, present, and future, here we uncover the potential of removing such boundaries. For instance, seminal research has documented the ways in which people are oriented more toward the past, present, or future, finding reliable, valid, and predictive differences in temporal orientation (Lang & Carstensen, 2002; Zimbardo & Boyd, 1999; Zimbardo & Boyd, 2008). Other work has specifically focused on future orientation and the extent to which individuals perceive it as limited or extensive (Carstensen et al., 1999), or researchers have focused on present orientation and the extent to which individuals

perceive the present ending sooner or later (Hershfield & Maglio, 2020), or the extent to which people view weak versus strong separations between the present and future (Chen, 2013). This prior research assumes divisions along a single temporal trajectory that stretches from the past into the present and onto the future, examining the direction in which people are focused along that line. We take a novel approach and allow for the possibility of people figuratively taking a step back from that line and looking across their time from a birds-eye view. This broader perspective allows people to consider and piece together the many moments in their lives—regardless of whether in the past, present, or future. That is, instead of measuring people's degree of attention on *either* the past, present, *or* future, here we examine how the past, present, *and* future may be viewed simultaneously, as well as the extent to which individuals are prone to take this broader view of time. Along with newly identifying this way of viewing time, we find that an individual's tendency to apply this time perspective is associated with greater happiness, satisfaction, and meaning in life.

By identifying the link between this time perspective and subjective well-being, our findings deepen current understanding of the relative benefits associated with thinking about time more generally. Though earlier work has found that focusing more on time than money predicts greater happiness (Holmes, 2022; Mogilner, 2019), why this is the case remains relatively unclear. That is, why is it that people who tend to choose time over money tend to also be happier (Hershfield et al., 2016; Whillans et al., 2016)? And why does leading people to think about the construct of time (vs. money) lead them to feel happier (Mogilner, 2010)? Our findings here suggest that what might be driving those effects is not from thinking *about* time per se, but rather, *how* one thinks about time. The benefits of paying greater attention to time as one's critical resource may have more to do with considering one's years and lifetime overall, rather than the day's hours.

The current findings also serve to inform our understanding of *what* people value. Indeed, a large and impactful time-related literature examines the tradeoffs people make when choosing between options that provide benefits now versus later. For instance, research on intertemporal discounting (Soman et al., 2005), on "want" versus "should" conflicts (Milkman et al., 2008), and self-control dilemmas (Kotabe & Hofmann, 2015) all assert that a person's present and future selves possess different sets of values, and that these different selves view different outcomes as more important (e.g., Loewenstein & Thaler, 1989). In these paradigms respectively, the present self values the immediacy of receiving a smaller reward, whereas the future self values the larger reward and is willing to wait; the present self values what they "want" to do (so might choose to go out with friends, for example), whereas the future self places greater value on what they "should" do (so might elect to stay in to study for the test); and the present self values the pleasure of eating chocolate cake, whereas the future-self values healthiness and is more apt to select the fruit salad option. Implicitly, this prior work insists that tradeoffs must exist between what one values now versus what one will value later. However, the broad view of time that we observe in the present research opens the possibility that people do not necessarily hold inconsistent preferences, but rather, people may deliberately prefer each option across time: now *and* later (Strohminger & Nichols, 2014). Taking a broad view of time removes the forced tradeoffs between *whether* to invest in one option versus the other, and it allows the possibility of deciding *when* to invest in *all* of the various options that one values. It is also worth noting that even identifying what one values can sometimes be difficult. However, taking a broader view of time can help people here too, because thinking about one's life overall clarifies what ultimately matters. Instead of just the present versus the future as the temporal dimension that drives decision-making, the current work demonstrates that taking a broader view of time is associated with making decisions that could benefit someone in the present *and* in the future—with outcomes that will be valued now *and* later (Hershfield, 2023).

8.2. Future directions

We view this research endeavor as a preliminary step in investigating the role that a broad view of time might play in people's lives. As such, there are a number of open questions that deserve further exploration. First, although the online MTurk user demographics are representative of the United States population – in terms of descriptive demographics – we do not yet know whether MTurk users are representative of the American population in terms of psychographic variables, especially with regards to a temporal perspective (Buhrmester et al., 2016). Further, by restricting our investigation to Western, English-speaking participants, we are unable to speak to cross-cultural differences in the extent to which people think about time in this way, or how doing so relates to well-being (Henrich et al., 2010). Other work has found intriguing differences in how language may shape time perspective (e.g., English speakers view time moving from left to right, and Hebrew speakers view time as moving from right to left; Boroditsky, 2018). Future work should thus investigate whether the extent to which differences in a broad view of time exist across cultural groups.

Second, although the creation of the Broad View of Time scale was theory-driven, we took a data-driven approach when it came to question refinement. And although the items that comprise the final four-item scale are ones that are in line with our previous theorizing (Mogilner et al., 2017), it is possible that there are other elements of this temporal perspective that we failed to capture when we developed our initial question pool. As the Broad View of Time Scale gets further tested on different populations and with different outcome variables, we leave open the possibility that the questions contained in the scale get further refined and that new ones get added.

Third, the questions contained in the Broad View of Time scale speak to people's general tendencies in their likelihood of taking this perspective. The scale, however, does not assess the extent to which, or the instances in which, people are likely to switch between a broader versus narrower view of time. We do not yet know whether the positive relationship between taking a broad view of time and well-being occurs simply because a broad view of time is taken or because of the frequency in which a broad view of time is taken. Future research could employ experience sampling methodology to examine the consistency by which people take a broad view of time. An additional study we conducted suggests that this perspective is not impervious to situational influence: it can be manipulated, and perhaps personally selected. In this study (see Appendix D), we prompted participants to write their to-do list while thinking either about their time broadly ("Write down three things that you would like to accomplish in your life") versus more narrowly ("Write down three things that you would like to accomplish before the end of today"). Compared to those considering things they wanted to get done that day, people led to consider things they wanted to get done in their life subsequently reported higher levels on the Broad View of Time scale ($N = 481$; $M_{today} = 4.29$, $SD_{today} = 1.34$; $M_{life} = 4.71$, $SD_{life} = 1.29$; $t = -3.54$, $p < .001$). Though this study did not show a significant effect on subjective well-being, future research could explore whether greater consistency or practice in taking on a broad view of time could improve subjective well-being over time as it influences repeated decisions about how to spend one's time. Moreover, such paradigms would additionally allow researchers to investigate whether the relationship between a broad view of time and well-being is stable or varies across circumstances. Related to these points, future work could also explore whether having a broader view of time predicts feeling less conflict, stress, or tension around how to spend one's time, which could subsequently improve well-being. It may also be that it relates to people's tendencies to rely on "clock time" versus "event time", which too can influence well-being (Avnet & Sellier, 2011; Sellier & Avnet, 2014).

Lastly, across studies, we demonstrated the link between higher levels on the Broad View of Time scale and higher levels on measures of subjective well-being. Although we theorize that taking a broad view of time is causally linked to enhanced well-being, with this scale

development project, we cannot rule out the possibility of reverse causality. It may be the case, in other words, that higher levels of well-being *cause* people to take a broader view of time. It is also possible that our observed effect is bidirectional and mutually and positively reinforcing. Though we cannot and must not claim causality, we can conclude from these findings that those who think more about the years of their life than the hours of their day tend to feel happier in their days and more satisfied with their lives overall.

CRediT authorship contribution statement

Tayler Bergstrom: Writing – review & editing, Writing – original draft, Visualization, Project administration, Investigation, Formal analysis, Data curation, Conceptualization. **Joseph Reiff:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Investigation, Conceptualization. **Cassie Mogilner:** Writing – review & editing, Writing – original draft, Resources, Conceptualization. **Hal Hershfield:** Writing – review & editing, Writing – original draft, Resources, Conceptualization.

Declaration of competing interest

We have no conflicts of interests to report. Portions of these findings were presented in a special session at the 2020 Society for Consumer Psychology in Huntington Beach, California, United States. This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. The authors thank Angeline Kukreja for her assistance in proofreading the paper. Preregistrations, study materials, data, and code are all available at https://researchbox/org/1218.

Data availability

The link to our open data is here: https://researchbox.org/1218.

Appendix

The appendices for this article can be found online at https://doi.org/10.1016/j.paid.2024.112663.

References

Aeon, B., Faber, A., & Panaccio, A. (2021). Does time management work? A meta-analysis. *PLoS One, 16*(1), Article e0245066. https://doi.org/10.1371/journal.pone.0245066

Aron, A., Paris, M., & Aron, E. N. (1995). Falling in love: Prospective studies of self-concept change. *Journal of Personality and Social Psychology, 69*(6), 1102–1112. https://doi.org/10.1037/0022-3514.69.6.1102

Avnet, T., & Sellier, A. L. (2011). Clock time vs. event time: Temporal culture or self-regulation? *Journal of Experimental Social Psychology, 47*(3), 665–667. https://doi.org/10.1016/j.jesp.2011.01.006

Ayduk, Ö., & Kross, E. (2010). From a distance: Implications of spontaneous self-distancing for adaptive self-reflection. *Journal of Personality and Social Psychology, 98*(5), 809–829. https://doi.org/10.1037/a0019205

Bazerman, M. H., Tenbrunsel, A. E., & Wade-Benzoni, K. (1998). Negotiating with yourself and losing: Making decisions with competing internal preferences. *Academy of Management Review, 23*(2), 225–241. https://doi.org/10.2307/259372

Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A primer. *Frontiers in Public Health, 6*, 149.

Boroditsky, L. (2018). Language and the construction of time through space. *Trends in Neurosciences, 41*(10), 651–653. https://doi.org/10.1016/j.tins.2018.08.004

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822–848. https://doi.org/10.1037/0022-3514.84.4.822

Buhrmester, M., Kwang, T., & Gosling, S. D. (2016). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality data? In A. E. Kazdin (Ed.), *Methodological issues and strategies in clinical research* (pp. 133–139). American Psychological Association. https://doi.org/10.1037/14805-009.

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously: A theory of socioemotional selectivity. *American Psychologist, 54*(3), 165–181. https://doi.org/10.1037//0003-066x.54.3.165

Carstensen, L. L., & Lang, F. R. (1996). *Future time perspective scale* [Unpublished manuscript]. Department of Psychology, Stanford University. https://doi.org/10.1037/t31314-000.

Chen, M. K. (2013). The effect of language on economic behavior: Evidence from savings rates, health behaviors, and retirement assets. *American Economic Review, 103*(2), 690–731. https://doi.org/10.1257/aer.103.2.690

Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. *Psychological Assessment, 7*(3), 309–319. https://doi.org/10.1037/1040-3590.7.3.309

Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research and Evaluation, 10*(1), 7. https://doi.org/10.7275/jyj1-4868

Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. *Psychological Bulletin, 52*(4), 281–302. https://doi.org/10.1037/h0040957

Dai, H., Milkman, K. L., & Riis, J. (2014). The fresh start effect: Temporal landmarks motivate aspirational behavior. *Management Science, 60*(10), 2563–2582. https://doi.org/10.1287/mnsc.2014.1901

Darley, J. M., & Batson, C. D. (1973). "From Jerusalem to Jericho": A study of situational and dispositional variables in helping behavior. *Journal of Personality and Social Psychology, 27*(1), 100–108. https://doi.org/10.1037/h0034449

DeVoe, S. E. (2019). The psychological consequence of thinking about time in terms of money. *Current Opinion in Psychology, 26*, 103–105. https://doi.org/10.1016/j.copsyc.2018.12.018

DeVoe, S. E., & House, J. (2012). Time, money, and happiness: How does putting a price on time affect our ability to smell the roses? *Journal of Experimental Social Psychology, 48*(2), 466–474. https://doi.org/10.1016/j.jesp.2011.11.012

DeVoe, S. E., & Pfeffer, J. (2010). The stingy hour: How accounting for time affects volunteering. *Personality and Social Psychology Bulletin, 36*(4), 470–483. https://doi.org/10.1177/0146167209359699

Dhar, R., & Kim, E. (2007). Seeing the forest or the trees: Implications of construal level theory for consumer choice. *Journal of Consumer Psychology, 17*(2), 96–100. https://doi.org/10.1016/S1057-7408(07)70014-1

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment, 49*(1), 71–75. https://doi.org/10.1207/s15327752jpa4901_13

Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D. W., Oishi, S., & Biswas-Diener, R. (2010). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research, 97*, 143–156. https://doi.org/10.1007/s11205-009-9493-y

Ersner-Hershfield, H., Garton, M. T., Ballard, K., Samanez-Larkin, G. R., & Knutson, B. (2009). Don't stop thinking about tomorrow: Individual differences in future self-continuity account for saving. *Judgment and Decision Making, 4*(4), 280. https://doi.org/10.1017/S1930297500003855

Etkin, J. (2019). Time in relation to goals. *Current Opinion in Psychology, 26*, 32–36. https://doi.org/10.1016/j.copsyc.2018.04.013

Etkin, J., Evangelidis, I., & Aaker, J. (2015). Pressed for time? Goal conflict shapes how time is perceived, spent, and valued. *Journal of Marketing Research, 52*(3), 394–406. https://doi.org/10.1509/jmr.14.0130

Galinsky, A. D., Ku, G., & Wang, C. S. (2005). Perspective-taking and self-other overlap: Fostering social bonds and facilitating social coordination. *Group Processes & Intergroup Relations, 8*(2), 109–124. https://doi.org/10.1177/1368430205051060

Giurge, L. M., Whillans, A. V., & Yemiscigil, A. (2021). A multicountry perspective on gender differences in time use during COVID-19. *Proceedings of the National Academy of Sciences, 118*(12). https://doi.org/10.1073/pnas.2018494118

Häfner, A., & Stock, A. (2010). Time management training and perceived control of time at work. *The Journal of Psychology, 144*(5), 429–447. https://doi.org/10.1080/00223980.2010.496647

Hamermesh, D. S. (2019). Time use—Economic approaches. *Current Opinion in Psychology, 26*, 1–4. https://doi.org/10.1016/j.copsyc.2018.03.010

Hamermesh, D. S., & Lee, J. (2007). Stressed out on four continents: Time crunch or yuppie kvetch? *Review of Economics and Statistics, 89*(2), 374–383. https://doi.org/10.1162/rest.89.2.374

Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature, 466*(29). https://doi.org/10.1038/466029a

Hershfield, H. (2023). *Your future self: How to make tomorrow better today*. Brown Spark: Little.

Hershfield, H. E., & Maglio, S. J. (2020). When does the present end and the future begin? *Journal of Experimental Psychology: General, 149*(4), 701–718. https://doi.org/10.1037/xge0000681

Hershfield, H. E., Mogilner, C., & Barnea, U. (2016). People who choose time over money are happier. *Social Psychological and Personality Science, 7*(7), 697–706. https://doi.org/10.1177/1948550616649239

Höge, T. (2009). When work strain transcends psychological boundaries: An inquiry into the relationship between time pressure, irritation, work-family conflict and psychosomatic complaints. *Stress and Health, 25*(1), 41–51. https://doi.org/10.1002/smi.1226

Holmes, C. M. (2022). *Happier hour: How to beat distraction, expand your time, and focus on what matters most.* Gallery Books.

Kahneman, D., Krueger, A. B., Schkade, D. A., Schwarz, N., & Stone, A. A. (2004). A survey method for characterizing daily life experience: The day reconstruction method. *Science, 306*(5702), 1776–1780. https://doi.org/10.1126/science.1103572

Kasser, T., & Sheldon, K. M. (2009). Time affluence as a path toward personal happiness and ethical business practice: Empirical evidence from four studies. *Journal of Business Ethics, 84*(S2), 243–255. https://doi.org/10.1007/s10551-008-9696-1

Khan, U., Dhar, R., & Wertenbroch, K. (2005). A behavioral decision theory perspective on hedonic and utilitarian choice. In S. Ratneshwar, & D. G. Mick (Eds.), *Inside*

consumption (pp. 166–187). Routledge. https://doi.org/10.4324/9780203481295-14.
King, L. A., Heintzelman, S. J., & Ward, S. J. (2016). Beyond the search for meaning: A contemporary science of the experience of meaning in life. *Current Directions in Psychological Science, 25*(4), 211–216. https://doi.org/10.1177/0963721416656354
Kivetz, R., & Keinan, A. (2006). Repenting hyperopia: An analysis of self-control regrets. *Journal of Consumer Research, 33*(2), 273–282. https://doi.org/10.1086/506308
Koch, A. K., & Nafziger, J. (2019). Correlates of narrow bracketing. *The Scandinavian Journal of Economics, 121*(4), 1441–1472. https://doi.org/10.1111/sjoe.12311
Kotabe, H. P., & Hofmann, W. (2015). On integrating the components of self-control. *Perspectives on Psychological Science, 10*(5), 618–638. https://doi.org/10.1177/1745691615593382
Kross, E., Ayduk, O., & Mischel, W. (2005). When asking "why" does not hurt distinguishing rumination from reflective processing of negative emotions. *Psychological Science, 16*(9), 709–715. https://doi.org/10.1111/j.1467-9280.2005.01600.x
Lang, F. R., & Carstensen, L. L. (2002). Time counts: Future time perspective, goals, and social relationships. *Psychology and Aging, 17*(1), 125–139. https://doi.org/10.1037/0882-7974.17.1.125
Loewenstein, G., & Thaler, R. H. (1989). Anomalies: Intertemporal choice. *Journal of Economic Perspectives, 3*(4), 181–193. https://doi.org/10.1257/jep.3.4.181
Macan, T. H. (1994). Time management: Test of a process model. *Journal of Applied Psychology, 79*(3), 381–391. https://doi.org/10.1037/0021-9010.79.3.381
Mackerron, G., & Mourato, S. (2013). Happiness is greater in natural environments. *Global Environmental Change, 23*(5), 992–1000. https://doi.org/10.1016/j.gloenvcha.2013.03.010
Mancini, A. D. (2019). When acute adversity improves psychological health: A social–contextual framework. *Psychological Review, 126*(4), 486–505. https://doi.org/10.1037/rev0000144
Milkman, K. L., Rogers, T., & Bazerman, M. H. (2008). Harnessing our inner angels and demons: What we have learned about want/should conflicts and how that knowledge can help us reduce short-sighted decision making. *Perspectives on Psychological Science, 3*(4), 324–338. https://doi.org/10.1111/j.1745-6924.2008.00083.x
Mogilner, C. (2010). The pursuit of happiness: Time, money, and social connection. *Psychological Science, 21*(9), 1348–1354. https://doi.org/10.1177/0956797610380696
Mogilner, C. (2019). It's time for happiness. *Current Opinion in Psychology, 26*, 80–84. https://doi.org/10.1016/j.copsyc.2018.07.002
Mogilner, C., Aaker, J. L., & Pennington, G. L. (2008). Time will tell: The distant appeal of promotion and imminent appeal of prevention. *Journal of Consumer Research, 34*(5), 670–681. https://doi.org/10.1086/521901
Mogilner, C., Chance, Z., & Norton, M. I. (2012). Giving time gives you time. *Psychological Science, 23*(10), 1233–1238. https://doi.org/10.1177/0956797612442551
Mogilner, C., Hershfield, H. E., & Aaker, J. (2017). Rethinking time: Implications for well-being. *Consumer Psychology Review, 1*(1), 41–53. https://doi.org/10.1002/arcp.1003
Mogilner, C., Shiv, B., & Iyengar, S. S. (2013). Eternal quest for the best: Sequential (vs. simultaneous) option presentation undermines choice commitment. *Journal of Consumer Research, 39*(6), 1300–1312. https://doi.org/10.1086/668534
Mojza, E. J., Sonnentag, S., & Bornemann, C. (2011). Volunteer work as a valuable leisure-time activity: A day-level study on volunteer work, non-work experiences, and well-being at work. *Journal of Occupational and Organizational Psychology, 84*(1), 123–152. https://doi.org/10.1348/096317910X485737
Monga, A., May, F., & Bagchi, R. (2017). Eliciting time versus money: Time scarcity underlies asymmetric wage rates. *Journal of Consumer Research, 44*(4), 833–852. https://doi.org/10.1093/jcr/ucx066
Mullainathan, S., & Sharif, E. (2013). *Scarcity: Why having too little means so much*. Times Books.
Newport, F. (2017). *The Gallup poll: Public opinion 2015*. Rowman & Littlefield.
Pennington, G. L., & Roese, N. J. (2003). Regulatory focus and temporal distance. *Journal of Experimental Social Psychology, 39*(6), 563–576. https://doi.org/10.1016/S0022-1031(03)00058-1
Rabin, M., & Weizsäcker, G. (2009). Narrow bracketing and dominated choices. *American Economic Review, 99*(4), 1508–1543. https://doi.org/10.1257/aer.99.4.1508
Rosseel, Y. (2012). lavaan: An R package for structural equation modeling. *Journal of Statistical Software, 48*(2), 1–36. https://doi.org/10.18637/jss.v048.i02
Rudd, M. (2019). Feeling short on time: Trends, consequences, and possible remedies. *Current Opinion in Psychology, 26*, 5–10. https://doi.org/10.1016/j.copsyc.2018.04.007
Sellier, A.-L., & Avnet, T. (2014). So what if the clock strikes? Scheduling style, control, and well-being. *Journal of Personality and Social Psychology, 107*(5), 791–808. https://doi.org/10.1037/a0038051
Sharif, M. A., Mogilner, C., & Hershfield, H. E. (2021). Having too little or too much time is linked to lower subjective well-being. *Journal of Personality and Social Psychology, 121*(4), 933–947. https://doi.org/10.1037/pspp0000391
Sheldon, K. M., Cummins, R., & Kamble, S. (2010). Life balance and well-being: Testing a novel conceptual and measurement approach. *Journal of Personality, 78*(4), 1093–1134. https://doi.org/10.1111/j.1467-6494.2010.00644.x
Sheldon, K. M., & Niemiec, C. P. (2006). It's not just the amount that counts: Balanced need satisfaction also affects well-being. *Journal of Personality and Social Psychology, 91*(2), 331–341. https://doi.org/10.1037/0022-3514.91.2.331
Soman, D., Ainslie, G., Frederick, S., Li, X., Lynch, J., Moreau, P., Mitchell, A., Read, D., Sawyer, A., Trope, Y., Wertenbroch, K., & Zauberman, G. (2005). The psychology of intertemporal discounting: Why are distant events valued differently from proximal ones? *Marketing Letters, 16*(3/4), 347–360. https://doi.org/10.1007/s11002-005-5897-x
Spiller, S. A. (2011). Opportunity cost consideration. *Journal of Consumer Research, 38*(4), 595–610. https://doi.org/10.1086/660045
Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology, 53*(1), 80–93. https://doi.org/10.1037/0022-0167.53.1.80
Strazdins, L., Griffin, A. L., Broom, D. H., Banwell, C., Korda, R., Dixon, J., … Glover, J. (2011). Time scarcity: Another health inequality? *Environment and Planning A: Economy and Space, 43*(3), 545–559. https://doi.org/10.1068/a4360
Strohminger, N., & Nichols, S. (2014). The essential moral self. *Cognition, 131*(1), 159–171. https://doi.org/10.1016/j.cognition.2013.12.005
Sussman, A. B., & Alter, A. L. (2012). The exception is the rule: Underestimating and overspending on exceptional expenses. *Journal of Consumer Research, 39*(4), 800–814. https://doi.org/10.1086/665833
Tonietto, G. N., & Malkoc, S. A. (2016). The calendar mindset: Scheduling takes the fun out and puts the work in. *Journal of Marketing Research, 53*(6), 922–936. https://doi.org/10.1509/jmr.14.0591
Tonietto, G. N., Malkoc, S. A., Reczek, R. W., & Norton, M. I. (2021). Viewing leisure as wasteful undermines enjoyment. *Journal of Experimental Social Psychology, 97*, Article 104198. https://doi.org/10.1016/j.jesp.2021.104198
Trope, Y., & Liberman, N. (2010). Construal-level theory of psychological distance. *Psychological Review, 117*(2), 440–463. https://doi.org/10.1037/a0018963
Trupia, M., Engeler, I., & Mogilner, C. (2024). Time poverty. In J. Gollenhofer, R. Hofstetter, & T. Tomczak (Eds.), *Encyclopedia of consumer behavior*. Edward Elgar Publishing.
Vallacher, R. R., & Wegner, D. M. (1987). What do people think they're doing? Action identification and human behavior. *Psychological Review, 94*(1), 3–15. https://doi.org/10.1037/0033-295X.94.1.3
Vallacher, R. R., & Wegner, D. M. (1989). Levels of personal agency: Individual variation in action identification. *Journal of Personality and Social Psychology, 57*(4), 660–671. https://doi.org/10.1037/0022-3514.57.4.660
Vohs, K. D., Aaker, J. L., & Catapano, R. (2019). It's not going to be that fun: Negative experiences can add meaning to life. *Current Opinion in Psychology, 26*, 11–14. https://doi.org/10.1016/j.copsyc.2018.04.014
Whillans, A. V., Weidman, A. C., & Dunn, E. W. (2016). Valuing time over money is associated with greater happiness. *Social Psychological and Personality Science, 7*(3), 213–222. https://doi.org/10.1177/1948550615623842
Yan, L. L., Liu, K., Matthews, K. A., Daviglus, M. L., Ferguson, T. F., & Kiefe, C. I. (2003). Psychosocial factors and risk of hypertension: The coronary artery risk development in young adults (CARDIA) study. *JAMA, 290*(16), 2138–2148. https://doi.org/10.1001/jama.290.16.2138
Zhang, J. W., Howell, R. T., & Bowerman, T. (2013). Validating a brief measure of the Zimbardo Time Perspective Inventory. *Time & Society, 22*(3), 391–409. https://doi.org/10.1177/0961463X12441174
Zhu, M., Yang, Y., & Hsee, C. K. (2018). The mere urgency effect. *Journal of Consumer Research, 45*(3), 673–690. https://doi.org/10.1093/jcr/ucy008
Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: A valid, reliable individual-differences metric. *Journal of Personality and Social Psychology, 77*(6), 1271–1288. https://doi.org/10.1037/0022-3514.77.6.1271
Zimbardo, P. G., & Boyd, J. N. (2008). *The time paradox: The new psychology of time that will change your life*. Free Press.