

Happiness—To Enjoy Now or Later? Consequences of Delaying Happiness and Living in the Moment Beliefs

Lora E. Park¹, Kentaro Fujita², Kristin Naragon-Gainey^{1, 3}, Tracy M. Radvick¹, Han Young Jung^{1, 4}, Ji Xia¹, Deborah E. Ward¹, Elaine Paravati¹, Jennifer Weng¹, Alessia Italiano¹, and Austin Valvo⁵

¹ Department of Psychology, University at Buffalo, The State University of New York

² Department of Psychology, The Ohio State University

³ School of Psychological Science, University of Western Australia

⁴ Department of Marketing, University of Minnesota Carlson School of Management

⁵ Department of Organizational Science, The University of North Carolina at Charlotte

How do people think about happiness? Is it something best enjoyed as an investment over time, or is it something fleeting that should be savored? When people view happiness as an investment, they may endorse *delaying happiness* (DH) – the belief that working hard and sacrificing opportunities for happiness now will contribute to greater future happiness. When people view happiness as fleeting, they may endorse *living in the moment* (LM)—the belief that one should seize proximal opportunities to experience happiness now, rather than later. Using a mix of cross-sectional, meta-analytic (Studies 1, 2a, 2b, 2c), experimental (Study 3), and daily diary methods (Study 4), people who endorsed DH or LM beliefs anticipated more positive affect upon goal attainment and experienced greater well-being, but only DH was related to more negative affect when pursuing nonfocal goals and less delay discounting of future rewards. Implications for self-regulation and emotion are discussed.

Keywords: goal pursuit, happiness, motivation, self-regulation, well-being

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Many of the decisions that people make in everyday life are aimed at maximizing happiness. From choosing what to eat and

drink, to deciding how to spend one's time and money, people adopt goals and take actions that they *think* will bring them happiness, whether immediate or delayed. To date, research in this area has focused on who, when, and why some people prioritize hedonic rewards in the present whereas others prefer future rewards (Carstensen, 2006; Fujita et al., 2006; Kivetz & Keinan, 2006; Köpetz & Orehek, 2015; Labroo & Mukhopadhyay, 2009; Metcalfe & Mischel, 1999; Mischel et al., 1989; Woolley & Fishbach, 2016). Missing from this literature, however, is how people's lay theories of happiness as an experience that is fleeting versus an investment—and their corresponding beliefs about Delaying Happiness versus Living in the Moment—guide their goal-related affect, behavior, and well-being.

When people hold a lay theory of happiness as an investment, they are expected to pass up opportunities to be happy today to pursue important focal goals that will contribute to greater happiness in the future. Just as individuals may invest their money in a savings account to grow their finances over time, those who view happiness as an investment may endorse *delaying happiness* (DH)—the belief that working hard and making sacrifices to make progress on one's focal goals will accrue greater happiness someday, rather than today. We define *focal goals* as mental representations of desired end-states that involve investing one's time, attention, and resources to achieve valued long-term outcomes (Kruglanski et al., 2002). In other words, focal goals reflect important outcomes that an individual is striving to achieve over time. Such

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Lora E. Park  <https://orcid.org/0000-0002-2779-3034>

Kristin Naragon-Gainey  <https://orcid.org/0000-0002-2245-6880>

Tracy M. Radvick  <https://orcid.org/0000-0003-1086-3080>

Han Young Jung  <https://orcid.org/0000-0003-1698-8431>

Ji Xia  <https://orcid.org/0000-0002-8021-9410>

Deborah E. Ward  <https://orcid.org/0000-0002-2574-4861>

Elaine Paravati  <https://orcid.org/0000-0001-7924-534X>

Jennifer Weng  <https://orcid.org/0000-0003-4905-9014>

Alessia Italiano  <https://orcid.org/0000-0002-5410-5671>

Austin Valvo  <https://orcid.org/0000-0002-8199-0573>

Tracy M. Radvick is now at the Department of Psychology, Stony Brook University. Deborah E. Ward is now at the Department of Psychology, Saginaw Valley State University. Elaine Paravati is now at the Department of Psychology, Hamilton College.

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Correspondence concerning this article should be addressed to Lora E. Park, Department of Psychology, University at Buffalo, The State University of New York, 344 Park Hall, Buffalo, NY 14260, United States. Email: lorapark@buffalo.edu

goals could include getting good grades, earning a degree, starting a business, losing weight, running a marathon, buying a house, or paying off credit card debt. In any given situation, people can have focal goals that may or may not compete with salient, context-specific, nonfocal goals.

In contrast, when people hold a lay theory of happiness as fleeting, they may view their choices and actions as contributing to their *current* happiness, rather than being concerned about being happy in the future. Just as individuals may eat an ice cream cone because they know it will soon melt, those who view happiness as fleeting may endorse *living in the moment* (LM)—the belief that one should seize proximal opportunities to experience happiness now, before the opportunity passes, versus later. While lay theories of happiness as an investment versus fleeting reflect broad, general assumptions about the nature of happiness, DH and LM reflect specific *beliefs* about the link between goal pursuit and happiness and may therefore be closely tied to people's goal-related behavior, anticipated affective responses to goal pursuit, and well-being.

Lay Theories of Happiness and DH Versus LM Beliefs

Lay theories are informal, ontological assumptions about the social world that provide a framework for meaning (Plaks et al., 2009). Lay theories of affect reflect generalized beliefs about the nature of emotional experience that influence how people respond to the world. For example, individuals differ in their theories about the progression of affect—as either continuing or diminishing—which leads to longer or shorter estimates of the duration of affect (Igou, 2004). When people view affect as durable, they assume that emotional reactions to positive and negative events will persist over time. For example, assistant professors overestimate the duration for which getting tenure would make them happy, or being rejected for tenure would make them unhappy (Gilbert et al., 1998). When people hold lay theories of affect as long-lasting (vs. transient), they regulate their decision-making and behavior to either restore or sustain positive affect (Labroo & Mukhopadhyay, 2009). People can also vary in the degree to which they perceive happiness to be controllable, flexible, and internal, which relate to how empathic they feel toward others who are unhappy and in need of help (Tullett & Plaks, 2016).

Building on, but distinct from, these lay theories of affect, we propose that people can view happiness as something to be *invested in* over time, versus something *fleeting* that should be consumed before the opportunity passes. When people think of happiness in these generalized ways, they may be more (or less) likely to believe in DH (or LM), which reflect specific beliefs about how current goal pursuits connect to the higher-order goal of happiness. When people view happiness as an investment, they may endorse DH because they think they can obtain more intense and prolonged happiness someday, rather than today, if they prioritize their focal goal pursuits. When people think of happiness as fleeting, they may endorse LM and believe that they can experience happiness today, rather than in the distant future, by pursuing nonfocal goal activities that offer fun and enjoyment in the moment.

Regarding the association between DH and LM, we did not have strong a priori assumptions about the relationship between these beliefs. DH and LM could represent two distinct, orthogonal

constructs, such that individuals typically endorse DH beliefs, LM beliefs, or both to varying degrees depending on the situation. Alternatively, DH and LM could represent opposite ends of the same continuum, such that individuals who strongly endorse DH are less likely to endorse LM and vice-versa.

DH and LM Beliefs Predict Goal Pursuit, Anticipated Affect, and Well-Being

Lay theories of happiness—and corresponding beliefs about DH and LM—are likely to shape people's orientation toward future versus current opportunities to experience happiness.

If DH reflects the belief that investing in long-term focal goals will grow happiness over time, then it should predict greater time and effort spent currently on focal goal pursuit, greater anticipated positive affect from attaining such goals, and more anticipated negative affect from engaging in nonfocal goal activities. In contrast, if LM reflects the belief that happiness is to be enjoyed now, but not later, then it may predict greater involvement in nonfocal goal activities, less anticipated negative affect from engaging in nonfocal goals, and greater current well-being.

Conceptually, nonfocal goals are thought to be salient opportunities to satisfy immediate concerns or desires. In operationalizing this construct, we framed nonfocal goal pursuit in terms of engaging in fun and enjoyable activities instead of working toward one's focal goals. Theoretically, however, nonfocal goals do not always have to be fun or enjoyable, although they often are. For example, cleaning one's house may not be fun, but doing so may satisfy the immediate urge for tidiness.

Focal (Versus Nonfocal) Goal Pursuit

Much of people's everyday activities are organized around goals, which contain both immediate and delayed rewards (Woolley & Fishbach, 2016). Individuals not only attend to desired end-states but also to specific plans, actions, and means that enable them to achieve their goals. We conceptualize focal goals as prioritization of long-term outcomes that often require many steps to achieve, whereas nonfocal goals reflect salient opportunities to satisfy immediate concerns or desires. Accordingly, DH and LM beliefs are likely to predict the types of goal-related activities people pursue. For those who endorse DH, goal pursuits may be tied to investing in future happiness versus happiness in the moment.

Rather than engaging in nonfocal goal activities, which represent “lost” or “wasted” opportunities to increase happiness, those who endorse DH may choose to work hard and make sacrifices today toward pursuing focal goals that promise greater happiness over time. People often make sacrifices and trade-offs between goals. For example, those in demanding careers may sacrifice time at home, sleep, leisure activities, or relaxation to fulfill work-related goals (Barnett & Rivers, 1996; Mennino & Brayfield, 2002). We propose that individuals who believe in DH are especially likely to make sacrifices—to forego nonfocal goal opportunities in the here-and-now to instead devote their time, attention, and resources to obtaining delayed rewards. Consistent with this idea, research on goal shielding suggests that people strive to protect their pursuit of focal goals from unwanted distractions, by reducing conflicting demands on their attention and behavior (Gollwitzer & Sheeran, 2006). Similarly, research on hyperopia

shows that individuals who are devoted to their long-term goals sacrifice their ability to enjoy current rewards, and when they do indulge, their guilt about doing so detracts from the pleasure of the experience (Kivetz & Keinan, 2006). Although making sacrifices may facilitate progress on one's focal goals, doing so may come at a cost. For example, a longitudinal study of college students found that those who sacrificed basic psychological need satisfaction showed greater psychological distress over time (Holding et al., 2020). Thus, when individuals endorse DH and pass up on current activities to experience happiness, they may miss out on opportunities for enhancing their well-being because they are more focused on securing higher levels of happiness in the future.

In contrast, those who endorse LM assume that pursuing happiness by "consuming" it as the opportunity arises is the most effective way to experience happiness. They may therefore pursue activities that afford greater value in the here-and-now, such as engaging in fun, enjoyable activities that are not necessarily tied to their long-term focal goals.

Anticipated Affect

In addition to goal-related activities, DH and LM beliefs may predict anticipated affective reactions to goal pursuit. When people perceive events as facilitating (vs. hindering) goal progress, they experience positive (vs. negative) affect (Carver & Scheier, 1990). People can also experience self-conscious emotions, such as pride, when they direct attention inward and perceive their current self-representations to align with desired goals or identities. Because people who endorse DH think that pursuing focal goals today will contribute to future happiness, DH should be related to greater expected happiness and pride upon achieving one's focal goals. In contrast, those who endorse LM may not expect to feel more positive affect when achieving their focal goal, because any happiness that results from attaining such goals may be viewed as fleeting and thus, cannot be saved up or invested in over time.

Although DH may predict more positive affect upon achieving focal goals, such beliefs may also predict feeling more anxious, guilty, and regretful when engaging in nonfocal goals that take time away from focal goal pursuits. Indeed, people feel sad and anxious when they perceive discrepancies between their current self and who they want or ought to be (Higgins, 1987). They also feel guilty when engaging in behaviors that compromise their standards of conduct and regret—which implies self-blame and a fault in personal action (Connolly & Zeelenberg, 2002)—when perceiving lost opportunities for growth or improvement.

For those who endorse DH, happiness is the product of investing in one's focal goals. Thus, any deviation from this path may produce negative affect because one has sacrificed opportunities to contribute to additional happiness and may therefore reflect wasted time. In contrast, those who endorse LM may prioritize the happiness they can experience and maintain in each moment. Thus, these individuals may not experience negative affect when pursuing nonfocal goals, because these activities can contribute to in-the-moment experiences of happiness.

Well-Being

Finally, DH and LM beliefs may be differentially related to well-being. Those who endorse DH may not experience greater current well-being, as they are perpetually focused on making

progress on focal goals and sacrificing current opportunities for happiness to secure higher levels of future happiness. These individuals may also experience more negative affect when engaging in nonfocal goals, which could detract from their well-being. Indeed, people may postpone engaging in pleasurable activities that are not directly tied to their primary goal pursuits, resulting in missed opportunities for positive hedonic experiences. For example, individuals with hyperopia, who show "excessive psychological farsightedness" and overcontrol of behavior are less likely to engage in pleasurable activities, and if they do, require greater justification for license to indulge (Haws & Poynor, 2008; Kivetz & Keinan, 2006). DH is similar to hyperopia in that the focus is on making progress toward focal goals, which may come at the expense of engaging in nonfocal goal activities and experiencing well-being. However, a key difference is that although DH reflects beliefs about the link between self-regulation and future happiness, postponement of pleasurable activities and indulgences may be a specific consequence of DH beliefs. An alternative possibility is that DH beliefs predict greater well-being, based on past research showing that related constructs, such as self-control and delay of gratification, are associated with better psychological outcomes, such as less psychopathology, higher self-esteem (Tangney et al., 2004), better cognitive and social competencies, and ability to handle stress (Mischel et al., 1988).

People with LM beliefs are expected to show greater well-being because their focus is on finding opportunities to experience happiness and enjoyment currently. As mentioned earlier, people who endorse LM are not expected to experience negative affect when engaging in nonfocal goal activities, which could be one route through which those with LM beliefs take advantage of proximal opportunities to experience well-being. Indeed, research suggests that impulsive behavior may at times be beneficial, because it enables individuals to use the best means available to satisfy salient, short-term goals (Jia et al., 2019; Köpetz et al., 2018; Rawn & Vohs, 2011). For example, someone who is feeling famished might benefit from eating whatever food is available, rather than thinking about long-term consequences of eating poorly.

Because those with LM beliefs think that happiness is impermanent and should be enjoyed immediately, they may not be as committed to their distant focal goals, as opportunities in the present may be just as valuable in producing happiness as opportunities in the future. Thus, although striving to achieve happiness in the moment may appear myopic and shortsighted, doing so may be adaptive for maximizing well-being for those who believe in LM. We therefore predicted that LM would be related to greater well-being, whereas DH may be unrelated to well-being.

DH, LM, and Related Constructs

We expected DH and LM to differentially predict how people spend their time prioritizing and pursuing goals, their anticipated affective reactions to goal pursuit, and their well-being. Moreover, if there is something unique about DH and LM, then these beliefs should predict outcomes even after controlling for variables that are likely to be related to these measures. Specifically, DH beliefs may be related to grit, which reflects perseverance and passion for long-term goals in the face of obstacles and setbacks (Duckworth et al., 2007). DH should also be related to a future focus, which involves attention to future plans and outcomes (Shipp et al.,

2009) and to consideration of future consequences (Strathman et al., 1994), which emphasizes delayed versus immediate concerns.

DH should be positively related to self-control—the ability to regulate one’s behavior and override temptations to achieve long-term goals (Tangney et al., 2004)—and to conscientiousness—being self-disciplined, dependable, and organized (Gosling et al., 2003), which likely aids in the fulfillment of focal goals. DH should also be associated with the Protestant Ethic, in which personal success is thought to be due to hard work and self-discipline (Mirels & Garrett, 1971). Furthermore, because DH links the pursuit of focal goals to future happiness, it should be positively related to delay of gratification—postponing present rewards to obtain greater rewards at a later time (Mischel et al., 1989). If people think that happiness is an investment and endorse DH, they may focus on long-term rewards and be better at delaying gratification.

It is important to note that delay of gratification refers to an outcome or behavior in which one prioritizes larger-later over smaller-immediate rewards. Self-report scales of delay of gratification typically reflect people’s perception that they do this on a regular basis, or their perceptions of their history of engaging in this behavior. DH, by contrast, refers to the *motivation* for pursuing immediate versus delayed rewards. Thus, these latter beliefs should give rise to the former. In other words, delay of gratification reflects perceptions of behavior, whereas DH beliefs target the reasoning for *why* individuals may engage in such behaviors in the first place. And although DH beliefs may motivate attempts at delay of gratification, motivation may not always translate from intention into action. Other self-regulatory factors may contribute to delay of gratification, such as cognitive capacity (e.g., Miyake & Friedman, 2012) or knowledge of self-regulatory strategies (Fujita et al., 2020; Scholer et al., 2018).

Whereas people who believe in DH prioritize long-term focal goals, those who believe in LM are oriented toward pursuing salient opportunities to experience happiness in the immediate context, because those opportunities are thought to be fleeting. Thus, LM beliefs should be associated with constructs reflecting attention to the here-and-now, such as present focus, mindfulness, and impulsivity. However, if LM is unique, then it should predict the outcomes of interest above and beyond these related constructs. Present focus involves directing one’s attention and awareness to current situations (Shipp et al., 2009), and mindfulness involves doing so with an open and nonjudgmental attitude (Brown & Ryan, 2003). Similarly, people with LM beliefs should be attuned to current opportunities for experiencing happiness and enjoyment.

LM should also be related to impulsivity, which focuses on current needs and desires, rather than weighing future consequences (Patton et al., 1995). Indeed, researchers have suggested that impulsivity may not represent a failure of self-control but instead reflect strategic attempts to achieve salient goals as they arise in the moment (Jia et al., 2019; Köpetz et al., 2018; Rawn & Vohs, 2011). Similarly, people who believe in LM may self-regulate in ways that maximize their chances of experiencing happiness currently, rather than investing in future happiness. However, whereas impulsivity is a personality trait characterized by a lack of attention and focus, acting without forethought, and difficulty inhibiting behavioral impulses (Moeller et al., 2001; Patton et al., 1995), LM reflects cognitive *beliefs* that value and prioritize the here-and-now

because of the perceived impermanence of happiness. Thus, rather than being synonymous with impulsivity, LM may help to explain *why* some impulsive individuals act on the spur of the moment—not because they lack self-regulatory abilities or resources but because they think that happiness is transient and are thus motivated to seize opportunities to experience happiness as they arise.

Current Research

The purpose of the current research was threefold. First, we developed and validated measures of DH and LM beliefs to demonstrate their unique validity in predicting focal versus nonfocal goal pursuit, anticipated affective reactions to goal pursuit, and well-being (Studies 1, 2a, 2b, and 2c). We hypothesized that people with DH beliefs would spend more time on focal goal pursuits and anticipate feeling more positive affect upon achieving their focal goal, but anticipate feeling more negative affect when pursuing nonfocal activities that took time away from their focal goals. In contrast, we expected those with LM beliefs to pursue more nonfocal goal activities and to experience greater well-being. Study 2c further examined the role of DH and LM beliefs in behavioral decision-making by examining the extent to which people who endorsed these beliefs showed delay discounting—the tendency to discount future (monetary) rewards. We predicted that people who believed in DH would show less delay discounting, whereas those who endorsed LM would show more delay discounting.

Next, using experimental methods, we examined whether DH and LM beliefs were malleable and whether lay theories of happiness underlie these beliefs (Study 3). Although DH and LM are conceptualized as stable, trait-like beliefs, it is also possible that people’s endorsement of these beliefs may shift depending on situational cues. For example, just as individuals might chronically endorse positive or negative views about themselves in the form of trait self-esteem, their state self-esteem can fluctuate in response to external events (Heatherton & Polivy, 1991). Thus, one of the aims of the current studies was to examine whether people’s beliefs about DH and LM could be influenced in the moment and subsequently affect behavioral intentions and anticipated affect related to goal pursuit. Lastly, we examined how daily fluctuations in people’s DH and LM beliefs over time predicted their goal-related activities, actual experiences of positive and negative affect and well-being in everyday life (Study 4). All measures, data, and analysis scripts can be viewed on the Open Science Framework at https://osf.io/3wqtm/?view_only=a1a2f64e1ee648269ddff3ebacd4d. All of the studies reported in this article were conducted in accordance with the ethical standards for the treatment of human participants and were reviewed and approved by the Social and Behavioral Sciences Institutional Review Board at the University at Buffalo.

Study 1: Development and Validation of the DH Versus LM Beliefs Scale

Method

Participants and Procedure

Students ($N = 325$) from the introductory psychology subject pool at a large university completed the “Study of Goals and

Beliefs” for course credit. We sought to recruit at least 300 participants for Study 1 and Studies 2a–2c based on sample sizes of previous studies that developed and validated constructs similar to DH and LM. For example, prior studies in related areas had similar sample sizes in examining consideration of future consequences ($N = 138$ to 379 ; Strathman et al., 1994), self-control ($N = 255$ to 351 ; Tangney et al., 2004), delay of gratification ($N = 293$; Hoerger et al., 2011), impulsivity ($N = 248$ to 412 ; Patton et al., 1995), and mindfulness ($N = 313$; Brown & Ryan, 2003). Participants were excluded if they did not list any focal goal ($n = 2$) or requested to have their responses withdrawn at the end of the study ($n = 25$), leaving a final sample of 298. Demographics (gender, age, ethnicity) for this study and all subsequent studies are summarized in Table 1. Participants were first asked to list a focal goal and then answered questions pertaining to this goal to assess their DH beliefs. They then reported their LM beliefs, dependent measures, and individual difference covariates (see Methodology File in OSF for all measures).

Materials

Delaying Happiness. Generating items for the DH and LM scales consisted of two phases. First, the research team brainstormed a preliminary list of general themes and ideas that were thought to reflect DH and LM beliefs (see the online supplemental materials). Based on these ideas, the research team developed, refined, and agreed upon a final list of items that were intended to reflect each construct.¹ Ten items ($\alpha = .90$) reflected DH beliefs about the link between goal pursuit and future happiness (see Table 2). Specifically, participants were asked to think about an important goal that required them to work hard and make sacrifices to make progress toward this goal. They then reported how much they agreed with a series of statements while thinking about this focal goal. Sample items were, “It is worth sacrificing now for happiness in the future” and “I believe in working hard now to achieve future happiness, even if it means missing out on fun times” from 1 = *strongly disagree* to 7 = *strongly agree*. The three most common goals were academic (54%), job-related (22%), and health/fitness (7%).

Living in the Moment. Based on the procedures described previously, we developed ten items ($\alpha = .91$) to assess LM beliefs reflecting the importance of experiencing happiness in the here-and-now (see Table 2). Sample items were, “I want to seize the moment and enjoy life as much as possible now versus someday in the distant future,” and “I believe in enjoying life to the fullest now, because no one knows what the future may bring” from 1 = *strongly disagree* to 7 = *strongly agree*.

Dependent Measures

Focal Goal Pursuit. Participants reported how much time and effort they spent in an average week working on the focal goal they had written about earlier. The items were: “In an average week, how much time do you spend working toward this goal?” from 1 = *none of my time* to 7 = *all of my time*; “In an average week, how much work do you usually put in toward this goal?” from 1 = *no work at all* to 7 = *work extremely hard*, and “In an average week, how often do you make sacrifices (i.e., pass up on other potentially enjoyable activities) to pursue this goal?” from 1 = *never* to 7 = *always*. A principal axis factor analysis of the 3 items with promax rotation revealed a one-factor solution that

explained 75.2% of the variance. Items were standardized and averaged to reflect focal goal pursuit ($\alpha = .83$).

Nonfocal Goal Pursuit. Participants responded to the question, “In an average week, how often do you choose to participate in fun or enjoyable activities instead of working toward your personal goal?” (referring to the focal goal they listed earlier) from 1 = *never* to 7 = *always*.

Anticipated Positive Affect. Participants were asked to think about their focal goal and report how “happy” and “proud” they expected to feel in the future if they were to achieve this goal from 1 = *not at all* to 7 = *extremely* ($r = .78, p < .001$).

Anticipated Negative Affect. Participants reported how anxious, guilty, and regretful they would feel if they engaged in fun and enjoyable activities that took time away from their focal goal from 1 = *not at all* to 7 = *extremely*. A principal-axis factor analysis of the three items with promax rotation revealed a one-factor solution that explained 64.7% of the variance, so items were standardized and averaged together ($\alpha = .73$).

Well-Being. Participants responded to two items from the Subjective Happiness Scale (e.g., “In general, I consider myself . . .” 1 = *not a very happy person* to 7 = *a very happy person*, and “Compared with my peers, I consider myself . . .” 1 = *less happy* to 7 = *more happy*; Lyubomirsky & Lepper, 1999; $r = .64, p < .001$), the five-item Satisfaction with Life Scale (Diener et al., 1985; e.g., “I am satisfied with life,” $\alpha = .89$), and the eight-item Psychological Well-Being Scale (Diener et al., 2010), which assesses competence, meaning, purpose, relationships, and optimism from 1 = *strongly disagree* to 7 = *strongly agree* ($\alpha = .91$). All scales were correlated ($r_s = .51$ to $.63, p_s < .001$), so items were standardized and averaged to reflect well-being (15 items, $\alpha = .93$).²

Individual Difference Covariates

Grit. Participants completed the eight-item Grit Scale (e.g., “I often set a goal but later choose to pursue a different one,” reverse-scored; Duckworth & Quinn, 2009) from 1 = *not at all like me* to 5 = *very much like me* ($\alpha = .75$).

Consideration of Future Consequences. The Consideration of Future Consequences scale (Strathman et al., 1994) assesses how much individuals consider distant (vs. immediate) consequences of behaviors (e.g., “I think it is important to take warnings about negative outcomes seriously even if the negative outcome will not occur for many years,” 12 items, $\alpha = .82$) from 1 = *extremely uncharacteristic of me* to 5 = *extremely characteristic of me*.

Self-Control. Participants completed the Trait Self-Control Scale (e.g., “I do things that feel good in the moment but regret later on,” reverse-scored, Tangney et al., 2004) from 1 = *not at all like me* to 5 = *very much like me* (10 items, $\alpha = .82$).

Mindfulness. Participants completed the Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), which measures awareness of what is occurring in the present moment (e.g., “I find

¹ We held open the possibility that DH and LM were independent, so we assessed them as if they were. This allows the data to tell us, bottom up, whether or not they are independent without having to make a priori assumptions.

² We assessed two of the four items from the Subjective Happiness Scale because we wanted to keep the measures brief and felt that the two items were sufficiently face-valid to assess happiness.

Table 1
Descriptive Statistics for Participant Demographics Across Studies

Study	Final sample (Gender)	Source	Age	Ethnicity
Study 1	<i>N</i> = 298 (200 men, 98 women)	College students	<i>M</i> _{age} = 19.12, <i>SD</i> = 1.27	61.4% White, 21.8% Asian, 5.7% Black, 6.0% Hispanic, 5.0% other
Study 1 (test-retest reliability)	<i>N</i> = 300 (164 men, 133 women)	College students	<i>M</i> _{age} = 19.07, <i>SD</i> = 1.73	51.7% White, 28.2% Asian, 10.7% Black, 5.4% Hispanic, 4.0% other
Study 2a	<i>N</i> = 274 (124 men, 149 women, 1 other)	MTurk	<i>M</i> _{age} = 37.85, <i>SD</i> = 11.88	78.1% White, 6.9% Asian, 7.7% Black, 5.5% Hispanic, 1.8% other
Study 2b	<i>N</i> = 405 (71 men, 330 women, 3 other)	Research-Match	<i>M</i> _{age} = 54.15, <i>SD</i> = 14.64	92.3% White, 4.5% Black, 1.0% Asian, 1.0% Hispanic, 1.2% other
Study 2c	<i>N</i> = 402 (98 men, 296 women, 8 other)	Research-Match	<i>M</i> _{age} = 54.45, <i>SD</i> = 16.14	91.8% White, 2.7% Black, 1.2% Asian, 1.0% Hispanic, 3.3% other
Study 3	<i>N</i> = 517 (257 men, 257 women, 2 other)	College students	<i>M</i> _{age} = 18.92, <i>SD</i> = 1.75	49.1% White, 11.1% Black, 30% Asian, 6.8% Hispanic, 3% other
Study 4	<i>N</i> = 148 (70 men, 77 women, 1 other)	College students	<i>M</i> _{age} = 18.88, <i>SD</i> = 1.14	47.9% White, 34.9% Asian, 8.9% Black, 6.2% Hispanic, 2.1% other

myself doing things without paying attention”) from 1 = *almost always* to 6 = *almost never* (15 items, $\alpha = .88$).

Conscientiousness. Participants completed items assessing conscientiousness from the Ten-Item Personality Inventory (Gosling et al., 2003), which assesses the Big 5 Personality dimensions. The items were: “I see myself as . . .” “Dependable, self-disciplined” and “Disorganized, careless” (reversed) from 1 = *disagree strongly* to 7 = *agree strongly* ($r = .30, p < .001$). This measure has been shown to have good construct validity and was selected because it was a short measure to reduce redundancy in the items and participant fatigue.

Protestant Ethic. Participants completed the Protestant Ethic Scale (e.g., “Our society would have fewer problems if people had less leisure time”; Mirels & Garrett, 1971) from 1 = *I disagree strongly* to 7 = *I agree strongly* (19 items, $\alpha = .74$).

Impulsivity. Participants completed the Barratt Impulsiveness Scale (Patton et al., 1995) (e.g., “I act on the spur of the moment”) from 1 = *rarely/never* to 4 = *almost always/always* (13 items, $\alpha = .85$).

Temporal Focus. Participants reported their present focus (e.g., “I focus on what is currently happening in my life,” four items, $\alpha = .79$) and future focus (e.g., “I think about what my

Table 2
Psychometric Properties of Delaying Happiness Versus Living in the Moment Beliefs (Study 1)

Item	Factor 1 Delaying happiness	Factor 2 Living in the moment
1. It is worth sacrificing now for happiness in the future.		
2. If I make sacrifices now, I will be able to enjoy life in the future.	.77	.06
3. Working hard and making sacrifices in my everyday life is important, because it will help me achieve happiness down the road.	.77	-.03
4. One must work hard and make sacrifices now to enjoy life later.	.77	-.10
5. I believe in working hard now to achieve future happiness, even if it means missing out on fun times.	.73	-.17
6. I believe in delaying immediate enjoyment and fun, knowing that someday all of my hard work and sacrifice will pay off.	.69	-.18
7. Work hard today and your future self will thank you for it.	.64	.15
8. Working hard now will help me to secure happiness in the future.	.63	.20
9. I will not achieve good outcomes in the future if I do not work hard in the present.	.58	.14
10. Resisting fun and enjoyable activities in the short-term will help me make progress toward my long-term goals.	.57	-.05
11. I want to seize the moment and enjoy life as much as possible now versus someday in the distant future.	.02	.80
12. I believe in living in the moment rather than delaying happiness for some later point in time.	-.13	.77
13. We should live in the moment and enjoy opportunities to have fun now versus later.	-.02	.76
14. Life is short, so it is important to enjoy life to the fullest now.	.09	.75
15. I believe in enjoying life to the fullest now, because no one knows what the future may bring.	.10	.75
16. Instead of waiting to be happy someday, I prefer to be happy today.	-.00	.71
17. When it comes to being happy, I believe in the saying “if not now, then when?”	.01	.70
18. When it comes to enjoying life, I believe in the saying “no day but “today.”	.00	.67
19. I want to live my life now, rather than waiting to enjoy life and be happier in the future.	-.17	.66
20. It is important to engage in fun activities as they become available, because I might not get the same chance in the future.	.16	.57
Range	3.00 to 7.00	2.30 to 7.00
<i>M</i> (<i>SD</i>)	5.40 (.87)	4.83 (.87)

Note. Bolded values reflect factor loadings above .50 on the primary factor with cross-loadings less than .21 on the other factor.

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future has in store,” four items, $\alpha = .86$) from 1 = *never* to 4 = *constantly* (Shipp et al., 2009).

Delay of Gratification. Participants completed the Delay of Gratification Inventory (Hoerger et al., 2011), which measures the tendency to delay immediate rewards across various domains (e.g., “I try to spend my money wisely,” 10 items, $\alpha = .69$) from 1 = *strongly disagree* to 5 = *strongly agree*.

Results

Factor Structure of DH Versus LM

To test whether DH and LM beliefs are distinct constructs, we first standardized the DH and LM items and conducted a principal axis factor analysis with promax rotation on all items. The eigenvalues and scree plot suggested either a two- or three-factor solution as optimal (first ten eigenvalues = 5.82, 5.38, 1.42, .81, .72, .63, .61, .52, .46, .44). The two-factor solution was clearly interpretable as DH and LM, consistent with expectations. The three-factor solution had the same LM factor, but some of the DH items (1, 2, 3, 4) split off onto a third factor. The two DH factors were not clearly differentiated in content and were highly correlated ($r = .57, p < .001$).

Given the strong correlation between the DH factors and the two-factor solution being interpretable and consistent with expectations, we retained the two-factor model (see Study 2a for supporting confirmatory analyses). The two factors accounted for 29.08% and 26.91% of the variance. Factor loadings ranged from .57 – .80 on the primary factor and all cross-loadings were less than .21 on the other factor (see Table 2 for factor loadings, correlations, and descriptives).

Given the conceptual similarities between DH and delay of gratification, we also conducted a principal axis factor analysis with promax rotation on items from both of these scales. Results showed that none of the delay of gratification items loaded onto the same factor as the DH items; factor loadings for DH and delay of gratification ranged from .59 to .85 on the primary factors and all cross-loadings were less than .22 on the other factor. Given the conceptual overlap between LM and impulsivity, we also ran a factor analysis with items from both of these scales. None of the impulsivity items loaded onto the same factor as the LM items; factor loadings ranged from .40 to .81 on the primary factors for each scale and all cross-loadings were less than .09 on the other factor. Together, these findings provide further evidence that DH and LM are empirically distinct from delay of gratification and impulsivity, respectively.

Convergent and Discriminant Validity

We next examined zero-order correlations among DH, LM, and the individual difference variables (see Table 3). DH and LM beliefs were unrelated to each other ($r = -.03, p = .65$), unrelated to age ($ps > .47$), and significantly related to gender, such that women endorsed DH ($r = .12, p = .032$) and LM beliefs ($r = .23, p < .001$) more than men. As expected, DH was positively related to Grit, Consideration of Future Consequences, Self-Control, Future Focus, Conscientiousness, Protestant Ethic, Delay of Gratification, and negatively related to Impulsivity. Also as expected, LM was positively related to Present Focus and Impulsivity and negatively related to Grit, Consideration of Future Consequences, and Self-Control.

Test–Retest Reliability

To examine the test–retest reliability of DH and LM, we collected data from a separate group of 300 college students (see Table 1). Participants completed the DH and LM scales as part of a larger survey (DH_{Time1}: $M = 4.97, SD = 1.09$; LM_{Time1}: $M = 4.51, SD = 1.18$). About 5–6 weeks later, participants completed the same scales as part of another study (DH_{Time2}: $M = 5.27, SD = .87$; LM_{Time2}: $M = 4.78, SD = 1.02$ for LM). Reliabilities were acceptable (DH: $\alpha = .90$, LM: $\alpha = .93$), as were test–retest reliabilities (DH: $r = .62, p < .001$; LM: $r = .67, p < .001$).

Predictive Validity

Next, we conducted hierarchical regression analyses in which all individual difference covariates were entered at Step 1, and DH and LM beliefs were entered simultaneously at Step 2 (to control for the other belief) in predicting each dependent variable.³ Change in R^2 reflects the degree to which DH and LM beliefs predict the dependent measures above and beyond the covariates.

Focal Goal Pursuit

Consistent with predictions, there was a significant effect of DH beliefs in predicting focal goal pursuit, $\beta = .32, p < .001, 95\% \text{ CI } [.18, .46]; R^2 = .27, \Delta R^2 = .05, \Delta F(2, 285) = 9.84, p < .001$. No other variables significantly predicted focal goal pursuit ($ps > .09$).

Nonfocal Goal Pursuit

LM beliefs predicted more nonfocal goal pursuit, $\beta = .17, p = .047, 95\% \text{ CI } [.00, .33]; R^2 = .19, \Delta R^2 = .01, \Delta F(2, 285) = 1.99, p = .14$. Consideration of Future Consequences, $\beta = -.36, p = .016, 95\% \text{ CI } [-.65, -.07]$, and Self-control, $\beta = -.27, p = .042, 95\% \text{ CI } [-.53, -.01]$ negatively predicted nonfocal goal pursuit. No other effects were significant ($ps > .07$).

Anticipated Positive Affect

As expected, DH beliefs predicted greater anticipated positive affect upon achieving one’s focal goal, $\beta = .30, p < .001, 95\% \text{ CI } [.14, .46]; R^2 = .20, \Delta R^2 = .05, \Delta F(2, 285) = 8.11, p < .001$. Conscientiousness, $\beta = .17, p = .050, 95\% \text{ CI } [.00, .35]$, and Delay of Gratification, $\beta = .32, p = .022, 95\% \text{ CI } [.05, .60]$, also predicted greater anticipated positive affect. No other effects were significant ($ps > .07$).

Anticipated Negative Affect

DH beliefs predicted greater anticipated negative affect from engaging in nonfocal goal pursuit, $\beta = .27, p < .001, 95\% \text{ CI } [.13, .41]; R^2 = .15, \Delta R^2 = .05, \Delta F(2, 285) = 7.58, p = .001$. The Protestant Ethic was also related to more anticipated negative affect, $\beta = .33, p = .006, 95\% \text{ CI } [.09, .56]$. No other effects were significant ($ps > .05$).

³We checked statistical assumptions for linearity, normality, homoscedasticity, and absence of multicollinearity for the regression analyses conducted in Studies 1–3. All assumptions were supported, except for homoscedasticity of the anticipated positive affect dependent variable. To correct for this, we log transformed this variable across the studies and report the updated results. Results also remained the same with or without inclusion of outliers.

Table 3
Zero-Order Correlations for Study 1

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. DH beliefs	—																
2. LM beliefs	-.03	—															
3. Grit	.27***	-.16**	—														
4. Consideration of future consequences	.39***	-.27**	.58***	—													
5. Self-control	.19**	-.19**	.64***	.55***	—												
6. Future focus	.39***	-.04*	.31***	.45***	.26***	—											
7. Present focus	.02	.35***	-.02	-.15**	-.01	.23***	—										
8. Conscientiousness	.22***	-.01	.58***	.48***	.55***	.33***	.07	—									
9. Protestant ethic	.37***	-.05	.21***	.34***	.17***	.27***	.11	.20***	—								
10. Delay of gratification	.40***	-.03	.47***	.62***	.51***	.40***	.01	.55***	.30***	—							
11. Mindfulness	.15*	-.09	.31***	.13*	.32***	.09	.21***	.29***	.09	.17**	—						
12. Impulsivity	-.34***	.18**	-.59***	-.55***	-.63***	-.48***	-.11*	-.61***	-.24	-.55***	-.41***	—					
13. Focal goal pursuit	.38***	-.05	.35***	.38***	.33***	.33***	.01	.34***	.13*	.34***	.09	-.36***	—				
14. Nonfocal goal pursuit	-.10	.23***	-.28***	-.34***	-.32***	-.16***	.12*	-.19**	-.01	-.18**	-.01	.27***	-.36***	—			
15. Anticipated positive affect	.37***	.08	.23***	.29***	.13*	.24***	.07	.31***	.20***	.37***	.06	-.25***	-.25***	-.03	—		
16. Anticipated negative affect	.26***	-.07	-.07	.11	-.09	.10	-.03	.01	.23***	.03	-.08	.00	.14*	.08	.07	—	
17. Well-being	.34***	.23***	.30***	.25***	.25***	.32***	.33***	.41***	.28***	.43***	.31***	-.42***	.27***	-.04	.39***	-.02	—

Note. DH = delaying happiness; LM = living in the moment.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Well-Being

Results showed significant effects of DH, $\beta = .12, p = .026$, 95% CI [.01, .22], and LM, $\beta = .19, p < .001$, 95% CI [.09, .28]; $R^2 = .42, \Delta R^2 = .04, \Delta F(2, 285) = 10.42, p < .001$, in predicting greater well-being. Present Focus, $\beta = .16, p = .001$, 95% CI [.07, .26], Delay of Gratification, $\beta = .28, p = .002$, 95% CI [.11, .46], and Mindfulness, $\beta = .16, p = .008$, 95% CI [.04, .28], also predicted greater well-being, while Impulsivity predicted lower well-being, $\beta = -.18, p = .041$, 95% CI [-.35, -.01]. No other effects were significant ($ps > .05$).

Discussion

Study 1 provided initial evidence that DH and LM are distinct beliefs that can be measured and distinguished from other constructs. Supporting our hypotheses, participants who endorsed DH spent more time and effort pursuing focal goals, anticipated feeling greater happiness and pride upon achieving their goal, but felt more anxious, guilty, and regretful when engaging in nonfocal goal activities that took time away from their focal goals. Results emerged even after accounting for other individual difference variables, underscoring the unique predictive validity of DH. LM beliefs predicted engaging more often in fun and enjoyable nonfocal goal activities and experiencing greater well-being. Indeed, whereas impulsivity predicted lower subjective well-being, LM predicted greater well-being. Interestingly, DH also predicted greater well-being. One possible explanation for this relationship is that our measures of well-being not only included happiness and life satisfaction, but also included items assessing psychological well-being. Whereas hedonic well-being refers to the attainment of pleasure and avoidance of pain and includes a subjective affective component (e.g., happiness) and a cognitive evaluative component (e.g., life satisfaction; Diener et al., 1985; Kahneman et al., 1999; Lyubomirsky & Lepper, 1999), eudaimonic well-being refers to psychological well-being, which includes experiencing a sense of meaning and purpose in life (Diener et al., 2010; Ryff, 1989). Thus, participants in the current study who believed in DH may have reported greater overall well-being, because pursuing important focal goals may have given them a sense of engagement, meaning, and purpose in their lives.

A limitation of this study is the potential overlap between DH and LM beliefs and focal and nonfocal goal pursuit. On one hand, the overlap between DH and LM beliefs and focal and nonfocal goal pursuit may seem problematic because they appear to assess redundant constructs. However, from the perspective of theory and research on attitude-behavior consistency and personality-trait-behavior consistency (Fazio & Zanna, 1981), it makes sense that DH beliefs would predict more focal goal-related outcomes (i.e., reports of spending time and effort on such pursuits), whereas believing in LM would predict more involvement in nonfocal goal pursuits that maximize current happiness. This is because “the observed attitude-behavior relation is enhanced by employing attitude and behavior measures of equivalent levels of specificity” (Fazio & Zanna, 1981; p. 196). In the current study, DH and LM can be viewed as beliefs, similar to attitudes, whereas focal and nonfocal goal pursuit can be viewed as self-reported engagement in behavior. Thus, it makes sense that DH and LM beliefs predicted focal and nonfocal goal pursuit, respectively, because

beliefs and self-reported engagement in focal and nonfocal goal-related behavior in this study were similar in levels of specificity.

Such findings are consistent with past research, which also found that self-relevant beliefs predict people's reported engagement in behaviors and activities. For example, the more people base their self-worth on academics, the more time they report spending studying; the more people base their self-worth on their appearance, the more time they say they spend grooming; and the more people base their self-worth on family support, the more time they report spending with their family (Crocker et al., 2003). Although we did not assess behavior in the current study, we did examine delay discounting behavior in Study 2c, future goal-related behavioral intentions in Study 3, and reports of engaging in goal-related behavior using a daily diary design in Study 4. First, though, we sought to replicate the findings from Study 1 in two adult community samples in Study 2a and 2b.

Study 2a: DH and LM Beliefs Among an Adult Community Sample

Method

Whereas Study 1 examined a college student sample, Study 2a sought to confirm the factor structure and predictive validity of DH and LM among an adult community sample. Sample size was based on an a priori decision to recruit a minimum of 300 participants over a 3- to 4-week period. Participants ($N = 302$) completed the study via Amazon's Mechanical Turk (MTurk) for \$.75. As in Study 1, participants were excluded if they did not list a focal goal ($n = 6$), requested to withdraw their data ($n = 17$), or did not list a focal goal and wanted to withdraw their data ($n = 5$), leaving a final sample of 274 (see Table 1).

As in Study 1, participants described an important focal goal and then completed the DH scale in reference to this goal ($\alpha = .93$) and the LM scale ($\alpha = .95$). The most common goals were financial (28%), health/fitness (23%), and job-related (19%). They then completed the same measures as before assessing *Anticipated positive affect* ($r = .72, p < .001$), *Anticipated negative affect* ($\alpha = .81$), and *Well-being* ($\alpha = .94$). As before, participants also completed covariate measures of Grit ($\alpha = .87$), Consideration of Future Consequences ($\alpha = .90$), Self-Control ($\alpha = .88$), Future Focus ($\alpha = .91$), Present Focus ($\alpha = .89$), Conscientiousness ($r = .34, p < .001$), Protestant Ethic ($\alpha = .86$), Delay of Gratification ($\alpha = .80$), Mindfulness ($\alpha = .93$), and Impulsivity ($\alpha = .89$).

Results

Confirmatory Factor Analysis

The two-factor solution found in Study 1 reflecting DH and LM beliefs was tested in the present study using confirmatory factor analysis (CFA) with robust maximum likelihood estimation in MPlus. Based on guidelines for interpreting fit indices (Hu & Bentler, 1999), this two-factor model showed acceptable fit to the data, $\chi^2(169) = 434.42, p < .001$, comparative fit index (CFI) = .903, root mean square error of approximation (RMSEA) = .076, standardized root mean square residual (SRMR) = .066 (see Table 4 for standardized factor loadings, which ranged from .55 to .86).

Table 4
Standardized Factor Loadings and Standard Errors From the Two-Factor Confirmatory Factor Analysis (Study 2a)

Item	DH	LM
Item 1	.73 (.04)	
Item 2	.55 (.07)	
Item 3	.72 (.05)	
Item 4	.72 (.05)	
Item 5	.65 (.05)	
Item 6	.78 (.04)	
Item 7	.86 (.03)	
Item 8	.83 (.04)	
Item 9	.79 (.03)	
Item 10	.86 (.02)	
Item 11		.80 (.03)
Item 12		.83 (.02)
Item 13		.86 (.02)
Item 14		.76 (.03)
Item 15		.77 (.03)
Item 16		.82 (.03)
Item 17		.81 (.03)
Item 18		.79 (.03)
Item 19		.83 (.03)
Item 20		.84 (.02)

Note. DH = delaying happiness; LM = living in the moment. All loadings are significant at $p < .001$.

Because a three-factor solution was considered in Study 1, we examined this solution in the present study using CFA, which also showed acceptable fit to the data, $\chi^2(167) = 430.56, p < .001$, CFI = .904, RMSEA = .076, SRMR = .066. However, the two DH factors in this solution were highly correlated ($r = .97$), suggesting that they were not distinguishable or incrementally informative. A nested chi-square difference test using the Satorra-Bentler scaling correction revealed that the three-factor solution did not fit significantly better than the two-factor solution, $\Delta\chi^2(2) = 3.91, p = .142$, thereby supporting the more parsimonious two-factor solution.

We also tested the alternative possibility that a one-factor model, rather than a two-factor model, might best fit the data. If a one-factor model is supported, it would suggest that DH and LM reflect two ends of the same continuum, rather than reflecting two distinct constructs. Results of the one-factor model showed poor fit to the data, $\chi^2(170) = 1412.75, p < .001$, CFI = .547, RMSEA = .163, SRMR = .209. A nested chi-square difference test using the Satorra-Bentler scaling correction indicated that the two-factor solution fit the data significantly better than the one-factor solution, $\Delta\chi^2(1) = 443.96, p < .001$. Together, these findings suggest that DH and LM are distinct constructs. We thus retained the two-factor model in all studies.

Primary Analyses

We first examined zero-order correlations among DH, LM, and the individual difference covariates (see Table 5). DH and LM beliefs were inversely related ($r = -.31, p < .001$) and were unrelated to age or gender ($ps > .08$). For the primary analyses, we conducted hierarchical regression analyses in which individual difference covariates were entered at Step 1 and DH and LM beliefs were entered simultaneously at Step 2.

Anticipated Positive Affect. Results showed significant effects of DH, $\beta = .39, p < .001$, 95% CI [.27, .51], and LM,

Table 5
Zero-Order Correlations for Study 2a

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Delaying happiness	—											
2. Living in the moment	-.31***	—										
3. Grit	.35***	-.28***	—									
4. Consideration of future consequences	.52***	-.52***	.51***	—								
5. Self-control	.20**	-.32***	.63***	.51***	—							
6. Future focus	.43***	-.30***	.27***	.48***	.18**	—						
7. Present focus	.05	.38***	.14*	-.14*	.02	.01	—					
8. Conscientiousness	.21***	-.17**	.65***	.43***	.68***	.11	.12	—				
9. Protestant ethic	.41***	-.28***	.30***	.35**	.12	.35***	-.07	.21**	—			
10. Delay of gratification	.46***	-.29***	.65***	.63***	.60***	.35***	.12*	.59***	.37***	—		
11. Mindfulness	.11	-.13*	.57***	.29***	.58***	.06	.19**	.53***	.13*	.43***	—	
12. Impulsivity	-.37***	.28***	-.70***	-.59***	-.71***	-.39***	-.20**	-.65***	-.32***	-.66***	-.53***	—

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

$\beta = .21$, $p < .001$, 95% CI [.09, .32], in predicting greater anticipated feelings of happiness and pride upon achieving one's focal goal, $R^2 = .40$, $\Delta R^2 = .11$, $\Delta F(2, 260) = 24.69$, $p < .001$. The Protestant Ethic, $\beta = .20$, $p = .018$, 95% CI [.03, .36], also predicted greater anticipated positive affect. No other effects were significant ($ps > .07$).

Anticipated Negative Affect. Results showed a significant effect of DH in predicting negative affective reactions to pursuing nonfocal goal activities, $\beta = .16$, $p = .03$, 95% CI [.02, .31]; $R^2 = .26$, $\Delta R^2 = .02$, $\Delta F(2, 260) = 3.02$, $p = .050$. Having a Future Focus, $\beta = .23$, $p < .001$, 95% CI [.10, .35], and endorsing the Protestant Ethic, $\beta = .44$, $p < .001$, 95% CI [.24, .63], also predicted greater anticipated negative affect, whereas Mindfulness, $\beta = -.21$, $p = .016$, 95% CI [-.38, -.04], predicted lower anticipated negative affect. No other effects were significant ($ps > .06$).

Well-Being. Results showed a significant effect of DH, $\beta = .15$, $p = .011$, 95% CI [.04, .27], and a marginal effect of LM, $\beta = .10$, $p = .09$, 95% CI [-.02, .21], in predicting well-being, $R^2 = .37$, $\Delta R^2 = .02$, $\Delta F(2, 260) = 4.33$, $p = .014$. The Protestant Ethic also predicted greater well-being, $\beta = .28$, $p = .001$, 95% CI [.12, .44], whereas Consideration of Future Consequences, $\beta = -.17$, $p = .042$, 95% CI [-.34, -.01], and Impulsivity, $\beta = -.21$, $p = .042$, 95% CI [-.41, -.01], negatively predicted well-being. No other effects were significant ($ps > .08$).

Discussion

Whereas Study 1 examined college students, Study 2a examined DH and LM among adults who were, on average, 20 years older. In addition, whereas DH and LM were unrelated to each other in Study 1, they were inversely related to each other in the present study. However, comparisons of model fit revealed that a two-factor model explained the data significantly better than a one-factor model. As in Study 1, DH and LM were generally related to individual difference variables in the expected directions. Furthermore, even after controlling for these variables, DH and LM beliefs were uniquely associated with the dependent measures.

Replicating Study 1, the more participants endorsed DH, the happier and prouder they expected to feel upon achieving their goal, but the more anxious, guilty, and regretful they felt when engaging in activities that detracted from their focal goal. Similar

to Study 1, DH and LM beliefs predicted greater well-being. Participants who endorsed DH may have experienced greater well-being because they are likely to pursue valued focal goals that contribute to a sense of meaning and purpose in their lives. Indeed, when we examined the subscales of well-being separately in the current study, results of regression analyses revealed that DH beliefs predicted greater psychological well-being, $\beta = .19$, $p = .001$, 95% CI [.076, .300], but not subjective happiness or life satisfaction, all $ps > .15$. Such findings suggest that believing in DH may be beneficial for well-being, especially for feelings of eudaimonic well-being that reflect a sense of engagement, meaning, and purpose in one's activities. Overall, then, Study 2a converged with Study 1 by showing that DH and LM relate to constructs in the literature in expected ways and uniquely predict anticipated affective reactions to goal pursuit and well-being.

Study 2b: Replication Study With Adult Community Sample

To provide further evidence, we ran a third study with a large adult community sample ($N = 412$) from Research-Match, an online platform developed by academic organizations with the goal of matching researchers with participants. Anyone living in the United States who is over 18 years old can join Research-Match. As before, participants were excluded if they did not list a focal goal ($n = 4$) or withdrew their data ($n = 3$), leaving a final sample of 405 (see Table 1).

Method

Participants listed an important focal goal and then completed the DH scale in reference to this goal ($\alpha = .89$) and the LM scale ($\alpha = .94$). The most commonly listed domains were health/fitness (24%), other (e.g., hobbies such as making music, home improvements, gardening) (17%), and job (15%) and financial-related (15%) goals. They then completed the same measures as before assessing *Anticipated positive affect* ($r = .61$, $p < .001$), *Anticipated negative affect* ($\alpha = .79$), and *Well-being* ($\alpha = .92$). They also completed the same covariates as before for Grit ($\alpha = .81$), Consideration of Future Consequences ($\alpha = .85$), Self-Control ($\alpha = .84$), Future Focus ($\alpha = .90$), Present Focus ($\alpha = .85$), Conscientiousness ($r = .43$, $p < .001$),

Protestant Ethic ($\alpha = .82$), Delay of Gratification ($\alpha = .72$), Mindfulness ($\alpha = .88$), and Impulsivity ($\alpha = .87$).

Results

Zero-order correlations between DH, LM, and the individual difference covariates are shown in Table 6. DH and LM were inversely related ($r = -.36, p < .001$), DH was inversely related to age ($r = -.14, p = .005$), and LM was positively related to gender ($r = .13, p = .007$), such that women were more likely than men to believe in LM. For the primary analyses, we conducted hierarchical regression analyses in which all individual difference covariates were entered at Step 1 and DH and LM beliefs were entered simultaneously at Step 2.

Anticipated Positive Affect

DH beliefs predicted greater anticipated feelings of happiness and pride upon achieving one’s focal goal, $\beta = .20, p = .001, 95\% \text{ CI } [.08, .32]; R^2 = .09, \Delta R^2 = .03, \Delta F(2, 388) = 5.55, p = .004$, as did Future Focus, $\beta = .10, p = .041, 95\% \text{ CI } [.00, .19]$. No other effects were significant ($ps > .10$).

Anticipated Negative Affect

DH beliefs predicted greater anticipated negative affective reactions to engaging in nonfocal goal activities, $\beta = .22, p = .001, 95\% \text{ CI } [.09, .34]$; LM predicted lower anticipated negative affect, $\beta = -.13, p = .026, 95\% \text{ CI } [-.24, -.02]; R^2 = .18, \Delta R^2 = .05, \Delta F(2, 389) = 10.74, p < .001$. Future Focus also predicted greater anticipated negative affect, $\beta = .10, p = .04, 95\% \text{ CI } [.01, .20]$, whereas Mindfulness predicted lower anticipated negative affect, $\beta = -.22, p = .007, 95\% \text{ CI } [-.37, -.06]$. No other effects were significant ($ps > .07$).

Well-Being

LM beliefs predicted greater well-being, $\beta = .11, p = .015, 95\% \text{ CI } [.02, .19]; R^2 = .29, \Delta R^2 = .01, \Delta F(2, 380) = 3.04, p = .049$. Present Focus, $\beta = .16, p < .001, 95\% \text{ CI } [.08, .24]$, Delay of Gratification, $\beta = .29, p = .001, 95\% \text{ CI } [.12, .45]$, and Mindfulness, $\beta = .16, p = .008, 95\% \text{ CI } [.04, .29]$, also predicted greater well-being. No other effects were significant ($ps > .12$).

Discussion

There were mostly similarities (and a few differences) between the present findings and the results of the previous two studies. First, consistent with the prior studies, DH beliefs predicted greater anticipated positive affect upon achieving one’s focal goal and expecting to feel more guilty, anxious, and regretful when engaging in nonfocal goal activities. Also, consistent with the previous studies, LM beliefs predicted greater well-being. In contrast to the previous studies, DH beliefs were not significantly related to well-being in the current study. One possible explanation for this finding is the population that was studied. In the present study, participants were mostly in their mid-50s, whereas participants in Study 1 were college students and in Study 2a, were working adults in their late 30s. Given that older adults are closer to retirement age, the connection between DH beliefs and well-being may not be as strong or salient as was found with younger participants in the previous studies.

Study 2c

The studies thus far demonstrate that DH and LM beliefs are uniquely related to anticipated positive affect, negative affect, and well-being. What is unknown, however, is whether DH and LM are related to actual behavioral outcomes beyond self-reports. One behavioral measure that reflects preferences for different rewards as a function of time is delay discounting, which is the tendency to favor immediate rewards and discount delayed rewards (Loewenstein, 1988) and is a gold-standard measure in impulsivity research for modeling goal-directed behavior toward immediate versus delayed ends (Ainslie, 1975; Rachlin, 2000).

In a typical delay discounting paradigm, participants are presented with real or hypothetical scenarios in which the size of a reward is varied across time and can be received either immediately or in a larger amount at a later point in time (Robles & Vargas, 2008). Research shows that delay discounting is related to a number of problems associated with impulsivity, such as addictive behaviors (MacKillop et al., 2011) and abuse of drugs (Bickel et al., 1999; Kirby et al., 1999). In the current study, we used a delay discounting task to test whether DH and LM beliefs uniquely predicted the tendency to discount delayed monetary rewards. If DH reflects the belief that pursuing important focal goals today

Table 6
Zero-Order Correlations for Study 2b

Variable	1	2	3	4	5	6	7	8	9	10	11	12
1. Delaying happiness	—											
2. Living in the moment	-.36***	—										
3. Grit	.13*	-.08	—									
4. Consideration of future consequences	.26***	-.27***	.48***	—								
5. Self-control	.12*	-.15**	.65***	.51***	—							
6. Future focus	.29***	-.15**	.16**	.27***	.17**	—						
7. Present focus	-.10*	.27***	.16**	-.09	.15**	.05	—					
8. Conscientiousness	.11*	-.03	.60***	.38***	.55***	.13**	.13**	—				
9. Protestant ethic	.35***	-.23***	.09	.09	.06	.18***	.04	.10*	—			
10. Delay of gratification	.15**	-.02	.57***	.60***	.64***	.18***	.11*	.42***	.07	—		
11. Mindfulness	-.12*	.04	.43***	.24***	.50***	-.06	.26***	.37***	-.12**	.35***	—	
12. Impulsivity	-.15**	.08	-.60***	-.53***	-.72***	-.29***	-.19***	-.63***	-.08	-.60***	-.46***	—

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

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contributes to greater future (vs. current) happiness, then participants who endorse this belief should show *less* delay discounting—that is, less tendency to discount future rewards. In contrast, if LM reflects the belief that one should seize proximal opportunities to experience happiness today versus later, then those who endorse this belief should show *more* delay discounting—that is, greater tendency to discount future rewards in favor of immediate rewards.

Method

We sought to recruit at least 300 participants from Research Match, as described in the previous study, over a 3- to 4-week period and were able to collect data from 407 participants. Participants were excluded if they did not list a focal goal ($n = 5$), leaving a final sample of 402 (see Table 1 for demographics).

As before, participants briefly described an important focal goal in their lives and then completed the DH scale in reference to this goal ($\alpha = .89$). The most common focal goals were health/fitness (26%), other (e.g., hobbies such as making music, home improvements, gardening, 22%), job-related (12%), and financial-related (12%) goals. Participants also completed the LM scale ($\alpha = .93$) and the same measures as before assessing *Anticipated positive affect* ($r = .49, p < .001$), *Anticipated negative affect* ($\alpha = .79$), and *Well-being* ($\alpha = .94$).

To assess delay discounting, participants completed the Monetary Choice Questionnaire (Kirby et al., 1999), which measures the extent to which people discount delayed rewards. The range of the delay was between 7 to 179 days and immediate and delayed rewards ranged from \$11 to \$85. Participants responded to 26 scenarios⁴ in which they chose between a smaller, immediate reward (e.g., \$33 today) versus a larger, later reward (e.g., \$80 in 14 days). Items reflected small, medium, and large reward amounts. Participants then completed the same covariate measures as before assessing Conscientiousness ($r = .50, p < .001$), Delay of Gratification ($\alpha = .69$), and shortened versions of Grit ($\alpha = .88$), Consideration of Future Consequences ($\alpha = .70$), Self-Control ($\alpha = .79$), Future Focus ($r = .84, p < .001$), Present Focus ($r = .70, p < .001$), Protestant Ethic ($\alpha = .81$), Impulsivity ($r = .78, p < .001$), and Mindfulness ($\alpha = .71$).

Results

Zero-order correlations between DH, LM, and the individual difference covariates are shown in Table 7. DH and LM were inversely related ($r = -.42, p < .001$), unrelated to age ($ps > .18$), and women were more likely than men to endorse LM ($r = .15, p = .002$). As shown in Table 7, DH, Consideration of Future Consequences, Self-Control, and Delay of Gratification were significantly related to less delay discounting (i.e., less tendency to discount later rewards), whereas LM and present focus were related to more delay discounting. Next, we conducted a series of hierarchical regression analyses in which all individual difference covariates were entered at Step 1 and DH and LM beliefs were entered simultaneously at Step 2.

Anticipated Positive Affect

Results showed a significant effect of DH, $\beta = .23, p < .001$, 95% CI [.10, .36], and LM, $\beta = .16, p = .006$, 95% CI [.05, .27] $R^2 = .20, \Delta R^2 = .03, \Delta F(2, 389) = 7.32, p = .001$, in predicting

anticipated feelings of happiness and pride upon achieving one's focal goal. Future Focus, $\beta = .19, p < .001$, 95% CI [.11, .27] also predicted greater anticipated positive affect. No other effects were significant ($ps > .08$).

Anticipated Negative Affect

Results revealed significant effects of DH, $\beta = .47, p < .001$, 95% CI [.35, .59], and LM, $\beta = -.12, p = .024$, 95% CI [-.23, -.02]; $R^2 = .29, \Delta R^2 = .17, \Delta F(2, 389) = 45.20, p < .001$, such that those who endorsed DH (LM) beliefs showed greater (less) anticipated negative affective reactions to pursuing nonfocal goal activities. Future Focus also predicted greater anticipated negative affect, $\beta = .09, p = .023$, 95% CI [.01, .17], while Present Focus, $\beta = -.10, p = .019$, 95% CI [-.19, -.02], and Grit, $\beta = -.13, p = .018$, 95% CI [-.25, -.02], predicted less anticipated negative affect. No other effects were significant ($ps > .09$).

Well-Being

Both DH, $\beta = .16, p = .004$, 95% CI [.05, .26], and LM beliefs, $\beta = .11, p = .017$, 95% CI [.02, .21]; $R^2 = .38, \Delta R^2 = .02, \Delta F(2, 389) = 5.18, p = .006$, predicted greater well-being, as did Delay of Gratification, $\beta = .41, p < .001$, 95% CI [.25, .58], Protestant Ethic, $\beta = .09, p = .033$, 95% CI [.01, .17], Mindfulness, $\beta = .16, p = .003$, 95% CI [.05, .27], and Present Focus, $\beta = .18, p < .001$, 95% CI [.11, .26]. No other effects were significant ($ps > .14$).

Delay Discounting

To calculate the discounting rate of k , we used the hyperbolic-discounting formula, $V = A/(1 + kD)$, where V is the present value of the delayed reward A at delay D and k is a free parameter, which reflects the discounting rate (Kirby et al., 1999). Smaller k values indicate a preference for delayed rewards; higher k values indicate a preference for immediate rewards. Details of the calculation procedure appear in the online supplemental materials. Results of a regression analysis with DH, LM, and all individual difference covariates in the model revealed that participants who strongly endorsed DH showed significantly less delay discounting, $\beta = -.15, p = .013$, 95% CI [-.40, -.05], $R^2 = .12, \Delta R^2 = .02, \Delta F(2, 381) = 4.20, p = .016$. LM did not predict delay discounting, $\beta = .02, p = .73$, 95% CI [-.13, .19]. Future Focus, $\beta = .14, p = .007$, 95% CI [.05, .30], and Present Focus, $\beta = .12, p = .027$, 95% CI [.02, .30], predicted more delay discounting, whereas Delay of Gratification, $\beta = -.18, p = .006$, 95% CI [-.64, -.11], predicted less delay discounting. No other effects were significant ($ps > .11$).

Discussion

Results generally supported our hypotheses. Results showed that DH beliefs predicted *less* delay discounting (i.e., less tendency to discount delayed rewards) even after controlling for all other individual difference variables. LM beliefs were related to *more* delay discounting when examining zero-order correlations, but after controlling for all other covariates, LM did not significantly

⁴ Owing to a programming error, item 18 of the delay discounting task: "Would you prefer \$24 today, or \$35 in 29 days?" was not assessed. As recommended by Gray et al. (2016), we replaced missing values by coding this item with responses to the most similar previous item (i.e., item 3: "Would you prefer \$19 today, or \$25 in 53 days?").

Table 7
Zero-Order Correlations for Study 2c

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Delaying happiness	—												
2. Living in the moment	-.54***	—											
3. Grit	.09	-.12*	—										
4. Consideration of future consequences	.23***	-.28***	.41***	—									
5. Self-control	.08	-.11*	.56***	.48***	—								
6. Future focus	.17***	-.12*	.09	.21***	.11*	—							
7. Present focus	-.07	.25***	.14**	-.03	.13*	-.03	—						
8. Conscientiousness	.11*	.01	.53***	.40***	.53***	.18***	.19***	—					
9. Protestant ethic	.38***	-.09	.21***	.18***	.19***	.12*	.12*	.24***	—				
10. Delay of gratification	.27***	-.13**	.47***	.53***	.52***	.20***	.06	.54***	.24***	—			
11. Mindfulness	.02	.01	.51***	.31**	.54***	.12*	.29***	.47***	.16**	.39***	—		
12. Impulsivity	-.07	.11*	-.37***	-.36***	-.50***	-.12*	.00	-.35***	-.11*	-.31***	-.35***	—	
13. Delay discounting	-.20***	.14**	-.06	-.15**	-.13**	.07	.13**	-.07	-.07	-.22***	.02	.09	—

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

predict delay discounting. In addition to delay discounting, we assessed anticipated positive and negative affect and well-being in the current study and found that DH and LM beliefs predicted these outcomes as well, even after controlling for all other individual difference covariates.

To better understand why LM beliefs were not significantly related to delay discounting, we conducted an additional analysis in which we entered LM beliefs first in the hierarchical regression model, followed by the covariates and DH beliefs at Step 2. Results of this analysis showed that LM beliefs were, in fact, significantly related to greater delay discounting, $\beta = .14$, $p = .006$, 95% CI [.058, .335]. When covariates were entered into the model, however, the relationship between LM and delay discounting became nonsignificant, as noted in the Results section. Instead, Future Focus and Present Focus predicted greater delay discounting, whereas Delay of Gratification and DH beliefs predicted less delay discounting. Together, these findings suggest that LM beliefs are related to greater delay discounting, but when considering broader constructs in the model, such as future focus and present focus, this relationship is attenuated. It makes sense that both future focus and present focus would be related to delay discounting, given that the delay discounting measure asked people to focus on both distant and immediate rewards.

A strength of the current study was its focus on behavioral outcomes. Rather than asking how much people valued delayed versus immediate rewards, we presented participants with a series of behavioral choices where they had to select one option over another. Because there are no “right” or “wrong” answers in the delay discounting task and no punitive consequences for making one choice over another, participants may be less likely to show social desirability biases or to simply respond in line with how they responded to the DH and LM questionnaires. Results also showed that both DH and delay of gratification predicted less delay discounting. Importantly, though, DH predicted less delay discounting above and beyond the influence of delay of gratification and all other individual difference covariates. Furthermore, only DH (and not delay of gratification) predicted greater anticipated positive affect from pursuing focal goals and greater anticipated negative affect from pursuing nonfocal goals. Thus, it appears that DH beliefs, while related to delay of gratification, are

uniquely related not only to anticipated affect, but to behavioral choices, as well.

Moreover, whereas delay discounting is a behavioral measure of the actual tendency to delay gratification, self-reported delay of gratification as assessed in the current study reflects one’s *perception* of delaying gratification. In the present study, DH beliefs predicted delay discounting behavior, which provides further evidence that we are assessing an antecedent of behavior that is distinct from people’s perception of their own delay of gratification. Thus, DH beliefs may shed light on the motivation for *why* people might choose larger-delayed over smaller-immediate rewards.

Meta-Analyses Across Studies

The studies so far suggest that DH and LM beliefs uniquely predict affective reactions to goal pursuit and well-being. Although some of the dependent measures across studies showed similar patterns of findings, the significance of the results varied from study to study. To obtain a more comprehensive depiction of the data and to weight the studies based on the differing sample sizes used, we conducted an internal meta-analysis across the four studies.

We used the *Meta-Essentials* spreadsheet tool (Workbook 7; Van Rhee et al., 2015) to calculate the combined effect size (i.e., semipartial correlation or sr) between DH, LM, and the outcome variables. To do this, we conducted multiple regression analyses and entered the standardized betas of DH (or LM) beliefs, standard errors of the beta, t values, R -squared values, number of predictors, and number of observations for each study into the meta-analytic worksheet. We used the standardized betas resulting from models that included all of the other individual difference covariates. Effects were interpreted as statistically significant if the 95% confidence interval did not include zero. Results are based on fixed-effects models given that our aim was to summarize the true effect size across the current studies.

Anticipated Positive Affect

Results revealed that both DH, $sr = .21$, $SE = .02$, 95% CI [.13, .28], and LM beliefs, $sr = .10$, $SE = .02$, 95% CI [.02, .17],

significantly predicted greater anticipated positive affective reactions to achieving one's focal goal.

Anticipated Negative Affect

Results showed that DH, $sr = .22$, $SE = .02$, 95% CI [.14, .29], but not LM beliefs, $sr = -.08$, $SE = .02$, 95% CI [-.15, .00], predicted greater anticipated negative affect when pursuing nonfocal goals.

Well-Being

Results showed that both DH, $sr = .10$, $SE = .02$, 95% CI [.03, .16], and LM beliefs, $sr = .11$, $SE = .02$, 95% CI [.05, .18], predicted greater well-being.

Discussion

Results of the meta-analysis revealed that the more participants endorsed DH, the more they expected to feel positive affect (i.e., happiness, pride) upon achieving their focal goal. Such findings are consistent with the broader notion that people who believe in DH are likely to think of their focal goal pursuits as an investment in their future happiness. Both DH and LM beliefs were related to greater positive affect upon achieving one's focal goals. Although the former is consistent with the idea that DH thinks of focal goal pursuits as an investment in one's future happiness, the latter finding is somewhat unexpected. One potential explanation may be differences between DH and LM as to whether affective states linger versus diminish (Igou, 2004). That is, although both DH and LM may anticipate the same intensity of positive affect upon achieving their goals, they may expect different durations. Whereas those who endorse DH may assume that positive affect will continue (see also research on the durability bias; Gilbert et al., 1998), those who endorse LM may believe that any happiness derived from attaining their focal goal will be short-lived and dissipate over time. This interpretation would be consistent with the LM view of happiness as a transient state.

Data from our lab provide preliminary support for this suggestion (see the online supplemental materials, Study 5). In this study, participants imagined achieving their focal goal today and reported how happy and satisfied they would feel across a range of time periods that varied from relatively short-term (i.e., 5 hr to 1 year from now) to long-term (i.e., 5 years to 50 years from now). Results of regression analyses showed that participants who believed in DH expected to feel happier and more satisfied with life (from achieving their focal goal today) for a longer period of time (i.e., 5 years to 50 years from now), whereas LM was unrelated to this outcome. In contrast, the more participants endorsed LM, their experience of positive affect (from achieving their focal goal) was expected to last for a relatively shorter period of time (i.e., 5 hr from now to 1 year from now); DH was unrelated to this outcome. Another key finding of the meta-analysis is that DH (but not LM) beliefs predicted greater anticipated negative affect from engaging in nonfocal goal activities. For those who believe in DH, happiness is thought to be an investment. Thus, pursuing activities that are not central to one's goals (i.e., nonfocal goal activities) may be viewed as "wasted" opportunities for making progress on one's focal goals, and thus, elicit anxiety, guilt, and regret.

Finally, the meta-analysis revealed that both DH and LM were related to greater well-being. We expected this finding for those who endorsed LM, because believing that happiness is fleeting may be related to seizing current opportunities to engage in fun and enjoyable activities that promote well-being. Although we did not originally expect DH to predict current well-being, as mentioned before, a component of eudaimonic well-being is experiencing a sense of meaning, purpose, and engagement in life (Diener et al., 2010). Thus, people who endorse DH may have reported greater current well-being because they felt a sense of meaning, purpose, and engagement in their lives that pursuing long-term goals provides.

Study 3: Malleability of DH and LM Beliefs and Downstream Effects

Although the studies thus far suggest that DH and LM uniquely predict goal pursuit, anticipated affect, and well-being, what remains unknown is whether lay theories of happiness—as an investment versus fleeting—underlie these beliefs. Study 3 thus sought to provide causal evidence for this link, by examining the consequences of activating lay theories of happiness on DH and LM beliefs and how doing so impacted goal-related intentions and anticipated affect. Moreover, we sought to test the malleability of DH and LM beliefs, to see whether situational exposure to messages conveying different lay theories of happiness could impact momentary endorsement of these beliefs. Finally, to further test the unique predictive validity of DH and LM, we assessed and controlled for other lay theories of happiness in the present study.

Method

Participants ($N = 518$) were recruited from the introductory psychology Subject Pool at a large public university. As before, we excluded participants if they did not list a focal goal ($n = 1$),⁵ leaving a final sample of 517 participants (see Table 1). Participants were randomly assigned to read a bogus *New York Times* article intended to activate lay theories of happiness as an investment or fleeting (see Methodology File). In the happiness is an investment condition, participants read statements such as:

...research has shown that the experience of happiness, like money in an investment account, can be grown over time. Therefore, individuals may benefit the most when they decide to do things that will make them feel happier at a later point in time.

In the happiness is fleeting condition, participants read statements such as:

...research has shown that the experience of happiness, like the value of money in an investment account, can be short-lived. Therefore, individuals may benefit the most when they decide to do things that make them feel happy whenever the opportunity arises.

Afterward, participants reported their DH ($\alpha = .88$) and LM beliefs ($\alpha = .91$). The most common focal goals were academic (45%), job-related (19%), and personal growth-related (14%)

⁵ We did not ask participants if they wanted to withdraw their data, so all participants' data were retained after excluding one participant who did not list a focal goal.

goals. Next, participants completed measures assessing other lay theories of happiness: (a) *likelihood of being happier in the future* (e.g., “How likely is it that you will be happier than you currently are in the future?” three items, $\alpha = .66$) from 1 = *not at all* to 7 = *extremely*; and Tullett and Plaks’ (2016) measures of: (b) *perceived controllability of happiness* (e.g., “In all honesty, if someone is unhappy they can usually do something to change that,” three items, $\alpha = .75$) (c) *flexibility in happiness over time* (e.g., “Happiness can change a lot throughout a person’s life,” three items, $\alpha = .68$), and (d) *internal locus of control* (e.g., “A person’s happiness comes from within, not from their circumstances,” three items, $\alpha = .68$) from 1 = *strongly disagree* to 7 = *strongly agree*. Next, participants completed the dependent measures: (a) *intentions to engage in focal goal pursuit* (e.g., “Over the next week, how much time do you plan to spend working toward this goal?” two items, $r = .57, p < .001$); (b) *intentions to engage in nonfocal goal pursuit* (e.g., “Over the next week, how much time do you plan to spend doing things you enjoy that may not be directly tied to the personal goal you wrote about earlier?” three items, $\alpha = .85$); (c) *anticipated positive affect* (how happy, proud they would feel if they achieved their focal goal, two items, $r = .67, p < .001$); and (d) *anticipated negative affect* (how anxious, guilty, regretful they would feel from engaging in fun/enjoyable activities instead of working on their focal goal, three items, $\alpha = .80$).

Results

Table 8 shows correlations among the variables. First, we conducted a one-way mixed ANCOVA in which condition was the manipulated variable (i.e., happiness is an investment vs. fleeting article) and DH and LM beliefs were assessed as a within-person variable, controlling for likelihood of future happiness, perceived controllability, flexibility, and locus of control of happiness. We tested the Condition \times Beliefs interaction using a mixed ANCOVA, because we wanted to compare whether the difference in situational activation of state levels of DH and LM beliefs varied as a function of the condition participants were assigned to. That is, we wanted to examine whether DH beliefs were activated more strongly compared with LM beliefs in one condition versus the other, rather than just looking at the overall effect of condition on DH and LM beliefs, respectively. Results showed the expected Condition \times Beliefs interaction, $F(1, 511) = 7.53, p = .006, \eta_p^2 = .015$ (see Figure 1). When participants read that happiness is an investment (vs. fleeting), they showed higher DH beliefs; when they read that happiness is fleeting (vs. an investment), they tended to show higher LM beliefs (see Table 9). In addition, participants who read that happiness is an investment showed higher DH (vs. LM) beliefs. Interestingly, those who read that happiness is fleeting also tended to show higher DH (vs. LM) beliefs. Perhaps among college students, DH beliefs may be more normative, so shifting to LM may have been harder to do with a brief, one-time news article manipulation.^{6,7}

Next, we examined whether the experimental manipulation affected the dependent variables. An ANCOVA—with condition as the independent variable and the other lay theories of happiness as covariates—showed a marginal effect of condition for focal goal pursuit, $F(1, 511) = 3.02, p = .083, \eta_p^2 = .006$ (see Table 10). As predicted, participants intended to engage in more focal goal

pursuit if they read that happiness is an investment (vs. fleeting). For nonfocal goal pursuit, there was no significant effect of Condition, $F(1, 511) = .13, p = .72, \eta_p^2 = .000$.

For anticipated positive affect, there was a marginal effect of Condition, $F(1, 510) = 3.32, p = .069, \eta_p^2 = .006$.⁸ Participants expected to feel more positive affect from achieving their focal goal if they read that happiness is an investment (vs. fleeting). For anticipated negative affect from pursuing nonfocal goals, there was a significant effect of Condition, $F(1, 511) = 5.37, p = .021, \eta_p^2 = .010$; participants expected to feel more negative affect from pursuing nonfocal goals if they read that happiness is an investment (vs. fleeting).

Next, we ran mediational analyses to determine whether participants in the happiness is an investment condition showed higher DH (but not LM) beliefs, which in turn were expected to predict greater intentions to pursue focal goals, more anticipated positive affect, but also more anticipated negative affect. We used Hayes’ (2018) PROCESS macro (model 4) and entered condition as the independent variable, DH and LM beliefs as the mediators, likelihood of future happiness, perceived controllability, flexibility, and locus of control of happiness as covariates, and each dependent measure into their respective model. Results are shown in Figures 2–4. As expected, participants who were led to believe that happiness is an investment (vs. fleeting) showed greater endorsement of DH (but not LM), which predicted greater future behavioral intentions to engage in focal goal activities, greater anticipated positive affect from achieving focal goals, and more anticipated negative affect from engaging in nonfocal goal activities.

Discussion

Overall, Study 3 suggests that lay theories of happiness as an investment versus fleeting underlie beliefs about DH and LM. When people were led to think of happiness as an investment, they believed in DH and in turn, intended to pursue their focal goals more and anticipated feeling happier and prouder upon achieving their focal goal. However, they also expected to feel more anxious, guilty, and regretful when engaging in activities that took time away from their focal goal pursuits, presumably because nonfocal goal activities were viewed as “wasted opportunities” that did not contribute to future happiness. We did not find effects of the manipulation on nonfocal goal pursuit; this could be because nonfocal goal activities may inherently be more spontaneous and unplanned and thus difficult to ask people to report on beforehand.

⁶ Results were the same with or without covariates, except for focal goal pursuit, which became non-significant when removing covariates (see the online supplemental materials). Results were the same with or without including outliers.

⁷ Results of an ANCOVA examining the effect of Condition on each belief separately revealed a significant main effect of Condition in predicting DH beliefs, $F(1, 498) = 6.25, p = .013, \eta_p^2 = .012$, and LM beliefs, $F(1, 498) = 4.11, p = .043, \eta_p^2 = .008$. As predicted, participants reported higher DH beliefs when they read the article about happiness being an investment ($M = 5.49, SE = .06$) versus fleeting ($M = 5.30, SE = .05$), and higher LM beliefs when they read the article about happiness being fleeting ($M = 4.96, SE = .06$) versus an investment ($M = 4.78, SE = .06$).

⁸ Degrees of freedom differ slightly across results because some participants did not complete all items in the study.

Table 8
Zero-Order Correlations for Study 3

Variable	1	2	3	4	5	6	7	8	9	10
1. Delaying happiness	—									
2. Living in the moment	-.29***	—								
3. Likelihood of future happiness	.28***	.01	—							
4. Perceived controllability of happiness	.08 ⁺	.08 ⁺	.33***	—						
5. Flexibility/Stability of happiness	-.02	.02	.04	.17***	—					
6. Internal locus of control of happiness	.04	.02	.25***	.33***	.06	—				
7. Focal goal pursuit intentions	.39***	-.07	.23***	.15**	-.01	.05	—			
8. Nonfocal goal pursuit intentions	-.17***	.22***	.03	-.08 ⁺	-.14**	-.11**	-.23***	—		
9. Anticipated positive affect	.16***	.03	.17***	.19***	.23***	.05	.19***	-.14**	—	
10. Anticipated negative affect	.39***	-.13**	.05	-.06	-.13**	.01	.40***	-.21***	.15**	—

⁺ $p < .10$. ** $p < .01$. *** $p < .001$.

In addition to showing that lay theories underlie DH and LM, the current study revealed the malleable nature of these beliefs. That is, although DH and LM may typically be viewed as trait-like beliefs about the link between goal pursuit and happiness, the present findings suggest that these beliefs are also state-like and can vary in strength of endorsement depending on situational cues.

Study 4: Daily Diary Study

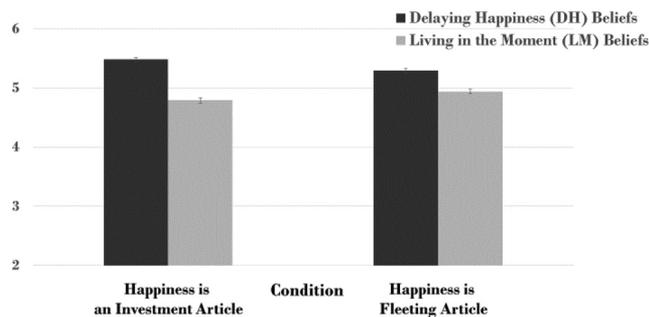
Study 3 showed that when lay theories of happiness as an investment versus fleeting were made situationally salient, participants more strongly believed in DH or LM. Thus, although individuals may chronically endorse one belief over another, people's beliefs about DH and LM may fluctuate. Extending these ideas, the final study examined how shifts in people's beliefs about DH versus LM shaped their daily goal pursuits, affective reactions to goal progress, and well-being in everyday life.

Method

Participants and Procedure

Participants ($N = 166$) from the introductory psychology subject pool at a large university participated in a 12-day daily diary study. Sample size was based on available resources; researchers using the university subject pool were restricted to collecting up to 25 participants per week over 6 weeks. Participants were excluded if they completed less than 1/3 of the daily reports ($n = 13$; see

Figure 1
Study 3 Results



Note. Error bars represent the standard error around the mean of each condition.

McMahon & Naragon-Gainey, 2019; Naragon-Gainey, 2019; which used similar exclusion criteria) or completed the daily reports extremely quickly (i.e., completed the entire survey in under 60 seconds) with very little variability in responses (i.e., responded with the same scale point for all items on a page; $n = 5$). The final sample was 148 (see Table 1).

In Phase I, participants came to the lab and completed baseline and covariate measures. As in the previous studies, they described an important focal goal and completed the DH ($\alpha = .91$) and LM scales ($\alpha = .93$). The most common focal goals were academic (53%), job-related (19%), and financial-related (13%). They then completed scales assessing Grit ($\alpha = .77$), Consideration of Future Consequences ($\alpha = .77$), Self-control ($\alpha = .76$), Future Focus ($r = .76$, $p < .001$), Protestant Ethic ($\alpha = .63$), Conscientiousness ($r = .54$, $p < .001$), Delay of Gratification ($\alpha = .58$), Present Focus ($r = .55$, $p < .001$), Mindfulness ($\alpha = .79$), and Impulsivity ($r = .70$, $p < .001$). Afterward, participants were instructed on how to complete the daily questionnaires by clicking on a link they would receive via e-mail every night over the course of the study.

In Phase II, participants completed a brief survey on their computer or other device before going to bed every night for 12 days. The survey asked questions pertaining to their DH and LM beliefs that day, focal versus nonfocal goal pursuit they engaged in that day, positive and negative affect, and well-being, which were embedded among filler items. Participants received course credit for participating.

Daily Diary Survey Items

State DH and LM Beliefs. To remind participants of the focal goal they had written about during Phase I, participants were asked to recall the important goal that they had listed during the in-lab portion of the study and to briefly restate that goal. Thinking about this goal, they responded to state DH belief items such as, “Today, I felt that one must work hard and make sacrifices now to enjoy life later” (three items, $M \alpha = .93$, range = .88–.96) from 1 = *strongly disagree* to 7 = *strongly agree*. To assess state LM beliefs, participants responded to items such as, “Today I felt that I wanted to seize the moment and enjoy life as much as possible now versus someday in the distant future” (three items, $M \alpha = .91$, range = .87–.94).

Focal Versus Nonfocal Goal Pursuit. Participants reported how much they engaged in focal goal pursuit (e.g., “Today, I put a

Table 9
Descriptive Statistics and Results for Study 3

Condition	<i>M (SD)</i>		Mean difference of DH vs. LM Beliefs
	DH Beliefs	LM Beliefs	
Happiness is an investment article (<i>N</i> = 235)	5.48 (.89)	4.79 (1.01)	$M_{diff} = .70, SE = .12, p < .001, 95\% CI [.51, .89]$
Happiness is fleeting article (<i>N</i> = 282)	5.29 (.91)	4.94 (.92)	$M_{diff} = .34, SE = .09, p < .001, 95\% CI [.17, .51]$
	$M_{diff} = .20, SE = .08$ $p = .009^{**}$ 95% CI [.05, .35]	$M_{diff} = -.16, SE = .09$ $p = .067^{+}$ 95% CI [-.33, .01]	

Note. DH = delaying happiness; LM = living in the moment.

⁺ $p < .10$. ^{**} $p < .01$.

lot of time and effort into pursuing my goal,” four items, $M \alpha = .95$, range = .93–.97) and nonfocal goal pursuit (e.g., “Today, I did something fun that wasn’t related to my goal”) from 1 = *not at all* to 7 = *very much* (four items, $M \alpha = .96$, range = .93–.98).

Well-Being. Participants reported how satisfied they were with life, how competent they felt, and how much autonomy (i.e., choice and control over their life) they felt today on a scale from 1 = *not at all* to 7 = *very much* (three items, $M \alpha = .76$, range = .70–.81).

Positive Affect. Participants reported how happy and proud they felt today from 1 = *not at all* to 7 = *very much* (two items, $M r = .61$, range = .52–.72).

Negative Affect. Participants indicated how anxious and depressed they felt today from 1 = *not at all* to 7 = *very much* (two items, $M r = .49$, range = .30–.54).

Results

Participants completed 1,544 daily reports of a possible 1,776 reports (87% average completion rate). Table 11 reports descriptive statistics including between-person means and standard deviations and between- and within-person correlations and intraclass correlations of daily diary variables. Intraclass correlations showed that there was substantial variability at both levels for daily variables (i.e., 33% to 58% of the variance was attributable to differences between people; the remainder of the variance was attributable to within-person variability across days). DH and LM were uncorrelated, both at the within- and between-person levels, whereas focal and nonfocal goal pursuit were significantly related at the within-person level only ($r = -.29$).

Data Analytic Strategy

We used MPlus 8.1 (Muthén & Muthén, 2009) to conduct multilevel modeling within the structural equation modeling framework.⁹ Given that daily reports of the variables were nested within persons, multilevel modeling is necessary to handle the nonindependence of observations (Kenny et al., 2003). MPlus conducts multilevel analyses by creating two uncorrelated latent variables that represent between-person (i.e., overall individual differences) and within-person (i.e., fluctuations across days) variance for each daily variable. As such, the within-person estimates are group mean-centered and analyses for each level controls for variability in the other. Robust maximum likelihood estimation was implemented to account for missing data and deviations from normality. We examined model fit

using the following criteria: CFI should be .90 to .95 for good fit and above .95 for excellent fit (Hu & Bentler, 1999), RMSEA should be at or below .06 (Hu & Bentler, 1999), and SRMR should be at or below .08 (Browne & Cudeck, 1992).

For each analysis presented, we tested effects at the within-person level (which represent daily deviations from one’s average levels of each variable) and the between-person level (which represent individual differences in each variable throughout the course of the study). Unlike traditional MLM, multilevel SEM creates orthogonal latent variables that parse variance into within-person variance (controlling for individual differences across participants) and between-person variance (controlling for variability within a person across days). We ran a multilevel regression and two multilevel path analyses (one for focal goals and the other for nonfocal goals), with the models tested at the within- and between-person levels simultaneously. With regard to covariates, day of study participation was included in every within-person analysis to account for linear trends over time, and between-person covariates were included if they correlated significantly with DH or LM (see Table 11). Thus, all within-person regression paths in each analysis controlled for day of study participation, and all between-person regression paths in each analysis controlled for Grit, Consideration of Future Consequences, Delay of Gratification, Impulsivity, and Future Focus.

The regression analyses presented in Table 12 included all outcome variables in a single analysis, and their residual variances were allowed to correlate with one another. The predictors are all shown in Table 12, which include DH and LM at both levels, as well as the covariates at each level described above. The path analyses shown in Figures 5 and 6 included DH and LM as predictors of focal (see Figure 5) or nonfocal (see Figure 6) goals, along with the within-person and between-person covariates described previously as predictors. Focal (see Figure 5) or Nonfocal (see Figure 6) goals, along with the covariates described previously, then predicted Negative Affect, Positive Affect, and Well-Being. All exogenous variables, including covariates, were allowed to correlate with one another in the between-person model.

⁹ We tested assumptions specific to multilevel structural equation modeling, which include normality and the absence of multicollinearity, and we also tested for outliers. Values of skewness and kurtosis indicated no more than minimal departures from normality, but to be conservative, we used robust estimators (MLR) in all analyses that correct for and model any degree of non-normality that is present. There were no outliers or evidence of multicollinearity.

Table 10
Descriptive Statistics and Results for Study 3

Condition	Intentions to engage in focal goal activities	Intentions to engage in nonfocal goal activities	Anticipated positive affect from pursuing focal goal	Anticipated negative affect from pursuing nonfocal goal
Happiness is an investment article ($N = 235$)	4.76 (.07) 95% CI [4.63, 4.89]	3.53 (.06) 95% CI [3.41, 3.65]	6.74 (.04) 95% CI [6.65, 6.82]	4.59 (.09) 95% CI [4.42, 4.75]
Happiness is fleeting article ($N = 282$)	4.60 (.06) 95% CI [4.49, 4.72] $M_{diff} = .16, SE = .09$ $p = .083^+$ 95% CI [-.02, .33]	3.56 (.06) 95% CI [3.45, 3.67] $M_{diff} = -.03, SE = .08$ $p = .718$ 95% CI [-.20, .14]	6.62 (.04) 95% CI [6.54, 6.70] $M_{diff} = .12, SE = .06$ $p = .047^*$ 95% CI [.00, .24]	4.32 (.08) 95% CI [4.16, 4.47] $M_{diff} = .27, SE = .12$ $p = .021^*$ 95% CI [.04, .50]

Note. Table reports adjusted means (with standard errors) and 95% confidence intervals.

⁺ $p < .10$. * $p < .05$.

Direct Effects of DH and LM Beliefs

We first examined the direct effects of DH and LM on engagement in focal and nonfocal goal pursuit, positive affect, negative affect, and well-being.¹⁰ These analyses were tested at both the within-person and between-person levels, including covariates as described previously. Standardized regression paths are shown in Table 12.

For the within-person models, on days when participants reported higher than average levels of DH, they engaged in more focal goal pursuit, experienced more positive affect, and greater well-being. Perhaps endorsing DH on a given day contributes to greater positive affect and well-being that day because of engaging in more focal goal pursuit that day. On days when participants reported higher than average levels of LM, the more they engaged in nonfocal goal pursuit and experienced greater well-being. Although DH and LM were both associated with greater well-being and positive affect on a given day, these associations were generally stronger for LM than for DH. In addition, on days when participants reported higher than average levels of LM, they reported lower negative affect that day, whereas this link was not found for DH. For the between-person models, participants with higher DH beliefs throughout the study reported more focal goal pursuit, but not greater well-being. They also did not show more positive or negative affect, but this may be because affect was not directly measured in relation to focal or nonfocal goal pursuit as in the previous studies. Last, consistent with the meta-analyses, participants with higher LM beliefs throughout the study showed more nonfocal goal pursuit and greater well-being. They also reported more positive affect and less negative affect, which makes sense given that affect and well-being are likely to be related.

Path Analyses

We next tested two path models that examined the role of focal versus nonfocal goal pursuit in explaining why DH and LM beliefs differentially relate to affect and well-being. The first model (see Figure 5) showed that DH—holding constant LM beliefs—predicted more focal goal pursuit, which in turn predicted greater well-being, positive affect, and lower negative affect. Covariates are not displayed but were included in all path analyses as described previously. At the within-person level, on days when participants endorsed higher DH, they engaged in more focal goal pursuit, which predicted more positive affect (and more negative affect) that day. At the between-person level, participants with

higher DH overall engaged in more focal goal pursuit, which predicted greater positive affect, negative affect, and well-being.

The second path model examined whether LM—holding constant DH beliefs—predicted more nonfocal goal pursuit, which predicted higher positive affect and well-being, and lower negative affect (see Figure 6). Hypotheses were fully supported at the within-person level: On days when participants reported higher LM beliefs, they engaged in more nonfocal goal pursuit, which predicted more positive affect and well-being, and lower negative affect that day. The between-person results also supported this model, except that nonfocal goal activities were not significantly associated with negative affect.

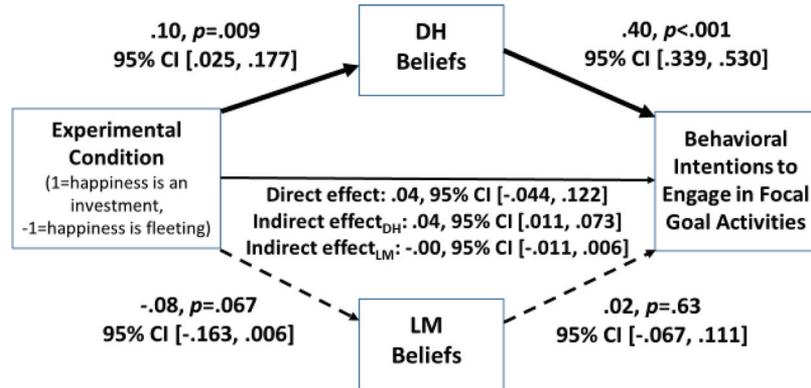
Discussion

Overall, Study 4 found that DH and LM beliefs differentially predict goal pursuit, affective reactions, and well-being in everyday life. Participants who endorsed DH beliefs—at both the within- and between-person level—were more involved in focal goal pursuit, consistent with our earlier studies. Those who endorsed LM beliefs—both daily and across individuals—were more involved in nonfocal goal pursuit. Across individuals, LM beliefs predicted experiencing more positive affect, less negative affect, and greater well-being; DH beliefs were not significantly related to these variables at the between-person level. However, at the within-person level, those who endorsed DH or LM on a given day experienced greater well-being and positive affect that day, and less negative affect for those who endorsed LM.

Path analyses revealed that on days when participants believed in DH, they engaged in more focal goal activities, which was related to experiencing more positive affect that day but also more negative affect. Thus, although pursuing focal goals may predict feelings of happiness and pride, the fact that it also predicted negative affect suggests that people may perceive remaining discrepancies between their current state and their desired state in terms of their focal goal progress. In addition, DH predicted less engagement in nonfocal

¹⁰ We analyzed positive and negative affect separately in the current study to be consistent with the way we assessed positive and negative affect in our previous studies. We then combined the other items—reflecting autonomy, competence, and life satisfaction—into a measure of well-being to be consistent with the way we assessed well-being in the prior studies, which also included life satisfaction and indicators of psychological well-being.

Figure 2
Results of Mediation Analysis Predicting Behavioral Intentions to Engage in Focal Goal Activities (Study 3)



Note. DH = delaying happiness; LM = living in the moment. Paths reflects unstandardized coefficients. Bolded paths show the significant indirect effects from experimental condition to the outcome variable. Analysis controls for perceived likelihood of future happiness, controllability, flexibility, and locus of control of happiness.

goal pursuit on a given day, which may also contribute to negative affective experiences. By contrast, on days when participants endorsed higher LM beliefs, they engaged in more fun and enjoyable nonfocal goal activities, which was related to more positive affect, less negative affect, and greater well-being. Thus, there may be hedonic and psychological benefits of engaging in nonfocal goals that those who endorse DH may be missing out on, because they are so focused on pursuing focal goals to invest in future happiness.

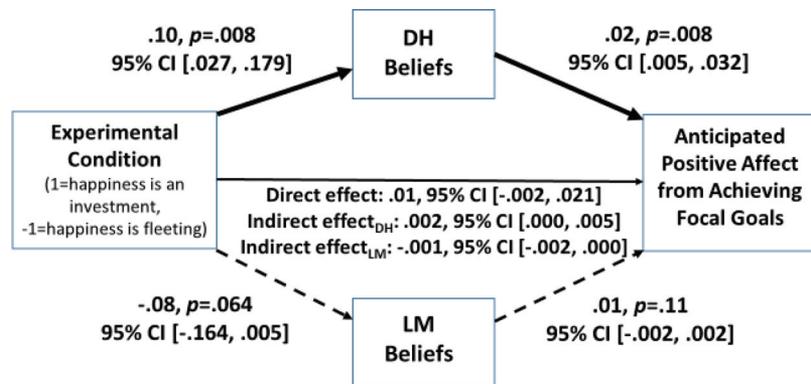
General Discussion

People’s ideas about happiness play a key role in shaping goal-related behavior, affective reactions to goal pursuit, and well-being.

When people think of happiness as something to be invested in over time, they are likely to endorse DH—the belief that making progress toward important focal goals, by sacrificing opportunities for happiness today, will yield greater happiness in the future. When people think of happiness as fleeting, they are likely to endorse LM—the belief that one should seize proximal opportunities to savor happiness today, rather than later, before the opportunity passes.

Across multiple studies using a wide range of methodologies and samples, we found converging support for the unique predictive validity of DH and LM beliefs. DH beliefs predicted greater anticipated positive affect upon achieving one’s focal goal and greater well-being but also more negative affect when engaging in nonfocal goal activities and less tendency to discount delayed rewards. LM beliefs predicted more engagement in fun and enjoyable nonfocal

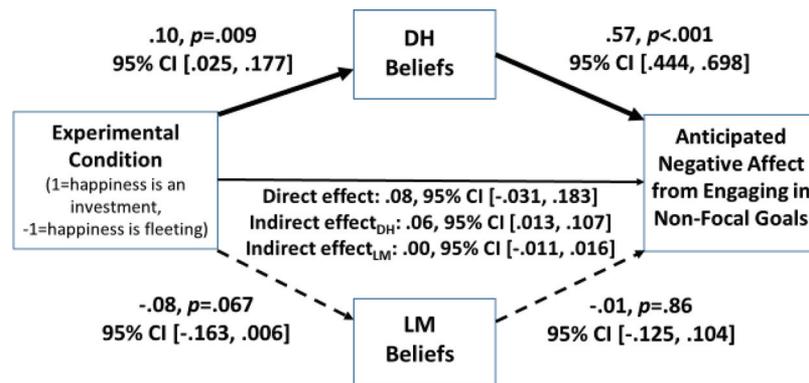
Figure 3
Results of Mediation Analysis Predicting Anticipated Positive Affect From Achieving Focal Goals (Study 3)



Note. DH = delaying happiness; LM = living in the moment. Paths reflects unstandardized coefficients. Bolded paths show the significant indirect effects from experimental condition to the outcome variable. Analysis controls for perceived likelihood of future happiness, controllability, flexibility, and locus of control of happiness.

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Figure 4
Results of Mediation Analysis Predicting Anticipated Negative Affect From Engaging in Nonfocal Goals (Study 3)



Note. DH = delaying happiness; LM = living in the moment. Paths reflect unstandardized coefficients. Bolded paths show the significant indirect effects from experimental condition to the outcome variable. Analysis controls for perceived likelihood of future happiness, controllability, flexibility, and locus of control of happiness.

goal activities and greater well-being. Although LM also predicted greater anticipated positive affect upon achieving one's focal goals, additional data (see Study 5 in the [online supplemental materials](#)) revealed that this finding was specific to expectations of happiness being relatively transient (i.e., lasting 5 hrs to 1 year from now), whereas DH predicted greater anticipated happiness from achieving one's focal goal that lasted longer (i.e., 5 years to 50 years from now).

Furthermore, results of the internal meta-analysis revealed that both LM and DH beliefs predicted greater well-being. Although we did not originally expect DH to predict current well-being, a key feature of well-being—and eudaimonic well-being in particular—is feeling a sense of engagement, meaning, and purpose in life. Because people who believe in DH are motivated to invest in their future happiness, they may derive psychological benefits by pursuing important focal goals today.

Alternatively, another reason why DH and LM may have been related to greater well-being is because both of these beliefs reflect a goal-oriented state of *wanting* to pursue happiness. Past research suggests that when people pursue happiness in a deliberate way, they benefit from this pursuit. For example, individuals who self-select into studies that are meant to enhance their happiness derive more emotional and psychological benefits from engaging in happiness-boosting activities, compared with those who are less motivated to pursue happiness as a goal (Lyubomirsky et al., 2005, 2011). Thus, both “motivation and investment in becoming a happier person matters” (Lyubomirsky et al., 2011, p. 400) Accordingly, although DH and LM beliefs reflect different paths to achieving happiness, they both reflect the ultimate goal to be happy, which is why they both may be related to greater well-being.

Study 3 demonstrated that lay theories of happiness underlie beliefs about DH and LM and that these beliefs are malleable and can shape behavioral intentions to engage in focal goal activities, greater anticipated positive affect from achieving one's focal goals, but also more negative affect from engaging in nonfocal goal activities. Study 4 revealed that daily fluctuations in people's

beliefs about DH and LM shaped their actual goal-related behavior, affective responses, and well-being in everyday life.

Limitations and Future Directions

DH and LM beliefs were either unrelated or inversely related in the current studies, which may be attributable in part to the way we set up and operationalized DH and LM as potentially opposing constructs. That is, to examine the unique outcomes associated with DH versus LM, we explicitly highlighted and emphasized the differences between DH and LM beliefs and related measures, focusing on situations where DH and LM are likely to diverge. However, we acknowledge that these concepts are conceptually independent and do not necessarily have to be opposite of each other. That is, it is theoretically possible for people to endorse both DH and LM. Future research could further refine this measure or test boundary conditions to examine the possibility of endorsing (or not endorsing) both types of beliefs. For example, one might believe that working hard toward focal goals will increase the intensity and duration of future happiness, while also believing that life should be enjoyed and savored in the moment by engaging in fun and enjoyable activities that have little to do with making progress toward one's focal goals.

The present research shares similarities and differences with past work on experienced happiness (i.e., being happy *in* one's life) and remembered happiness (i.e., being happy when looking back and reflecting *about* one's life; Kahneman, 2011). When asked to choose between the two types of happiness, people tend to prefer experienced (vs. remembered) happiness over longer timeframes (e.g., one's life) but not over shorter timeframes (e.g., 1 hr; Mogilner & Norton, 2019). In the current research, we did not focus specifically on this distinction but drew upon theories of affect pertaining to the magnitude and time course of happiness (Igou, 2004; Wilson & Gilbert, 2003). Whereas LM can be viewed as a decay function in which happiness is thought to dissipate over time,

Table 11
Descriptive Statistics and Zero-Order Correlations for Study 4 (Daily Diary Study)

Variable	M (SD)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1. Conscientiousness	5.43 (1.19)																		
2. Grit	3.09 (0.25)	.34***																	
3. CFC	2.94 (0.77)	-.31***	-.29***																
4. Self-control	3.34 (0.85)	.34***	.54***	-.28***															
5. Delayed gratification	3.58 (0.50)	.45***	.33***	.33***	.37***														
6. Mindfulness	4.13 (0.92)	.36***	.43***	-.30***	.37***	.24**													
7. Protestant ethic	5.55 (1.00)	.27***	.20*	-.14	.10	.26**	.13												
8. Impulsivity	2.19 (0.68)	-.08	-.28***	.26**	-.42***	-.11	-.20*	-.14											
9. Present focus	2.68 (0.61)	.04	.04	.09	.10	.01	-.16*	.15											
10. Future focus	3.23 (0.67)	.18*	.09	-.23**	.10	.26**	-.04	.22**	.04	.02									
11. DH beliefs	4.56 (1.02)	.14	.20*	-.19*	.00	.29**	.09	.13	-.12	.05	.24*	.58	-.14	.32***	-.23***	.08	.06	.07	.07
12. LM beliefs	4.47 (0.97)	.00	-.02	.15	-.14	-.02	-.02	.00	.17*	.16	-.09	.02	.54	-.14**	.30***	.16***	.13***	-.09**	-.09**
13. Focal goal activities	2.54 (0.75)	.16	.10	-.12	-.03	.22*	.00	.07	.05	.08	.13	.29**	-.01	.43	-.29***	.06	.08	.13***	.13***
14. Nonfocal goal activities	2.96 (0.68)	.05	-.16*	.01	-.05	.03	.11	.10	.14	.01	-.12	-.19	.39**	.07	.33	.30***	.30***	-.15***	-.15***
15. Well-being	2.96 (0.68)	.24**	.11	-.15	.09	.35***	.15	.21*	.10	.02	-.02	.02	.22*	.26**	.59***	.54	.61***	-.24***	-.24***
16. Positive affect	3.04 (0.70)	.21**	.09	-.10	-.03	.32***	.16	.21*	.17*	.10	.02	.15	.29*	.46***	.49***	.71***	.50	-.33***	-.33***
17. Negative affect	2.10 (0.65)	-.11	-.25**	-.01	-.16	-.12	-.32***	-.22*	.14	-.18*	.11	-.06	-.28**	.23**	-.09	-.19*	-.26*	-.26*	.44

Note. DH = delaying happiness; LM = living in the moment; CFC = consideration of future consequences. Within-person correlations are shown above the diagonal and between-person correlations are shown below the diagonal. Intraclass correlations for daily diary variables are shown in parentheses on the diagonal.
* $p < .05$. ** $p < .01$. *** $p < .001$.

DH can be viewed as an exponentially compounding function in which happiness grows over time based on current investments.

People who believe in LM prefer happiness now, because over the long-term that happiness is thought to diminish and is unlikely to be experienced again. People who believe in DH think that happiness will continually increase over the long-term as long as they sacrifice opportunities for happiness in the present to invest in their focal goal pursuits. Thus, whereas both LM and DH involve short-term and long-term considerations of happiness, Mogilner and Norton's (2019) research finds that depending on temporal frame, people prefer one type over another—specifically, they show a preference for experienced happiness for longer timeframes, but not for shorter timeframes. Future research could explore whether people who endorse LM and DH differentially prefer one type of happiness over the other. Although individuals who endorse LM might prefer experienced happiness over remembered happiness, we do not have a priori reasons to predict whether those with DH beliefs would choose one type of happiness over the other. Researchers could also examine conditions under which individuals may strategically adopt one belief over another depending on the demands of the situation. For example, when studying for an upcoming test, it may be optimal to believe in DH and pursue one's focal goal. On the other hand, when one is on vacation, it may be optimal to endorse LM beliefs that promote nonfocal goal pursuit that allow for fun and enjoyment, thus boosting happiness now versus later.

Another area for future research is to investigate the affective consequences of believing in DH or LM during real-life experiences. For example, does believing in DH actually lead to more intense and longer-lasting happiness? Research on affective forecasting suggests that people are not very accurate at predicting the intensity and duration of their future emotional reactions, because they overestimate the impact of future events on their expected emotional states and fail to anticipate how unrelated events in their lives may affect their future thoughts and feelings (Wilson & Gilbert, 2003). People also tend to turn novel, emotion-eliciting events into ordinary experiences that eventually seem mundane. Thus, even if individuals expect to feel exhilarated from passing the bar exam or making their first million, their actual happiness may ultimately dissipate and return to baseline levels due to the tendency to "ordinize" events soon after they occur. In contrast, those who endorse LM may feel intense moments of happiness, as opportunities to experience such feelings arise, but these may be short-lived until another opportunity presents itself. Thus, whereas DH may predict a durability bias in how one expects to feel when achieving their focal goal, LM may be less predictive of such biases.

Although we found that DH and LM beliefs were related to goal pursuit across distinct samples, there may be limits to generality given that participants were college students and adults living in the United States. Given that lay theories involve ontological assumptions about the social world (Plaks et al., 2009), they may be influenced by sociocultural norms. Socialization experiences within families, relationships, social networks, and cultures may differentially reinforce DH or LM beliefs. For example, East Asian cultures emphasize self-improvement over self-enhancement (Heine et al., 1999) and may therefore promote values of making progress toward important focal goals, rather than engaging in activities that leads to happiness in the moment.

As another example, individuals from socioeconomically disadvantaged families or neighborhoods may be inclined to adopt LM

Table 12
Direct Effects of DH and LM Beliefs (Study 4)

Measure	Focal goals	Nonfocal goals	Well-Being	NA	PA
Within-person					
DH beliefs	.31*** (.04)	-.19*** (.04)	.10* (.04)	.08* (.04)	.06 (.04)
LM beliefs	-.10** (.03)	.27*** (.04)	.17*** (.03)	.14*** (.03)	-.09** (.03)
Day	-.06* (.03)	-.06 (.03)	-.08* (.03)	-.05 (.04)	-.06* (.03)
Between-person					
DH beliefs	.24* (.09)	-.21* (.09)	-.09 (.10)	.07 (.11)	-.01 (.09)
LM beliefs	-.02 (.10)	.39*** (.10)	.21* (.10)	.27* (.11)	-.29*** (.08)
Grit	.03 (.08)	-.18* (.08)	.01 (.07)	.00 (.08)	-.22* (.09)
CFC	-.06 (.10)	-.14 (.08)	-.17* (.07)	-.12 (.08)	-.06 (.09)
Delayed gratification	.14 (.10)	.16 (.08)	.39*** (.07)	.33*** (.08)	-.07 (.09)
Impulsivity	.12 (.09)	.05 (.09)	.14 (.08)	.20* (.08)	.13 (.08)
Future focus	.03 (.09)	-.09 (.09)	-.12 (.08)	-.09 (.09)	.11 (.09)

Note. DH = delaying happiness; LM = living in the moment; CFC = consideration of future consequences; PA = positive affect; NA = negative affect. Standardized regression paths and standard errors are reported.
* $p < .05$. ** $p < .01$. *** $p < .001$.

beliefs, given the uncertainty surrounding the prospects of future rewards. According to life history theory, individuals adopt different strategies to make life decisions based on their environment. For those who grew up poor, cues about resource scarcity and mortality may lead them to prioritize the present and prefer immediate rewards. By contrast, for those who grew up financially secure, mortality cues may lead them to prioritize the future and avoid risk-taking in favor of delayed rewards (Griskevicius et al., 2011). Thus, those who experience more resource scarce environments may endorse LM, as the present holds more certainty than the future.

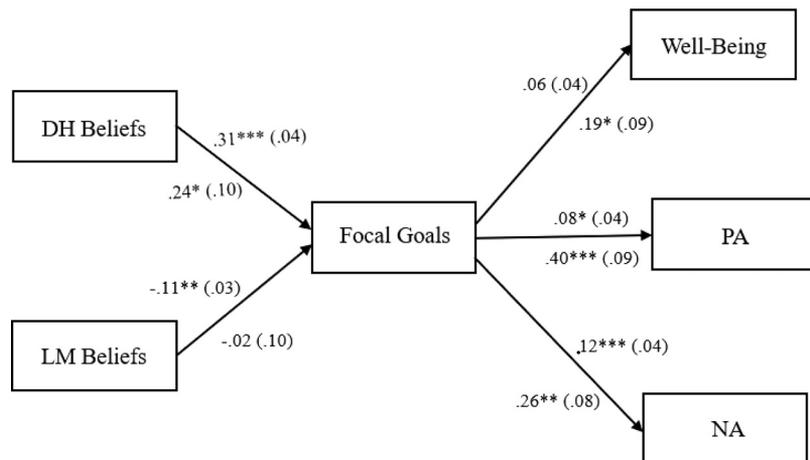
Another promising research direction is to examine how perceptions of future horizons, which alter people’s valuation of the future versus the present (Carstensen, 2006), differentially predict DH and LM beliefs. New beginnings, such as starting college or a new career, may elicit open-ended future horizons and foster thoughts of

happiness as something to be invested in, thereby strengthening endorsement of DH. By contrast, when anticipating endings to meaningful times in life, or when thoughts about the fragility of life are activated by events such as natural disasters, illness, or old age, people may think of time as finite and limited (Carstensen, 2006) and endorse LM. In sum, there are many future directions for examining how sociocultural influences, environmental conditions, and life span differences may shape people’s lay theories of happiness and corresponding beliefs about DH versus LM.

Conclusion

How people think, feel, and behave is often shaped by the beliefs they hold about happiness. When people think of happiness as an investment in the future, they are likely to endorse DH and

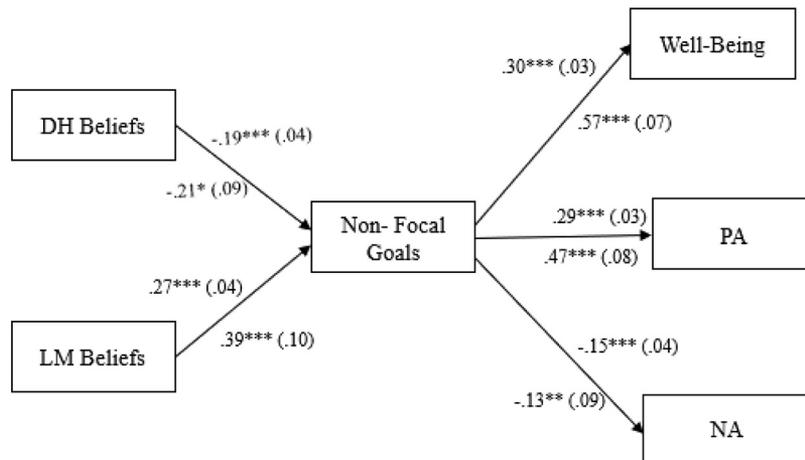
Figure 5
Study 4 Path Analysis for Focal Goal Pursuit



Note. DH = delaying happiness; LM = living in the moment; PA = positive affect; NA = negative affect. Within-person standardized parameter estimates and standard errors are shown above the regression path, and between-person estimates are shown below the path.
* $p < .05$. ** $p < .01$. *** $p < .001$.

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Figure 6
Study 4 Path Analysis for Nonfocal Goal Pursuit



Note. DH = delaying happiness; LM = living in the moment; PA = positive affect; NA = negative affect. Within-person standardized parameter estimates and standard errors are shown above the regression path, and between-person estimates are shown below the path.
* $p < .05$. ** $p < .01$. *** $p < .001$.

pursue focal goals that they believe will lead to greater happiness someday, rather than today. When people think of happiness as fleeting, they are likely to endorse LM and pursue fun and enjoyable nonfocal goal activities that maximize happiness in the here-and-now, rather than at a later time point. The present research thus challenges some of the assumptions in the literature by demonstrating how DH and LM beliefs shape self-regulation. For example, by revealing some of the costs of DH, such as increased feelings of anxiety, guilt, and regret, our research suggests that delaying rewards may not always be beneficial and provides insight into potential benefits of pursuing more immediate, short-term ends associated with LM. Overall, understanding the consequences of DH and LM beliefs may foster deeper understanding of what constitutes “successful” self-regulation. People’s beliefs about happiness may change what the end-states of goal pursuit are, thereby shaping how they pursue such goals and the affective consequences of doing so.

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