Inspiration and the Promotion of Well-Being: Tests of Causality and Mediation

Todd M. Thrash
College of William and Mary

Andrew J. Elliot
University of Rochester

Laura A. Maruskin and Scott E. Cassidy
College of William and Mary

The influence of inspiration on well-being was examined in 4 studies. In Study 1, experimental manipulation of exposure to extraordinary competence increased positive affect, and inspiration accounted for this effect. In Study 2, trait inspiration predicted an increase in positive hedonic and eudaimonic well-being variables (positive affect, life satisfaction, vitality, and self-actualization) across a 3-month period, even when the Big 5 traits, initial levels of all well-being variables, and social desirability biases were controlled. In Study 3, both trait inspiration and personal goals inspiration predicted increases in positive well-being variables across a 3-month period. In contrast, well-being did not predict longitudinal change in inspiration. Study 4, a diary study, extended the relation between inspiration and well-being to the within-person level of analysis. For given individuals, variations in inspiration across mornings predicted variations in evening levels of positive well-being variables. These effects were mediated by purpose in life and gratitude. These studies provide converging evidence that inspiration enhances well-being and document 2 parallel mediating processes.

Keywords: inspiration, positive affect, subjective well-being, gratitude, mediation

A theme of the well-being literature is that personal agency, variously construed, plays a central role in the promotion of well-being. Traits tend to be among the strongest predictors of well-being (Diener, Suh, Lucas, & Smith, 1999), and chief among these are agentic traits related to approach motivation (e.g., extraversion) or control over outcomes (e.g., locus of control). Also prominent in the literature is the goal approach, which holds that well-being is derived from striving toward valued goals (Emmons, 1986). Lyubomirsky, Sheldon, and Schkade (2005) noted that genetics and life circumstances account for only 60% of the variance in chronic levels of happiness, and they argued that the remaining 40% reflects factors under the individual's control. The prevailing message seems to be that well-being is largely a product of one's agentic activity.

We do not question the importance of agentic activity, but the emphasis on agency may have obscured other influences on well-being. Many of the experiences that individuals find most fulfilling—peak experiences (Maslow, 1968), creative insights (Sternberg & Davidson, 1995), spiritual epiphanies (James, 1902/1999), and emotions of awe and elevation (Keltner & Haidt, 2003)—cannot be controlled or directly acquired, because they involve the transcendence of one's current desires, values, or expectations. Indeed, life would likely seem bland if one's strivings were never interrupted and informed by such experiences. We propose that *inspiration*, which is central to each of the above experiences, is an important influence on well-being.

Leo Tolstoy's (1956) *The Death of Ivan Ilych* provides an illustration. Ivan Ilych had an existential crisis upon realizing that a lifetime of gratification had proved unsatisfying. As Ilych lay on his death bed in despair, his son kissed his hand and began to cry. This encounter triggered an awakening for Ilych that allowed him to rectify his life and die in peace:

> At that very moment Ivan Ilych fell through and caught sight of the light, and it was revealed to him that though his life had not been what it should have been, this could still be rectified. . . . He was sorry for [his family], he must act so as not to hurt them: release them and free himself from these sufferings. 'How good and how simple!' he thought. . . . 'What joy!' To him all this happened in a single instant (pp. 169–170).

Ilych's joy was precipitated by an experience of inspiration, in which a worthy concern (caring for his family) was revealed to Ilych, infecting him to his core and imbuing his life with purpose. Although fictional, this story resembles an experience from Tolstoy's own life (Tolstoy, 1981).

Our primary goal in the present research was to demonstrate that inspiration enhances well-being. We additionally sought to docu-

ment mediating processes. In the following, we present our conceptualization of inspiration and consider its implications for well-being.

Inspiration as a Psychological Construct

Our original, tripartite conceptualization specified the characteristics that define inspiration (Thrash & Elliot, 2003). Regardless of content (e.g., creative, spiritual) or source (e.g., the unconscious, social environment), inspiration is conceptualized as having three core characteristics: transcendence, evocation, and approach motivation. *Transcendence* refers to gaining an awareness of better possibilities. The new awareness is concrete and vivid, as reflected in vision metaphors such as illumination and insight. *Evocation* refers to the fact that inspiration is experienced as evoked; one does not feel directly responsible for becoming inspired and ascribes responsibility to something beyond the self. Finally, inspiration involves *approach motivation*; one is compelled to actualize one's new idea or vision. All three characteristics are present in Tolstoy's portrayal of Ilych's inspiration. Ilych "caught sight of the light"; the insight was "revealed to him"; and he felt that he "must act."

More recently, we have proposed that the core characteristics of inspiration reflect the combination of two component processes (Thrash & Elliot, 2004). Being inspired *by* involves the appreciation of and accommodation to the perceived intrinsic value of the evocative object (e.g., beauty of a landscape, elegance of a creative insight, or virtue in a human action). Being inspired *to* involves motivation to transmit (e.g., express, actualize, or imitate) the qualities exemplified in the evocative object. Transcendence and evocation are posited to be characteristic of being inspired *by*, whereas approach motivation is posited to be characteristic of being inspired *to*.

Construct validation studies have provided strong support for our conceptualization (Thrash, 2007; Thrash & Elliot, 2003, 2004; Thrash, Maruskin, Cassidy, Fryer, & Ryan, in press). First, inspiration has been shown to differ from another approach-focused state, positive affect (PA), in a manner consistent with the tripartite conceptualization. Relative to PA, episodes of inspiration involve comparable levels of approach-relevant variables (e.g., interest), but higher levels of transcendence-relevant variables (e.g., insight) and higher levels of evocation-relevant variables (e.g., ascription of responsibility to something beyond the self). Second, factor analytic data have confirmed that being inspired *by* and being inspired *to* are distinguishable components of inspiration and are differentially related to indicators of its core characteristics. Third, within the creativity domain, the relation between a writer's appraisal of the creativity of a seminal idea and readers' judgments of the creativity of the resulting product has been found to be mediated by the writer's inspiration (not by PA, effort, or awe), consistent with its posited transmission function.

Prior Research on Inspiration and Well-Being

The earliest accounts of inspiration linked it to madness rather than to mental health. Socrates viewed inspiration as a state of manic possession or enthusiasm (Plato, 1974). Contemporary researchers have documented an association between bipolar disorder and creativity and have shown that productivity peaks during manic episodes (Flaherty, 2004; Jamison, 1993). In light of an association between inspiration and creative productivity (Thrash & Elliot, 2003; Thrash et al., in press), these findings raise the possibility that inspiration is linked with affective disorders. However, they are also consistent with the possibility that inspiration is associated with positive affective states, perhaps in spite of any underlying pathology.

Other theory and research link inspiration or related constructs to mental health or to well-being. Neopsychoanalysts have highlighted the adaptive functions of inspiration (Hymer, 1990; Kris, 1952). A relation between inspiration and well-being is implied by Maslow's (1968) concept of peak experience, which blends elements of inspiration (e.g., passivity) and well-being (e.g., happiness). Poloma and Pendleton (1991) found that reports of peak experiences were related to PA and life satisfaction, but not to negative affect (NA). Positive psychology researchers have proposed that self-transcendent emotions, such as elevation and awe, may promote well-being, pleasure, or personal change (Haidt & Keltner, 2004; Peterson & Seligman, 2004).

The only studies that have directly operationalized both inspiration and well-being have been our construct validation studies. At the between-person level of analysis, inspiration is positively related to PA and unrelated to NA (Thrash & Elliot, 2003). At the within-person level, inspiration and PA covary positively across days (Thrash & Elliot, 2003). Particular episodes of inspiration involve heightened PA and modestly lower NA (Thrash & Elliot, 2004). Finally, inspiration and PA are distributed similarly across days of the week, except that inspiration declines on weekends and PA does not (Thrash, 2007). These studies reveal robust positive associations between inspiration and PA and null or weak negative associations with NA.

Because our construct validation studies were not designed to investigate the relation between inspiration and well-being, they leave several questions unanswered. First, it is unknown whether inspiration is related to aspects of well-being other than affect. Researchers have argued that subjective well-being (SWB) encompasses not only PA and NA but also life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985). Moreover, others have argued that SWB represents only one type of well-being, hedonic well-being, which emphasizes pleasure and satisfaction; a second type, eudaimonic well-being, comprises variables posited to be directly indicative of psychological health, such as vitality and self-actualization (Ryan & Deci, 2001; Ryff & Keyes, 1995). In the present research, we examined the constructs central to SWB (PA, NA, and life satisfaction), as well as the constructs that Ryan and Deci (2001) identified as representing eudaimonic well-being (vitality, self-actualization).

A second unanswered question is whether inspiration has a causal effect on well-being. Alternatively, inspiration may relate to well-being because it is an effect of well-being, or because inspiration and well-being have a common cause. A final question concerns mediation. The issue of mediation is secondary from an empirical standpoint, because causality is a precondition for mediation. However, mediation is critical from a conceptual standpoint, because it provides the theoretical basis for positing that inspiration influences well-being. We propose that inspiration promotes well-being because it enhances purpose in life and gratitude, which, in turn, promote well-being. In the following, we consider the role of these candidate mediators.

Mediation of the Relation Between Inspiration and Well-Being

Purpose in life. Theorists have differing perspectives on the causes of purpose or meaning, but most identify at least one of two key ingredients (for others, see Baumeister, 1991). Some have argued that purpose and meaning are derived from connecting to something that transcends the self (Buber, 1996; Frankl, 1956/1992; Nozick, 1989; Seligman, 2002). Nozick (1989), for instance, argued that something has intrinsic value to the extent that it is organically unified within its own limits (e.g., justice or beauty), whereas meaning requires relation, a crossing of boundaries. Thus, meaning in life may be derived from relating to something of intrinsic value. Others have argued that purpose and meaning are derived from pursuit of valued goals (Cantor & Sanderson, 1999; Emmons, 1999; Klinger, 1977; Scheier et al., 2006).

Inspiration is well-suited for imbuing life with a sense of purpose because it affords opportunities for transcendence of limits and for striving toward valued goals. Being inspired *by* involves the revelation of a source of intrinsic value and therefore implies the transcendence of limits; being inspired *to* involves the goal of transmitting or actualizing the intrinsically valued qualities exemplified in the evocative object. This transmission process has a deep personal significance in that the individual experiences the press or "meaningful necessity" (Becker, 1992) of participating in the transcendent. It also has a weighty sociocultural significance. Williams (1997) argued, for instance, that the function served by poets is to obey "the dictates of their internal Muse, to mediate on behalf of the rest of society and draw the culture forward towards more complex and thoughtful values" (p. 34).

The purpose instilled by inspiration is posited, in turn, to promote well-being. On the basis of his experience in a concentration camp, Frankl (1956/1992) argued that purpose was what distinguished those who survived from those who did not. Diener, Sapyta, and Suh (1998) argued that purpose is a path to SWB. Baumeister (1991) reviewed evidence suggesting that purpose is a source of happiness and meaning. Other studies have shown that purpose is related to (Keyes, Shmotkin, & Ryff, 2002; Reker, Peacock, & Wong, 1987; Ryff, 1989; Ryff & Keyes, 1995; Scheier et al., 2006; Zika & Chamberlain, 1987, 1992) or predicts improvements in (Smith & Zautra, 2004) PA, NA, and other aspects of well-being. Because inspiration is approach focused (Thrash & Elliot, 2003), we expected inspiration, via the positive sense of purpose that it instills, to enhance PA and other positive aspects of well-being, without ameliorating NA.

We anticipated that purpose would function as a partial rather than a full mediator because it primarily concerns the transcendent and motivational aspects of inspiration. The fact that inspiration is ascribed to someone or something beyond the self is also significant and suggests that gratitude functions as a second partial mediator.

Gratitude. Gratitude is a positive affective response to receiving a gift, broadly defined (McCullough, Kilpatrick, Emmons, & Larson, 2001). Solomon (1983) defined gratitude as "an estimate of gain coupled with the judgment that someone else is responsible for that gain" (p. 316). Polak and McCullough (2006) stated that "gratitude results from two cognitions: (a) that one has obtained a positive outcome and (b) that an external agent is responsible for it" (p. 348). These claims are supported by empirical studies of the cognitive antecedents of gratitude (Overwalle, Mervielde, & De Schuyter, 1995; Weiner, Russell, & Lerman, 1979).

Because inspiration involves the gains associated with transcendence (i.e., a new source of intrinsic value) and approach motivation (i.e., energy to pursue a new, valued goal), as well as the perception that something beyond the self is causally responsible, we posit that inspiration leads to feelings of gratitude toward the source of inspiration. Other theorists, representing the domains of interpersonal (Simmel, 1950), religious (Bradley, 1929), and creative (Swaffer, 1929) inspiration, have previously suggested that inspired individuals are grateful to their source.

Gratitude, in turn, is posited to promote well-being. Trait gratitude is positively related to PA, life satisfaction, vitality, and other positive aspects of well-being (Adler & Fagley, 2005; McCullough, Emmons, & Tsang, 2002; Watkins, Woodward, Stone, & Kolts, 2003) but is unrelated (Adler & Fagley, 2005; Watkins et al., 2003) or weakly negatively related (McCullough et al., 2002) to NA. Individuals' mean levels of gratitude across days are positively related to trait PA and life satisfaction, but are unrelated to NA (McCullough, Tsang, & Emmons, 2004; see also Kashdan, Uswatte, & Julian, 2006). Gratitude interventions influence PA and other positive aspects of well-being (Emmons & McCullough, 2003; Seligman, Steen, Park, & Peterson, 2005; Watkins et al., 2003) but do not consistently influence NA. We expected inspiration, via the gratitude that it instills, to enhance PA and other positive aspects of well-being without ameliorating NA. In summary, both purpose and gratitude were posited to partially mediate the effect of inspiration on positive well-being variables.

Although there are important differences among positive well-being variables, particularly between hedonic and eudaimonic variables, we did not develop differentiated hypotheses about which positive aspects of well-being are promoted by inspiration. One reason is empirical. The literature reviewed above indicates that purpose and gratitude have largely undifferentiated effects on positive well-being variables. If inspiration influences purpose and gratitude, as hypothesized, then the distal effects of inspiration would necessarily be undifferentiated. The second reason is theoretical. In theory, the purpose and gratitude afforded by inspiration should influence diverse aspects of well-being. For instance, the purpose instilled by inspiration is likely to promote hedonic aspects of well-being as the individual strives toward valued goals, and the existentially significant nature of these strivings is likely to afford eudaimonic thriving.

Study 1

The aim of Study 1 was to demonstrate experimentally that exposure to inspiring stimuli leads to greater PA. Given the diversity of inspiring stimuli, we focused on a specific source—the social environment—and content domain—competence (Elliot & Dweck, 2005). Another person's display of competence is a source of inspiration frequently cited by undergraduates (Thrash & Elliot, 2004). We predicted that witnessing Michael Jordan's competence would lead to greater PA and that this effect would be explained (mediated) by self-reported inspiration. This model should not be confused with the mediation model proposed in the introduction and tested in Study 4. In Study 1, we aimed to verify that the manipulated stimulus properties are indeed inspiring and that self-reported inspiration explains the effect of the manipulation. In

Study 4, self-reported inspiration is treated as an independent variable, and purpose and gratitude are tested as mediators of the relation between inspiration and well-being.

Method

Participants and procedure. Seventy-nine undergraduates (47 men, 30 women, 2 unspecified) in an introductory psychology course participated in this study. Participants were randomly assigned to a Jordan condition ($n = 40$) or a control condition ($n = 39$). Participants in the Jordan condition watched two video clips from Michaud and Podhoretz (2001): "Unstoppable" (2:30) and "Michael's Greatest Moves" (top three moves only; 1:01). These clips depict extraordinary performance and task mastery (see Thrash & Hurst, 2008, for an overview of these components of competence); Jordan outmaneuvers opponents and scores with skill and grace. Participants in the control condition watched "Abstract Shapes" (3:26), a recording of a computer screen saver (Gross & Levenson, 1995). Gross and Levenson (1995) validated this clip as a neutral film that elicits little emotion and that may be used to control for the effect of watching a film. After the film, participants reported their level of inspiration during the film and their current levels of PA and NA.

Measures. The measures used are outlined below.

Inspiration. Inspiration during the film was assessed using a state version of the Inspiration Scale (Thrash & Elliot, 2003), similar to that used by Thrash and Elliot (2004) but adapted to the present context. Items were as follows: "I experienced inspiration"; "Something in the film inspired me"; "I was inspired to do something"; and "I felt inspired." Items were rated from 1 (*strongly disagree*) to 7 (*strongly agree*). Responses were summed to form an inspiration index. This scale has been shown to be reliable and valid (Thrash & Elliot, 2003, 2004). Cronbach's α was .97 in the present study.

PA and NA. PA and NA after the film were assessed using the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The PA and NA scales both consist of 10 items (PA e.g., "excited"; NA e.g., "upset") that were rated from 1 (*very slightly or not at all*) to 5 (*extremely*). In this and all subsequent studies, the item *inspired* was excluded from the computation of PA in order to avoid redundancy between inspiration and PA.[1] Responses were summed across items to form PA and NA indexes. Evidence of the reliability and validity of the PANAS scales has been provided by Watson et al. (1988). In the present study, Cronbach's alpha was .90 for PA and was .74 for NA.

Results and Discussion

In this and subsequent studies, we conducted confirmatory factor analyses (CFAs) and structural equation modeling (SEM) analyses using Amos 7.0.0 (Arbuckle, 2006) with maximum likelihood estimation. Covariance matrices served as input.

Discriminant validity of inspiration and affect. We examined the discriminant validity of the hypothesized mediator (self-reported inspiration) and outcome variables (PA and NA) using CFA. We used a dummy-coded observed variable as a covariate representing exposure to Jordan in order to remove the influence of the manipulation on the relation between inspiration and affect. We modeled an inspiration latent variable using the four inspira-

tion items as indicators. We modeled PA and NA latent variables using four parcels each of randomly selected items. The inspiration latent variable was specified to be influenced by exposure to Jordan and by a residual latent variable, which represents variance in inspiration unshared with the manipulation. We specified PA and NA latent variables, likewise, to be influenced by exposure to Jordan and by residual latent variables. We estimated covariances among residuals. This model had acceptable fit, $\chi^2 (60, N = 79) = 96.47$, $p = .002$, Tucker-Lewis index (TLI) = .94, comparative fit index (CFI) = .96, root-mean-square error of approximation (RMSEA) = .088. Inspiration was related to PA ($r = .51, p < .001$) but not to NA ($r = .03, p = .84$). A two-factor model in which inspiration and PA indicators loaded on a single factor fit worse than the three-factor model, $\chi^2_{diff} (2, N = 79) = 117.82, p < .001$, and had unacceptable fit, $\chi^2 (62, N = 79) = 214.28, p < .001$, TLI = .76, CFI = .81, RMSEA = .177. These findings establish the discriminant validity of the inspiration and affect variables.

Effect of the manipulation on PA and NA. We used SEM to test the effect of the Jordan manipulation on PA and NA. The exposure-to-Jordan observed variable was specified to influence PA and NA latent variables, which were modeled with parcels and correlated residuals as in the CFA above. This model was found to have good fit, $\chi^2 (26, N = 79) = 32.78, p = .17$, TLI = .97, CFI = .98, RMSEA = .058. Exposure to Jordan led to higher PA (β = .53, $p < .001$) and lower NA (β = $-.35$, $p = .009$).

Inspiration as an explanatory (mediating) variable. We added an inspiration latent variable with four single-item indicators to the model as a mediator. We specified inspiration to be predicted by exposure to Jordan and to predict PA and NA. This model had acceptable fit, $\chi^2 (61, N = 79) = 96.72, p = .002$, TLI = .94, CFI = .96, RMSEA = .087. All paths were significant, except those from the Jordan manipulation to PA and from inspiration to NA. These paths were trimmed, yielding the model in Figure 1, $\chi^2 (63, N = 79) = 97.17, p = .004$, TLI = .95, CFI = .96, RMSEA = .083. The indirect effect of the Jordan manipulation on PA was significant ($a \times b = 2.11$, 95% confidence interval [CI] = 1.14–3.20) (MacKinnon, Fritz, Williams, & Lockwood, 2007). These findings indicate that inspiration fully explained the positive effect of exposure to Jordan on PA. Exposure to Jordan also had a negative effect on NA through a process other than inspiration.

We tested an alternative model that was identical to the model in Figure 1, except that the direction of the relation between inspiration and PA was reversed (i.e., inspiration was specified to be predicted by both the Jordan manipulation and PA). This model yielded poorer fit, and fit was unacceptable on the basis of RMSEA, $\chi^2 (63, N = 79) = 120.20, p < .001$, TLI = .91, CFI = .93, RMSEA = .108. A second alternative model was identical to the model in Figure 1, except that the positions of the inspiration

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[1] In an item-level confirmatory factor analysis of the PANAS PA scale, the Inspiration Scale, and inspiration items based on the Oxford English Dictionary definition of inspiration (without the *inspiration* label), Thrash and Elliot (2003) found that the PA item *inspired* converged with inspiration items and failed to converge with PA items. Inclusion of the item *inspired* in the computation of PA does not influence any of the findings reported below, except that the relationship between inspiration and PA tends to be slightly stronger when this item is included.
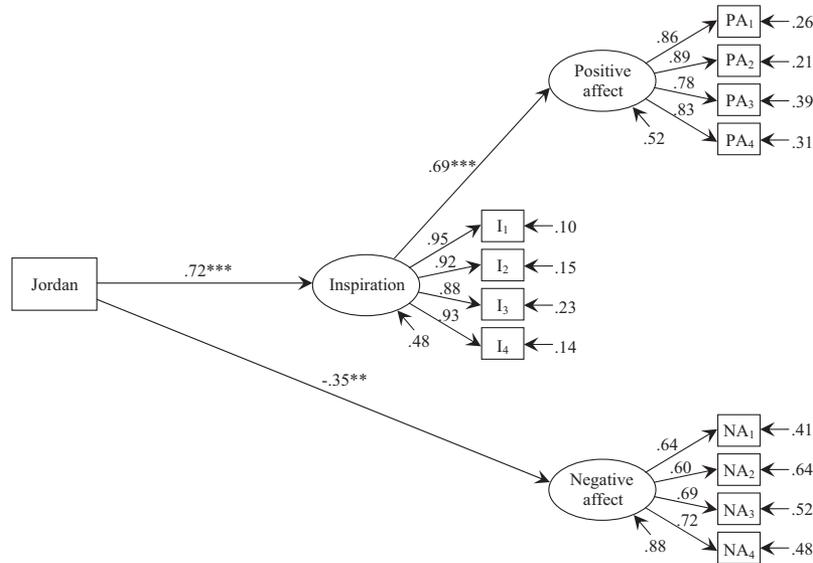
Figure 1. Structural equation model from Study 1. PA = positive affect; I = inspiration; NA = negative affect. Subscripted variables refer to items (inspiration) or random item parcels (PA and NA). For the sake of presentation clarity, the correlation between the error terms of the PA and NA latent variables was excluded from the diagram. All loadings were significant at $p < .001$. ** $p < .01$. *** $p < .001$.

and PA latent variables were reversed (i.e., PA was specified to mediate the effect of the manipulation on inspiration). This model yielded poorer fit than the model in Figure 1, and fit was unacceptable on the basis of RMSEA, $\chi^2(63, N = 79) = 123.98$, $p < .001$, TLI $= .91$, CFI $= .92$, RMSEA $= .111$. These findings suggest that the posited direction of the relation between inspiration and PA had not been misspecified.

Several limitations of Study 1 should be noted. First, the conclusions are limited to the type of inspiration elicited by exposure to Michael Jordan. Second, the conclusions are limited to affective aspects of well-being. Third, it is unclear whether inspiration has long-term consequences. Finally, the experimental method cannot address the question of whether inspiration is an important influence on well-being in the natural context of individuals' lives.

Study 2

In Study 2, we conducted a 3-month naturalistic longitudinal study that addressed the limitations of Study 1. Inspiration was operationalized using the trait version of the Inspiration Scale, which assesses moderately stable differences across individuals in the tendency to experience states of inspiration, regardless of the source of inspiration or its content (Thrash & Elliot, 2003).[2] Extending the set of dependent variables from Study 1, we assessed PA, NA, life satisfaction, overall SWB, vitality, and self-actualization.

We addressed the directionality issue by using a cross-lagged design,[3] in which the Time 1 level of a given Time 2 criterion well-being variable was statistically controlled (e.g., Time 2 life satisfaction was regressed simultaneously onto Time 1 life satisfaction and Time 1 inspiration). The cross-lagged design also helps address the third-variable issue. Menard (2002) noted that a cross-lagged design "helps control for effects of unmeasured variables

and provides a relatively conservative test for the existence of a nonspurious, nonzero causal relationship" (p. 19).

We also addressed the third-variable issue more directly by measuring and controlling for social desirability biases, Time 1 levels of PA and other well-being variables, and basic dimensions of personality. Research on social desirability biases has identified two primary dimensions: impression management (IM) and self-deceptive enhancement (SDE; Paulhus, 1998). These biases refer to conscious and nonconscious tendencies, respectively, to exaggerate one's desirable characteristics and to understate one's undesirable characteristics. Other research has discriminated self-enhancement and self-protection biases, which refer to tendencies to exaggerate one's desirable characteristics and to understate one's undesirable characteristics, respectively (Elliot & Thrash, 2002). We aimed to show that the effects of inspiration are not

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[2] Our use of the term *trait* is not meant to imply anything beyond between-person variance in the tendency to experience states of inspiration (Thrash & Elliot, 2003; for a similar use of the trait concept, see Fleeson, 2001). For instance, we do not view trait inspiration as predisposing individuals to become inspired; we do not conceptualize frequent or intense states of inspiration as necessarily arising from within the person; and we do not view trait inspiration as necessarily stable across the life span. Individual differences in the experience of inspiration are posited to arise from a combination of basic dispositions (e.g., Openness to Experience), situations, and other factors (Thrash & Elliot, 2003, 2004).

[3] We use the term *cross-lagged* to refer to the fact that our model corresponds to a path model with a cross-path from inspiration to well-being. Because our focus in this study was on the effect of inspiration on well-being and not on the reciprocal effect, we examined only the former. In Study 3, we examined both cross-paths using a fully cross-lagged design.

attributable to IM or SDE, nor to the self-enhancement components of either (hereafter labeled *positive IM* and *positive SDE*).

PA, itself a well-being variable, is known to have a variety of positive consequences that, in turn, are likely to enhance well-being (Fredrickson & Joiner, 2002; Isen, 2003; Lyubomirsky, King, & Diener, 2005). To rule out the possibility that the effects of inspiration are attributable solely to the variance that inspiration shares with PA, we controlled Time 1 PA in the prediction of all Time 2 well-being variables (rather than only in the prediction of Time 2 PA). Moreover, for a stringent test of incremental validity and nonspuriousness, we controlled not only the Time 1 levels of the criterion and PA but also all other Time 1 well-being variables, when predicting any given Time 2 well-being outcome.

Personality traits are among the best predictors of well-being (Diener et al., 1999). We therefore controlled the Big Five traits—Extraversion, Neuroticism, Openness to Experience, Conscientiousness, and Agreeableness—which provide a reasonably comprehensive assessment of personality. Although all of the Big Five traits predict well-being to various degrees (DeNeve & Cooper, 1998), Openness and Extraversion are particularly important as control variables, because they have also been found to be related to inspiration (Thrash & Elliot, 2003). We hypothesized that Time 1 inspiration would predict each positive well-being variable at Time 2, even when social desirability biases, Time 1 well-being variables, and the Big Five traits are controlled.[4]

Method

Participants and procedure. Two-hundred twenty undergraduates (72 men, 148 women) in a personality psychology course participated in this study. Participants completed a measure of the Big Five traits in a large group session at the beginning of the semester. Five days later, participants completed measures of social desirability biases and Time 1 well-being in a second large group session. On the following day, participants completed a measure of inspiration as part of a take-home questionnaire packet. At the end of the semester, participants completed the Time 2 well-being measures in a large group session, 3 months after the Time 1 assessment.

Measures. The measures used are outlined below.

Inspiration. Inspiration was assessed using the trait version of the Inspiration Scale (Thrash & Elliot, 2003). This measure includes four stem statements (e.g., "Something I encounter or experience inspires me"), each followed by one frequency item ("How often does this happen?") and one intensity item ("How deeply or strongly [in general]?"). Frequency items were rated from 1 (*never*) to 7 (*very often*), and intensity items were rated from 1 (*not at all*) to 7 (*very deeply or strongly*). Consistent with past research (Thrash & Elliot, 2003), responses to the frequency and intensity items were summed to create an overall inspiration index. Cronbach's alpha was .91 in the present study.

Social desirability biases. IM, SDE, positive IM, and positive SDE were assessed using the Paulhus Deception Scales (Paulhus, 1998). The IM and SDE scales consist of 20 items that were rated from 1 (*not at all true*) to 7 (*very true*). On both scales, 10 items concern qualities that are desirable but uncommon; extreme endorsement of these items is considered indicative of bias. The other 10 items from each scale concern qualities that are undesirable but common; extreme rejection of these items is considered indicative

of bias. After recoding reversed items, responses of 6 or 7 were assigned a score of 1, and other responses were assigned a score of 0. IM and SDE indexes were computed by summing scores across items. Paulhus (1998) has provided evidence of the reliability and validity of these scales. Ten-item indexes of positive IM and positive SDE were additionally computed using only the items that concern desirable qualities. Cronbach's alphas were as follows: IM, .74; SDE, .65; positive IM, .63; positive SDE, .63.

Big Five personality traits. Extraversion, Neuroticism, Openness to Experience, Conscientiousness, and Agreeableness were assessed using the NEO-FFI (Costa & McCrae, 1992). Each scale consists of 12 items (Extraversion e.g., "I like to have a lot of people around me"; Neuroticism e.g., "I often feel tense and jittery"; Openness to Experience e.g., "I often enjoy playing with theories or abstract ideas"; Conscientiousness e.g., "I work hard to accomplish my goals"; and Agreeableness e.g., "I try to be courteous to everyone I meet"). Items were rated from 1 (*If you strongly disagree or the statement is definitely false*) to 5 (*If you strongly agree or the statement is definitely true*). After recoding responses to reversed items, trait indexes were formed by summing responses across items. Costa and McCrae (1992) have provided evidence of the reliability and validity of these scales. In the present study, Cronbach's alphas were as follows: Extraversion, .80; Neuroticism, .87; Openness to Experience, .76; Conscientiousness, .86; Agreeableness, .76.

PA and NA. PA and NA were assessed using the PANAS, as in Study 1. Items were rated on a 7-point scale in this study, with the same anchors as in Study 1. Participants were asked to respond to the PANAS and all other well-being scales with respect to the time frame of "the past few days." Cronbach's alphas were as follows: Time 1 PA, .86; Time 1 NA, .87; Time 2 PA, .89; Time 2 NA, .88.

Life satisfaction. Life satisfaction was assessed using the Satisfaction with Life Scale (SWLS; Diener et al., 1985). This scale consists of five items (e.g., "I am satisfied with my life") that were

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[4] A cross-sectional pilot study was conducted to examine whether inspiration is related to positive well-being variables when several alternative predictors are controlled. A sample of 242 undergraduates completed the inspiration and well-being measures reported in Study 2. Participants also completed measures of four control variables: self-transcendence (Cloninger, Przybeck, Svrakic, & Wetzel, 1994), behavioral activation system (BAS; Carver & White, 1994), locus of control (Rotter, 1966), and self-esteem (Robins, Hendin, & Trzesniewski, 2001). Self-transcendence and BAS are dispositional variables relevant to the inspired *by* and inspired *to* component processes, respectively (Thrash & Elliot, 2004). Locus of control and self-esteem are well-established predictors of well-being (Diener et al., 1999). Correlations of each variable with inspiration were as follows: self-transcendence, $r = .33$, $p < .001$; BAS, $r = .38$, $p < .001$; locus of control, $r = .09$, $p = .09$; self-esteem, $r = .25$, $p < .001$; PA, $r = .55$, $p < .001$; NA, $r = -.14$, $p = .03$; life satisfaction, $r = .34$, $p < .001$; SWB, $r = .44$, $p < .001$; vitality, $r = .56$, $p < .001$; and self-actualization, $r = .28$, $p < .001$. Preliminary analyses indicated that women were higher than men in life satisfaction and SWB, and therefore gender was controlled. In a series of simultaneous regression analyses, each well-being variable was regressed on inspiration, gender, and the four control variables reported above. As expected, inspiration was found to uniquely predict PA ($\beta = .40$, $p < .001$), life satisfaction ($\beta = .18$, $p = .003$), SWB ($\beta = .28$, $p < .001$), vitality ($\beta = .40$, $p < .001$), and self-actualization ($\beta = .15$, $p = .03$), but not NA ($\beta = -.09$, $p = .18$).

rated from 1 (*strongly disagree*) to 7 (*strongly agree*). Responses were summed to create a life satisfaction index. Evidence of reliability and validity has been provided by Pavot, Diener, Colvin, and Sandvik (1991). In the present study, Cronbach's alpha was .83 at Time 1 and .88 at Time 2.

SWB.   SWB was computed as the sum of the standardized PA, NA (reverse coded), and life satisfaction scores. Although SWB cannot be used in place of the PA, NA, and life satisfaction variables, which are distinct and only moderately correlated, it may be viewed as a higher order construct that encompasses them (Arthaud-Day, Rode, Mooney, & Near, 2005). Cronbach's alpha was .88 at Time 1 and .90 at Time 2.

Vitality.   Vitality was assessed using the trait version of the Subjective Vitality Scale (Ryan & Fredrick, 1997). This scale consists of seven items (e.g., "I feel alive and vital") that were rated from 1 (*not at all true*) to 7 (*very true*). After recoding a reversed item, a vitality index was created by summing across responses. Evidence of reliability and validity has been provided by Ryan and Fredrick (1997). In the present study, Cronbach's alpha was .91 at Time 1 and .92 at Time 2.

Self-actualization.   Self-actualization was assessed using Jones and Crandall's (1986) Short Index of Self-Actualization. This scale consists of 15 items (e.g., "It is better to be yourself than to be popular") that were rated from 1 (*disagree*) to 5 (*agree*). After recoding reversed items, a self-actualization index was formed by summing across items. Evidence of reliability and validity has been provided by Jones and Crandall (1986). In the present study, Cronbach's alpha was .65 at Time 1 and .62 at Time 2.

Results and Discussion

Correlations between inspiration and other variables may be found in Table 1. Each Time 2 well-being variable served as the criterion in one of a series of hierarchical regression analyses. We entered the Time 1 level of the well-being criterion in Step 1 and IM and SDE in Step 2; we entered Time 1 levels of well-being variables other than the criterion in Step 3; we entered the Big Five traits in Step 4 and inspiration in Step 5. In order to avoid multicollinearity between SWB and its components (PA, NA, life satisfaction) in Step 3, Time 1 SWB was controlled only in the prediction of Time 2 SWB, and its individual components were not controlled in this analysis. We used this same strategy in Studies 3 and 4. Results are shown in Table 2.

The Step 1 results indicate that each well-being variable was moderately stable. The Step 2 results indicate that the pair of social desirability variables generally failed to account for variance in Time 2 well-being when Time 1 well-being was controlled, despite a large number of significant bivariate correlations between social desirability variables and Time 2 well-being variables (e.g., correlations between SDE and Time 2 well-being variables were as follows: PA, $r = .24$, $p < .001$; NA, $r = -.24$, $p < .001$; life satisfaction, $r = .28$, $p < .001$; SWB, $r = .33$, $p < .001$; vitality, $r = .30$, $p < .001$; self-actualization, $r = .40$, $p < .001$). These findings provide direct empirical support for the argument that controlling the initial level of the criterion variable helps remove the effect of third variables. The Step 3 results indicate that the set of remaining Time 1 well-being variables accounted for additional variance in PA and SWB. The Step 4 results indicate that the set

Table 1

Correlations Between Inspiration and Other Variables in Study 2

Variable	Inspiration
IM	.02
SDE	.24***
Positive IM	.03
Positive SDE	.27***
Extraversion	.28***
Neuroticism	−.13
Openness to Experience	.41***
Conscientiousness	.20**
Agreeableness	.02
Time 1 PA	.42***
Time 1 NA	.09
Time 1 life satisfaction	.22**
Time 1 SWB	.25***
Time 1 vitality	.35***
Time 1 self-actualization	.22**
Time 2 PA	.44***
Time 2 NA	−.05
Time 2 life satisfaction	.28***
Time 2 SWB	.34***
Time 2 vitality	.39***
Time 2 self-actualization	.26***

Note. IM = impression management; SDE = self-deceptive enhancement; PA = positive affect; NA = negative affect; SWB = subjective well-being.
** $p < .01$.   *** $p < .001$.

of Big Five traits accounted for additional variance in all well-being variables. Most important, the Step 5 results indicate that inspiration uniquely and positively predicted all positive well-being variables—PA, life satisfaction, SWB, vitality, and self-actualization—but not NA.

A second set of analyses, in which IM and SDE were replaced by positive IM and positive SDE, produced virtually identical results. Inspiration again uniquely predicted all positive well-being variables, but did not predict NA.

The experimental and longitudinal designs of Studies 1 and 2 provide converging evidence that inspiration influences well-being. Study 2 attests to the practical significance of inspiration in individuals' lives; inspiration had an enduring impact on positive well-being.

Study 3

In Study 3, we aimed to replicate the finding that inspiration has longitudinal effects on positive well-being variables. We also sought to extend Study 2 in three ways. First, we aimed to generalize our findings by examining longitudinal effects not only of trait inspiration but also of inspiration in the context of personal goals. Second, we sought to provide additional evidence that our findings are not due to shared method variance, particularly artifacts specific to the self-report of inspiration (e.g., idiosyncratic interpretations of the word *inspired*, implicit theories about the correlates of inspiration, or demand characteristics). Because trait inspiration and personal goals inspiration share similar methods of assessment—face-valid, self-report questionnaire items—most such artifacts are likely to influence their shared, rather than unique, variance. To the extent that trait

Table 2

Standardized Regression Coefficients (with ΔR²) From Hierarchical Regression Analyses Predicting Time 2 Well-Being Variables in Study 2

Predictor variable	Well-being criterion variable					
	PA	NA	Life satisfaction	SWB	Vitality	Self-actualization
Step 1						
Time 1 level of criterion	.54***	.43***	.62***	.52***	.61***	.69***
(R^2)	(.29***)	(.18***)	(.38***)	(.27***)	(.37***)	(.47***)
Step 2						
Time 1 level of criterion	.54***	.35***	.59***	.46***	.58***	.66***
IM	−.04	−.20**	.01	.06	−.01	.08
SDE	.02	−.09	.08	.10	.08	.04
(ΔR^2)	(.00)	(.05**)	(.01)	(.01)	(.01)	(.01)
Step 3						
IM	−.01	−.21**	.03	.09	−.01	.07
SDE	−.02	−.07	.06	.04	.04	.03
Time 1 PA	.34***	.16	.02		.13	−.05
Time 1 NA	.21**	.32***	.11		.04	−.07
Time 1 life satisfaction	.07	.10	.57***		.06	−.03
Time 1 SWB				.25**		
Time 1 vitality	.25**	−.20*	.15*	.28***	.48***	.08
Time 1 self-actualization	.10	−.09	−.04	.07	.01	.64***
(ΔR^2)	(.06**)	(.03)	(.03)	(.05**)	(.01)	(.01)
Step 4						
IM	−.02	−.22**	.05	.10	.00	.10
SDE	−.11	−.01	−.02	−.05	−.02	−.04
Time 1 PA	.29***	.18*	−.03		.08	−.05
Time 1 NA	.26**	.19*	.23**		.08	.06
Time 1 life satisfaction	.06	.14	.52***		.03	−.04
Time 1 SWB				.10		
Time 1 vitality	.18*	−.11	.04	.16*	.38***	.01
Time 1 self-actualization	.06	−.07	−.05	.05	.00	.56***
Extraversion	.04	−.11	.16*	.17*	.15*	.01
Neuroticism	−.20*	.27**	−.28***	−.25**	−.13	−.35***
Openness to Experience	.11	.10	−.09	−.03	.00	.09
Conscientiousness	.21**	−.04	.13*	.18**	.18**	−.02
Agreeableness	−.04	−.03	.01	−.02	−.03	−.04
(ΔR^2)	(.06**)	(.06**)	(.09***)	(.10***)	(.06**)	(.06***)
Step 5						
IM	−.02	−.22**	.05	.10	.00	.10
SDE	−.11	−.01	−.02	−.07	−.03	−.05
Time 1 PA	.25**	.22**	−.07		.03	−.08
Time 1 NA	.23**	.21**	.21**		.04	.03
Time 1 life satisfaction	.04	.15*	.50***		.00	−.06
Time 1 SWB				.08		
Time 1 vitality	.16	−.10	.03	.12	.36***	.00
Time 1 self-actualization	.07	−.08	−.04	.06	.01	.57***
Extraversion	.04	−.10	.15*	.16*	.15*	.01
Neuroticism	−.19*	.26**	−.27***	−.27***	−.13	−.34***
Openness to Experience	.04	.15*	−.15*	−.12	−.07	.03
Conscientiousness	.18**	−.02	.11	.14*	.15*	−.04
Agreeableness	−.03	−.04	.02	.00	−.01	−.03
Inspiration	.18**	−.14	.14*	.22**	.20**	.15*
(ΔR^2)	(.02**)	(.01)	(.01*)	(.03**)	(.03**)	(.01*)

Note. IM = impression management; SDE = self-deceptive enhancement; PA = positive affect; NA = negative affect; SWB = subjective well-being.
* $p < .05$. ** $p < .01$. *** $p < .001$.

inspiration and personal goals inspiration have incremental predictive utility, we may be more confident that their effects are not due to a measurement artifact. It is important to note that the analysis of unique effects of trait inspiration and personal goals inspiration is an extremely conservative strategy, because controlling a second inspiration variable removes not only method variance but also construct variance. Our third aim was to extend Study 2 by examining not only

whether there is an effect of inspiration on subsequent well-being but also whether there is an effect of well-being on subsequent inspiration.

Method

Participants and procedure. One-hundred thirty-nine undergraduates (48 men, 89 women, 2 unspecified) in a personality

psychology course participated in this study. At the beginning of the semester, participants completed a take-home questionnaire packet that included Time 1 measures of trait inspiration, personal goals inspiration, and well-being. Three months later, participants completed a second take-home questionnaire packet that included Time 2 measures of trait inspiration and well-being.

Measures. The measures used are outlined below.

Inspiration. As in Study 2, trait inspiration was assessed using the Inspiration Scale. Personal goals inspiration was assessed using a mixed idiographic-nomothetic methodology. Participants freely reported eight personal goals that they were pursuing in their everyday life, and they completed two inspiration items per goal: "Someone or something (e.g., a person, an idea, God, or some source within me) inspires me to pursue this goal" and "I am inspired to reach this goal." Items were rated from 1 (*strongly disagree*) to 7 (*strongly agree*). An index of personal goals inspiration was computed by summing across items and goals. Cronbach's alphas were as follows: Time 1 trait inspiration, .91; Time 1 personal goals inspiration, .83; Time 2 trait inspiration, .92.

Well-being. Well-being was assessed using the same measures as in Study 2. In this study, self-actualization was assessed using a 4-point scale, with the same anchors as in Study 2. Participants were asked to respond to all well-being items with respect to the time frame of "the past two weeks." Cronbach's alphas were as follows: Time 1 PA, .77; Time 1 NA, .82; Time 1 life satisfaction, .83; Time 1 SWB, .86; Time 1 vitality, .88; Time 1 self-actualization, .65; Time 2 PA, .84; Time 2 NA, .82; Time 2 life satisfaction, .86; Time 2 SWB, .87; Time 2 vitality, .90; Time 2 self-actualization, .64.

Results and Discussion

Correlations between the inspiration variables and other variables may be found in Table 3.

Table 3
Correlations Between Inspiration Variables and Other Variables in Study 3

Variable	Time 1 trait inspiration	Time 1 personal goals inspiration	Time 2 trait inspiration
Time 1 trait inspiration		.33***	.68***
Time 1 personal goals inspiration	.33***		.32***
Time 1 PA	.44***	.18*	.28**
Time 1 NA	.14	.02	−.01
Time 1 life satisfaction	.07	−.06	.09
Time 1 SWB	.16	.04	.17
Time 1 Vitality	.35***	.11	.27**
Time 1 self-actualization	.23**	.05	.25**
Time 2 trait inspiration	.68***	.32***	
Time 2 PA	.39***	.32***	.39***
Time 2 NA	.03	−.05	−.10
Time 2 life satisfaction	.25**	.07	.28**
Time 2 SWB	.27**	.20*	.34***
Time 2 Vitality	.44***	.25**	.46***
Time 2 self-actualization	.42***	.14	.42***

Note. PA = positive affect; NA = negative affect; SWB = subjective well-being.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Hierarchical regression analyses. Each Time 2 well-being variable served as the criterion in one of a series of hierarchical regression analyses. We entered the Time 1 level of the well-being criterion in Step 1; we entered the remaining Time 1 well-being variables in Step 2; we entered Time 1 trait inspiration in Step 3A; we replaced Time 1 trait inspiration with personal goals inspiration in Step 3B; and we included trait inspiration and personal goals inspiration together in Step 4. Results are shown in Table 4.

The Step 1 results indicate that each well-being variable was moderately stable. The Step 2 results indicate that the set of remaining Time 1 well-being variables accounted for unique variance in most Time 2 well-being variables. More important, the Step 3A results indicate that trait inspiration uniquely predicted all positive well-being variables, but did not predict NA. Results were marginally significant in the case of SWB ($p = .06$), reflecting the inclusion of NA in this composite variable. The Step 3B results indicate that personal goals inspiration uniquely predicted PA, SWB, vitality, and, marginally, self-actualization ($p = .09$). Although the effects of personal goals inspiration were less robust than those of trait inspiration, these findings provide evidence that the benefits of inspiration are generalizable beyond trait inspiration and the Inspiration Scale. The Step 4 results indicate that trait inspiration uniquely predicted PA, life satisfaction, vitality, and self-actualization when personal goals inspiration and other predictors were controlled. Personal goals inspiration uniquely predicted PA and vitality. The presence of a number of unique effects is striking given the conservative nature of this analysis and helps rule out a variety of method artifacts.

To examine the possibility of reciprocal effects, we conducted an analysis in which Time 2 trait inspiration was the criterion. We entered Time 1 trait inspiration in Step 1; we entered Time 1 positive well-being variables (PA, life satisfaction, vitality, and self-actualization) in Step 2; and we entered Time 1 NA in Step 3. In Step 1, we found inspiration to be moderately stable ($\beta = .68$, $p < .001$). In Steps 2 and 3, the set of positive well-being variables (as well as the individual variables) and NA failed to account for unique variance in inspiration. These analyses fail to provide evidence of longitudinal effects of well-being on inspiration.

CFA and SEM models. The univariate regression analyses indicated that inspiration predicted longitudinal change in a variety of positive well-being variables. We used the multivariate technique of SEM to determine whether the multiple effects of trait inspiration may be modeled parsimoniously as a single effect on a positive well-being latent variable. In a preliminary six-factor CFA, positive well-being latent variables at Time 1 and Time 2 were modeled using PA, life satisfaction, vitality, and self-actualization as indicators. Latent variables representing Time 1 and Time 2 levels of trait inspiration were modeled using a set of three random parcels. Latent variables representing Time 1 and Time 2 levels of negative well-being were modeled using three random parcels of NA items. Because life satisfaction generally is not conceptualized as valenced, its indicators were allowed to load on negative well-being as well as on positive well-being. We modeled autocorrelations between corresponding error terms at Times 1 and 2. We identified the model by setting latent variable variances equal to 1. This model had good fit, $\chi^2(143, N = 139) = 202.24$, $p = .001$, TLI = .96, CFI = .97, RMSEA = .055. Imposing equality constraints on corresponding loadings at Times

Table 4

Standardized Regression Coefficients (with ΔR^2) From Hierarchical Regression Analyses Predicting Time 2 Well-Being Variables in Study 3

Predictor variable	Well-being criterion variable					
	PA	NA	Life satisfaction	SWB	Vitality	Self-actualization
Step 1						
Time 1 level of criterion	.44***	.42***	.70***	.56***	.60***	.61***
(R^2)	(.20***)	(.18***)	(.49***)	(.31***)	(.37***)	(.37***)
Step 2						
Time 1 PA	.37***	.12	−.02		.11	.11
Time 1 NA	.05	.31***	.18**		.19*	−.03
Time 1 life satisfaction	.01	−.15	.68***		.16†	.19*
Time 1 SWB				.40***		
Time 1 vitality	.13	−.13	.10	.17†	.55***	.04
Time 1 self-actualization	.02	−.12	.14*	.12	−.05	.45***
(ΔR^2)	(.01)	(.06*)	(.04*)	(.03*)	(.05*)	(.07**)
Step 3A						
Time 1 PA	.26*	.12	−.10		.00	−.04
Time 1 NA	−.03	.31**	.13		.12	−.13
Time 1 life satisfaction	.05	−.15	.70***		.20*	.25**
Time 1 SWB				.41***		
Time 1 vitality	.08	−.13	.07	.12	.49***	−.03
Time 1 self-actualization	−.02	−.13	.12	.10	−.08	.41***
Time 1 trait inspiration	.26**	.02	.18*	.14†	.25**	.35***
($\Delta R^2_{3A \text{ vs. } 2}$)	(.05**)	(.00)	(.02*)	(.02†)	(.04**)	(.09***)
Step 3B						
Time 1 PA	.31**	.14	−.04		.06	.09
Time 1 NA	.04	.31***	.18**		.19*	−.03
Time 1 life satisfaction	.06	−.17	.69***		.19*	.21*
Time 1 SWB				.40***		
Time 1 vitality	.11	−.12	.10	.15	.53***	.04
Time 1 self-actualization	.01	−.12	.14*	.12	−.05	.45***
Time 1 personal goals inspiration	.26**	−.07	.10	.16*	.19**	.11
($\Delta R^2_{3B \text{ vs. } 2}$)	(.06**)	(.00)	(.01)	(.02*)	(.03**)	(.01)
Step 4						
Time 1 PA	.24*	.12	−.10		−.01	−.04
Time 1 NA	−.01	.30**	.13†		.13	−.13
Time 1 life satisfaction	.08	−.16	.71***		.22**	.25**
Time 1 SWB				.41***		
Time 1 vitality	.08	−.13	.07	.12	.49***	−.03
Time 1 self-actualization	−.01	−.13	.12	.10	−.08	.41***
Time 1 trait inspiration	.19*	.04	.16*	.10	.21**	.34***
Time 1 personal goals inspiration	.22**	−.08	.06	.13	.14*	.04
($\Delta R^2_{4 \text{ vs. } 2}$)	(.09**)	(.01)	(.03*)	(.03*)	(.06**)	(.09***)
($\Delta R^2_{4 \text{ vs. } 3A}$)	(.04**)	(.01)	(.00)	(.02)	(.02*)	(.00)
($\Delta R^2_{4 \text{ vs. } 3B}$)	(.02*)	(.00)	(.02*)	(.01)	(.03**)	(.08***)

Note. PA = positive affect; NA = negative affect; SWB = subjective well-being.
† $p < .06$.   * $p < .05$.   ** $p < .01$.   *** $p < .001$.

1 and 2 resulted in no loss of fit, $\chi^2_{\text{diff}}(11, N = 139) = 9.43$, $p = .58$. We constrained loadings in all subsequent analyses.

Latent test–retest correlations from the CFA were as follows: trait inspiration, $r = .72$, $p < .001$; positive well-being, $r = .75$, $p < .001$; negative well-being, $r = .46$, $p < .001$. The test–retest correlations for trait inspiration and positive well-being did not differ, $\chi^2_{\text{diff}}(1, N = 139) = .15$, $p = .70$. Therefore, differences in the effects of these variables cannot be attributed to differences in stability.

In a full SEM model, we modeled latent trait inspiration, positive well-being, and negative well-being at Time 1 as predictors of the corresponding latent variables at Time 2. In addition, we modeled paths from Time 1 trait inspiration to Time 2 positive well-being, and from Time 1 positive well-being to Time 2 trait inspiration. We modeled autocorrelations between corresponding error terms at Times 1 and 2 and correlations among the error terms of the Time 2 latent variables. We identified the model by setting one loading on each latent variable equal to 1. The resulting model had good fit, $\chi^2(155, N = 139) = 218.19$, $p = .001$, TLI = .96, CFI = .97, RMSEA = .054. Time 1 trait inspiration had a significant effect on Time 2 positive well-being ($\beta = .34$, $p < .001$), whereas Time 1 positive well-being did not have an effect

on Time 2 trait inspiration ($\beta = .04$, $p = .61$). We trimmed the nonsignificant path from Time 1 positive well-being to Time 2 trait inspiration to yield the final model shown in Figure 2, $\chi^2(156, N = 139) = 218.43$, $p = .001$, TLI $= .96$, CFI $= .97$, RMSEA $= .054$. No direct path from Time 1 trait inspiration to an observed Time 2 positive well-being variable, unmediated by Time 2 latent positive well-being, was significant if added. Thus, the effects of inspiration on PA, life satisfaction, vitality, and self-actualization were due to a single effect on the latent variable that accounted for their shared variance.

Together, the findings from Studies 1–3 provide strong and consistent support for the proposal that inspiration promotes positive aspects of well-being. The good fit of the conceptually parsimonious SEM model suggests that mediating processes, which we examined in Study 4, may be conceptualized parsimoniously. It appears unnecessary to specify a separate set of mediating processes for each positive well-being outcome.

Study 4

In Study 4, we sought to extend the findings of Studies 1–3 in two ways. First, we aimed to extend the relations between inspi-

ration and well-being from the between-person level of analysis to the within-person level of analysis. The between-person relations documented above indicate that positive well-being is greater among *individuals* who experience inspiration. In the present study, we aimed to show that, on average across individuals, positive well-being is greater on *days* on which inspiration has occurred. The second aim was to demonstrate that the relation between inspiration and positive well-being is mediated by purpose in life and gratitude.

Method

Participants and procedure. One-hundred forty-two undergraduates (51 men, 91 women) in an introductory psychology course participated in the study. Participants completed midday and end-of-day online diaries each day for 2 weeks. Participants were asked to complete midday diaries between 3:00 p.m. and 5:00 p.m. Unless they wished to retire earlier, they were asked to complete end-of-day diaries after 10:00 p.m., as near as possible to the time of going to bed. On the midday diaries, participants reported their inspiration during the first half of the day (hereafter labeled *morning*) and their present purpose and gratitude. On the
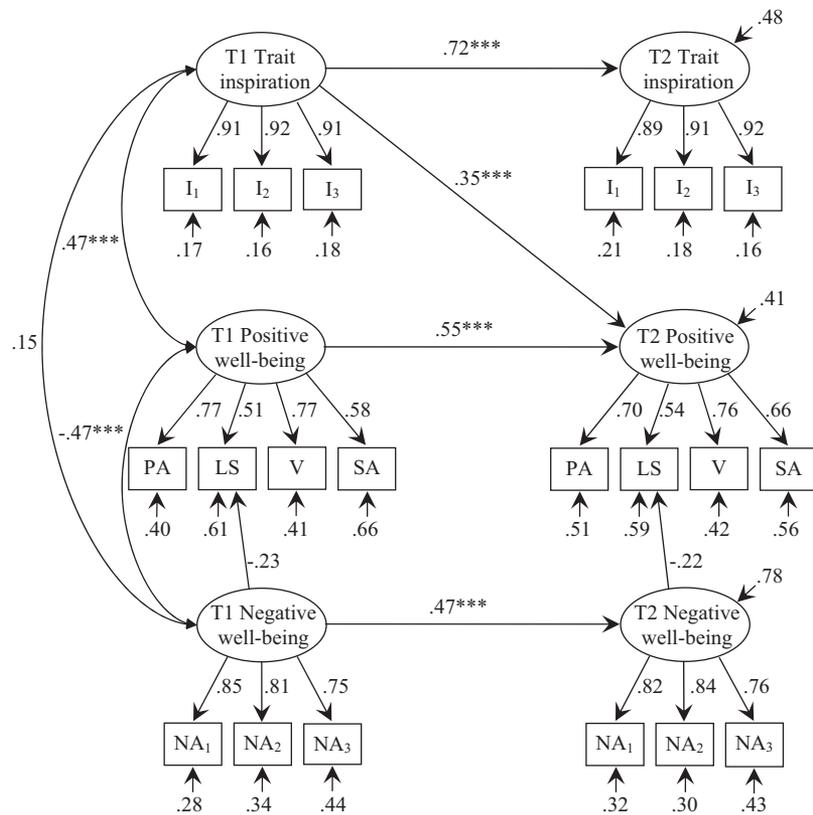

Figure 2. Structural equation model from Study 3. T1 = Time 1; T2 = Time 2; I = trait inspiration; PA = positive affect; LS = life satisfaction; V = vitality; SA = self-actualization; NA = negative well-being. Subscripted variables refer to random item parcels. For the sake of presentation clarity, autocorrelations between corresponding error terms at Times 1 and 2 and correlations among the error terms of the Time 2 latent variables were excluded from the diagram. Two correlations among error terms of the Time 2 latent variables were significant: trait inspiration and positive well-being ($r = .34$, $p = .006$) and positive well-being and negative well-being ($r = -.57$, $p < .001$). All loadings were significant at $p \leq .002$. *** $p < .001$.

end-of-day diaries, participants reported their well-being during the second half of the day (*evening*).

Measures. The measures used are discussed below.

Inspiration. Daily inspiration was assessed using an adapted version of the Inspiration Scale. Participants responded to four questions regarding their experiences during the first half of the day: "Have you felt inspired? (and if so, how inspired did you feel?)"; "Have you encountered or experienced anything that inspired you? (and if so, how inspiring was it?)"; "Have you been inspired to do something? (and if so, how inspired [to do something] were you?)"; and "Would you say that you experienced inspiration? (and if so, to what extent?)." Participants responded to each item using a 5-point scale (1 = *no*; 2 = *yes, slightly*; 3 = *yes, somewhat*; 4 = *yes, very*; and 5 = *yes, extremely*).

Purpose. Purpose was assessed using three items from the Purpose in Life (PIL) scale (Crumbaugh & Maholick, 1964). McGregor and Little's (1998) factor analysis of the PIL items yielded distinct Meaning and Happiness factors. The items selected for this study were those that loaded most strongly on McGregor and Little's meaning factor. The PIL items have a bipolar response format and were rated on a 5-point scale (e.g., 1 = "*I have no goals or aims at all*" and 5 = "*I have very clear goals and aims*"). Responses were summed to form a purpose index.

Gratitude. Gratitude was assessed using the items *grateful* and *thankful*, which were drawn from an established measure (Emmons & McCullough, 2003). The items were selected on the basis of face validity and internal consistency (Saucier & Goldberg, 1998). Participants rated the extent of their gratitude from 1 (*not at all*) to 5 (*extremely*). Responses were summed to form a gratitude index.

PA and NA. The Short PANAS (Kercher, 1992) was used to assess PA and NA. PA was assessed using four of the five adjectives from the Short PA scale: *alert*, *excited*, *enthusiastic*, and *determined*. *Inspired* was excluded, as in the prior studies. NA was assessed using the five items from the Short NA scale: *afraid*, *upset*, *nervous*, *scared*, and *distressed*. Items were rated from 1 (*not at all*) to 5 (*extremely*). Responses were summed to form PA and NA indexes. Evidence of the reliability and validity of these scales has been provided by Mackinnon et al. (1999).

Life satisfaction. Life satisfaction was assessed using two items from the SWLS (rephrased in past tense): "I was satisfied with my life" and "In most ways, my life was close to ideal." Of the original five items, these items had the strongest loadings in the principal components analysis reported by Diener et al. (1985). Items were rated from 1 (*strongly disagree*) to 5 (*strongly agree*). Responses were summed to form a life satisfaction index.

Vitality. Vitality was assessed using two items from the Subjective Vitality Scale (rephrased in past tense): "I felt energized" and "I had energy and spirit." Of the original seven items, these items had the strongest factor loadings in a principal components analysis of pilot data. Items were rated from 1 (*not at all true*) to 5 (*very true*). Responses were summed to form a vitality index.

Self-actualization. Self-actualization was assessed using Sheldon, Elliot, Kim, and Kasser's (2001) Self-Actualization-Meaning scale. This scale consists of three items (e.g., "I felt that I was 'becoming who I really am'") that were rated from 1 (*not at all*) to 5 (*very much*). Responses were summed to create an index

of self-actualization. Research has attested to the reliability and validity of this scale (Sheldon et al., 2001).

Results and Discussion

Data structure and preliminary analyses. The data were structured such that days (Level 1) were nested within persons (Level 2). Each case at Level 1 included variables from three diaries: a midday diary, which provided the predictor variable (inspiration) and mediators (purpose, gratitude); the corresponding end-of-day diary, which provided the criterion variables (well-being); and the prior (last-available) end-of-day diary, which provided the control variables (prior well-being).

Participants submitted a total of 1,634 midday diaries and 1,615 end-of-day diaries. We retained Level 1 cases if midday, end-of-day, and prior end-of-day diaries were available and had been submitted at appropriate times. We deemed midday diaries compliant if they had been submitted no more than 1 hr early or late (i.e., between 2:00 p.m. and 6:00 p.m.). We deemed end-of-day diaries compliant if they had been submitted no more than 1 hr early (i.e., after 9:00 p.m.) and before 5:00 a.m. the following morning (see Thrash & Elliot, 2003, 2004). We additionally required that midday and end-of-day diaries be submitted at least 5 hr apart. The resulting data set had 1,141 days of data available for analysis. We conducted multilevel analyses using HLM 6.02 (Raudenbush, Bryk, & Congdon, 2005). Descriptive statistics and reliability estimates may be found in Table 5.

Average within-person associations between inspiration and well-being variables. Within-person associations between the inspiration and well-being variables may vary across individuals. Because such variability is peripheral to our focus, we estimated average within-person effects. The multilevel model, which was run separately for each well-being variable, was as follows:

Level 1:

$$WB_{i,j} = \beta_{0,j} + \beta_{1,j}(I_{i,j}) + \beta_{2,j}(PA_{i,j}) + \beta_{3,j}(NA_{i,j})$$
$$+ \beta_{4,j}(LS_{i,j}) + \beta_{5,j}(V_{i,j}) + \beta_{6,j}(SA_{i,j}) + r_{i,j}$$

Table 5
Descriptive Statistics and Reliabilities in Study 4

Variable	M	SD Level 1	SD Level 2	Reliability
Inspiration	10.21	2.98	3.14	.89
Purpose	11.39	1.58	1.55	.87
Gratitude	6.75	1.38	1.84	.93
PA	12.51	2.55	2.45	.87
NA	8.48	2.99	1.90	.75
Life satisfaction	7.40	1.26	1.26	.88
SWB	0.01	0.55	0.46	.84
Vitality	6.79	1.58	1.28	.83
Self-actualization	9.10	1.89	2.44	.92

Note. $N = 1,141$ diaries. *M*, Level 1 *SD* and Level 2 *SD* reflect the intercept, *SD* of $r_{i,j}$, and *SD* of $U_{0,j}$, respectively, in unconditional hierarchical linear models (HLMs) in which the listed variable is the criterion. Reliability estimates, which may be viewed as the average within-person reliabilities across days, are reported directly by HLM.

Level 2:

$$\beta_{0,j} = \gamma_{0,0} + u_{0,j}$$

$$\beta_{1,j} = \gamma_{1,0} + u_{1,j}$$

$$\beta_{2,j} = \gamma_{2,0}$$

$$\beta_{3,j} = \gamma_{3,0}$$

$$\beta_{4,j} = \gamma_{4,0}$$

$$\beta_{5,j} = \gamma_{5,0}$$

$$\beta_{6,j} = \gamma_{6,0},$$

where WB refers to a particular evening well-being variable; I refers to morning inspiration; and PA, NA, LS, V, and SA refer, respectively, to the levels of PA, NA, life satisfaction, vitality, and self-actualization on the prior evening. The Level 1 equation, which is defined separately for each individual (j), specifies that a given well-being variable varies across days (i) as a function of inspiration and the prior level of each well-being variable. In this and subsequent models, inspiration values were centered around individuals' own means so that the relationship between inspiration and well-being would represent a purely within-person association (Nezlek, 2007). The Level 2 model decomposes individuals' Level 1 intercepts and slopes (e.g., $\beta_{0,j}$, $\beta_{1,j}$) into fixed effects (e.g., $\gamma_{0,0}$, $\gamma_{1,0}$), which represent means across individuals, and random effects (e.g., $u_{0,j}$, $u_{1,j}$), which represent individuals' deviations from the means (i.e., random errors). Random error terms were trimmed when not significant (Nezlek, 2001). The results of this analysis were the same whether or not the prior well-being control variables were modeled with random effects. However, because the mediation models below were too complex for the prior well-being variables to be modeled with random effects, for the sake of comparability we exclude these random effects from the model reported here.

The fixed effect $\gamma_{1,0}$ represents the mean unstandardized slope relating morning inspiration to a given evening well-being variable when the prior level of each well-being variable is controlled. Mean slopes for each well-being variable are reported in the first column of Table 6. Variations in inspiration across mornings were found to predict variations in evening PA, life satisfaction, SWB, vitality, and self-actualization, but not NA. This pattern is identical to that established at the between-person level of analysis. The mean unstandardized slopes may be interpreted as average total effects to be explained in terms of mediating processes.

Single-mediator models. In the same way that within-person associations between the inspiration and well-being variables may vary across individuals, so too may the indirect and direct effects that compose them. We conducted tests of lower level (Kenny, Kashy, & Bolger, 1998) or 1→1→1 (Krull & MacKinnon, 2001) mediation, with the aim of estimating average indirect effects.

If a_j is the effect of predictor $X_{i,j}$ on mediator $M_{i,j}$ for person j, and b_j is the effect of $M_{i,j}$ (controlling $X_{i,j}$) on outcome $Y_{i,j}$ for person j, then the average indirect effect is $ab + \sigma_{aj,bj}$, where a is the average a_j, b is the average b_j, and $\sigma_{aj,bj}$ is the covariance between a_j and b_j across individuals (Bauer, Preacher, & Gil, 2006). Bauer et al. (2006) presented a method for estimating the average indirect effect and its sampling variance by tricking a standard multilevel modeling program into modeling simultaneously both paths composing the indirect effect. In initial analyses, we implemented Bauer et al.'s approach twice, once with purpose as the mediator and once with gratitude as the mediator.

Purpose. Average indirect and direct effects from the purpose model are shown in the second and third columns of Table 6. The proportion of each total effect accounted for by purpose is reported in the fourth column. As expected, significant average indirect effects were documented in the prediction of PA, life satisfaction, SWB, vitality, and (marginally) self-actualization ($p = .096$), but not NA. The fact that some direct effects were significant, together

Table 6

Average Total, Indirect, and Direct Unstandardized Effects of Inspiration on Well-Being Variables in Study 4

| | | Single-mediator model | | | | | | Dual mediator model | | | |
| | | Purpose | | | Gratitude | | | Indirect | | | |
Variable	Total[a]	Indirect	Direct	Indirect/Total[a]	Indirect	Direct	Indirect/Total[a]	Purpose	Gratitude	Direct	Indirect/Total[a]
PA	.160***	.044***	.117***	.27	.057***	.107**	.35	.027**	.048**	.089**	.46
NA	−.049	.012	−.061†	.00[b]	−.015	−.036	.29	.017	−.021†	−.047	.07
Life satisfaction	.047**	.032***	.015	.68	.036***	.013	.73	.023***	.028***	−.002	1.00[b]
SWB	.027***	.009***	.018**	.33	.014***	.014†	.51	.007**	.010***	.011	.60
Vitality	.073**	.018**	.057**	.24	.032***	.041*	.44	.011†	.029***	.035†	.53
Self-actualization	.066**	.019†	.046*	.30	.031***	.036	.47	.020*	.033***	.010	.84

Note. PA = positive affect; NA = negative affect; SWB = subjective well-being.
† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$.
[a] The total effects listed in the first column are from the initial model, which did not include any mediating variables. The mediational models yielded total effect estimates that deviated slightly from those in the first column. Ratios of indirect-to-total effects are based on total effects estimated in the mediational models. [b] In the mediational model that included purpose but not gratitude, the direct effect of inspiration on NA was stronger than the total effect. This suppression effect yielded an indirect/total effect ratio that was negative in sign. We have reported a value of .00 because a negative ratio is of questionable interpretability. Similarly, in the dual mediator model, the total and direct effects were opposite in sign, yielding an indirect/total effect ratio greater than 1.00. We have reported a value of 1.00 because a value greater than 1.00 is of questionable interpretability (Shrout & Bolger, 2002).

with the fact that most proportions did not approach 1.00, indicates that purpose functioned as a partial rather than a full mediator.

Gratitude. Average indirect and direct effects from the gratitude model are shown in the fifth and sixth columns of Table 6. The proportion of each total effect accounted for by gratitude is reported in the seventh column. As expected, significant average indirect effects were documented in the prediction of PA, life satisfaction, SWB, vitality, and self-actualization, but not NA. Gratitude, like purpose, functioned as a partial mediator.

Dual mediator model. A final model was tested to determine whether the indirect effects via purpose and gratitude represent distinct or redundant mediational processes. The average direct effect and average indirect effects via each mediator may be computed in a manner that parallels the computation of average direct and indirect effects in the case of single mediators (D. Bauer, personal communication, October 5, 2006).

Average indirect effects via purpose and gratitude from the dual mediator models are reported in the eighth and ninth columns of Table 6. Average direct effects are reported in the 10th column, and the proportion of each total effect accounted for by purpose and gratitude is reported in the last column. As expected, significant unique indirect effects via both purpose and gratitude were documented in the prediction of PA, life satisfaction, SWB, vitality, and self-actualization (the indirect effect on vitality via purpose was marginally significant, $p = .07$). In combination, purpose and gratitude fully mediated the effect of inspiration on life satisfaction, and they mediated most of the effect of inspiration on the other positive well-being variables. In summary, purpose and gratitude functioned as independent, partial mediators of the average within-person effect of morning inspiration on evening well-being.

General Discussion

Studies 1–3 provided evidence that inspiration enhances well-being, and Study 4 identified mediating processes. In Study 1, exposure to Michael Jordan's extraordinary competence led to an elevation in PA, and this effect was fully explained by self-reported inspiration. In Study 2, trait inspiration predicted positive well-being variables 3 months later, while initial well-being variables, social desirability biases, and the Big Five traits were controlled. In Study 3, inspiration again predicted unique variance in positive well-being 3 months later; in contrast, initial well-being failed to predict subsequent inspiration. In Study 4, inspiration predicted positive well-being variables at the within-person level of analysis. These effects were mediated by purpose in life and gratitude. In the following, we begin by discussing evidence of causality and then turn to mediating processes.

Most theorists in the social sciences agree that three criteria must be met to conclude that X is a cause of Y (Bollen, 1989; Kenny, 1979; Menard, 2002): association, temporal precedence, and isolation. X must be associated with a later occurrence of Y while the X–Y relation is isolated from other influences. The "directionality problem" and "third-variable problem" refer to the necessity of attending to issues of temporal precedence and isolation, respectively, rather than inferring causality on the basis of association alone.

Association

Studies 1–4 all provided evidence of associations between inspiration and well-being variables. Inspiration was consistently related to positive well-being variables, including affective and cognitive aspects of hedonic well-being (PA, life satisfaction) and eudaimonic well-being (vitality, self-actualization); in contrast, inspiration consistently failed to predict NA. This pattern was robust and generalizable across experimental (Study 1) and correlational (Studies 2–4) designs, across the between-person (Studies 1–3) and within-person (Study 4) levels of analysis, and across state (Studies 1, 4), trait (Studies 2, 3), and personal goals (Study 3) measures of inspiration. These findings suggest that inspiration is more relevant to the promotion of positive aspects of well-being than to the alleviation of distress, although inspiration may be associated with certain negative states not examined in this research, particularly those related to approach motivation (e.g., the presence of frustration or absence of depression; Carver, 2004).

Results of a longitudinal SEM analysis in Study 3 showed that inspiration predicted the latent variable that accounted for the shared variance among the PA, life satisfaction, vitality, and self-actualization variables; inspiration did not account for the residual variance in any of these variables. Thus, although hedonic and eudaimonic well-being variables have unique antecedents (e.g., Nix, Ryan, Manly, & Deci, 1999), inspiration appears to be a common antecedent and may partially explain the moderate to large amount of shared variance between them (e.g., $r = .84$; Keyes et al., 2002).

Temporal Precedence

In order to address the directionality issue, we used several strategies for establishing temporal precedence. First, because causes precede effects, temporal lag between inspiration and well-being was incorporated into each of our study designs. Inspiration was found to predict subsequent well-being, with a temporal lag of minutes (Study 1), hours (Study 4), and months (Studies 2, 3). In Study 1, temporal lag was created by asking participants to report their prior level of inspiration (during the film) and their current well-being (after the film). In contrast, Studies 2–4 involved true temporal separation, such that inspiration and well-being assessments were separated longitudinally.

Second, in Study 1, we tested alternative SEMs in addition to our hypothesized model. In the alternative models, PA was specified to influence, rather than be influenced by, inspiration. Both alternative models were rejected on the basis of poor fit to the data. These findings suggest that our hypothesized model did not misspecify the direction of the relation between inspiration and well-being.

Third, in Studies 2–4, we examined cross-lagged longitudinal models, in which the initial level of the criterion well-being variable was controlled. The fact that we controlled for the level of well-being prior to (Study 4) or concurrent with (Studies 2, 3) inspiration rules out the possibility that inspiration predicted subsequent well-being only because both were influenced by prior well-being. Controlling concurrent well-being is a conservative strategy (Menard, 2002), because it removes all variance that inspiration initially shares with well-being, including variance resulting from prior causal effects of inspiration on well-being.

Fourth, in Study 3, we tested for but failed to find evidence of reciprocal effects, such that well-being variables influence inspiration longitudinally. Moreover, trait inspiration and positive well-being were equally stable; therefore, neither the effects of inspiration nor the absence of reciprocal effects were artifacts of differential stability. Although caution is needed in interpreting null effects of well-being on inspiration in a single study, our studies provide strong evidence in support of directional effects of inspiration on positive well-being variables.

In Studies 2 and 3, Time 1 inspiration was generally less strongly correlated with well-being at Time 1 than at Time 2 (see Tables 1 and 3). Most notably, in Study 3, Time 1 trait inspiration was unrelated to concurrent life satisfaction ($r = .07$) but predicted subsequent life satisfaction ($r = .25$). The fact that inspiration is associated more with future than with present satisfaction is consistent with its posited motivational function. These findings show that the practice of identifying potential causes of well-being on the basis of concurrent, bivariate correlations may lead not only to false positives (as is widely recognized) but also to false negatives, as when temporal lag exists. The conventional wisdom that correlation (considered alone) is a necessary condition for establishing causality (e.g., Campbell & Stanley, 1963) is mistaken, because causality implies association only when variables are assessed with an appropriate temporal lag and when the relation is isolated from other influences (Thrash, Cassidy, Maruskin, & Elliot, in press).

Isolation

We addressed the third-variable issue by using several isolation strategies, beginning with the experimental method in Study 1. An experimental manipulation of exposure to Michael Jordan's extraordinary competence had a positive effect on PA, and this effect was fully explained by self-reported inspiration. Because of random assignment to condition and experimental control over stimulus conditions, the observed differences in the measured variables—inspiration and PA—can be attributed with confidence to the manipulated variable rather than to a third variable. Thus, the first path composing the indirect effect—from exposure to Jordan to inspiration—was well isolated from other influences. The second link—from inspiration to PA—was not isolated experimentally, because both variables were measured rather than manipulated. We did not manipulate the inspiration variable itself, because, in our view, it is difficult or impossible to do so. It is important not to conflate psychological states, such as inspiration, with the stimulus properties that elicit them, such as extraordinary competence (for an analogue, see Tao & Bucy, 2007); only the latter are readily amenable to experimental control. The experimenter may assign individuals to a condition in which particular stimulus properties are present, but he or she cannot assign individuals to be inspired by those stimulus properties, except perhaps through direct neurological or pharmacological manipulation.

In light of the limitations of the experimental method for establishing causal effects of psychological states, we additionally used the following nonexperimental approaches to isolation. First, in Study 1, we used CFA to establish the discriminant validity of inspiration and PA, which tend to be highly correlated. A model in which inspiration and PA indicators loaded on separate factors had good fit, whereas a model in which they loaded on the same factor had poor fit. The relation between inspiration and PA is not attributable to a common underlying latent construct—a type of "third variable" that often is not recognized as such.

Second, in Studies 2 and 3, we measured and controlled substantive variables that share variance with, or could function as shared antecedents of, inspiration and well-being. The longitudinal effects of inspiration on positive well-being variables were found to be robust when we controlled a variety of third variables, including variables that are closely associated with inspiration (e.g., PA) or with positive well-being (e.g., self-esteem; see Footnote 4). The effects of inspiration were also robust when we controlled the full set of Big Five traits, which represent broad dimensions of personality and predict well-being (DeNeve & Cooper, 1998).

Third, we used strategies that help rule out the possibility that inspiration and well-being are related only because of sources of shared method variance (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The assessment of inspiration and well-being on separate occasions in Studies 2–4 helps rule out effects of current mood and other shared method effects. In Study 2, we measured and controlled several types of social desirability biases, and inspiration was found to predict longitudinal change in well-being even when these biases were controlled. In Study 3, we found that trait inspiration and personal goals inspiration accounted for unique variance in a number of well-being variables. If the effects of inspiration were due to an artifact related to the self-report of inspiration, then such an artifact likely would not survive the control of a second inspiration variable that is also assessed by self-report.

Finally, use of cross-lagged designs bolsters the argument that the effects of inspiration were not due to common causes, including all three classes of third variables discussed above (underlying latent constructs, shared antecedents, method factors). Most variance that is shared between measures of inspiration and well-being due to third variables would be expected to be removed from the Time 1 inspiration predictor variable when Time 1 well-being is controlled. Indeed, in Study 2, we provided direct empirical support for this argument. Time 1 social desirability variables tended to have significant bivariate relations with Time 2 well-being variables. However, after the Time 1 level of the criterion well-being variable was controlled, the social desirability variables generally failed to account for unique variance in Time 2 well-being. Together, these diverse isolation strategies build an unusually strong case for the nonspuriousness of the effects of a psychological state. In addressing the criteria for causality, Studies 1–3 provided support for the hypothesis that inspiration promotes well-being.

Mediation

In Study 4, we sought to document mediating processes. Variations in inspiration across mornings predicted variations in positive well-being variables across evenings. These effects were mediated by purpose and gratitude. An effect of inspiration on purpose is consistent with the fact that inspiration involves the revelation of a source of intrinsic value that the individual feels moved to transmit or actualize. The fact that purpose in turn predicted subsequent well-being is consistent with a literature on the benefits of having purpose in life (e.g., Smith & Zautra, 2004).

Our mediational model has implications for the purpose-in-life construct. Although purpose is closely associated with goal constructs (Elliot & Thrash, 2001; Thrash & Elliot, 2001), we believe that a sense of purpose cannot be adopted easily in the way that a goal may be adopted. Rather, a sense of purpose tends to be *furnished*, at least in part, by inspiration, which is itself difficult to bring under volitional control.

Gratitude was a second mediator through which inspiration influenced well-being. This finding speaks to what is perhaps most unique about the inspiration construct: It is a desirable type of motivation for which one does not accept full responsibility. The fact that individuals tend to deny responsibility for their inspiration and feel grateful to its source speaks to the limits of personal volition. One cannot awaken oneself—one must be awoken—to something that is more worthy of concern than one's current concerns. A question for future research is whether some types of inspiration produce more gratitude than others. Inspiration ascribed to an agent that acts with the intention to inspire (e.g., God, a coach) may yield deeper gratitude than inspiration that is received "as if" from an intentional agent (e.g., the "unseen collaborator" or muse described by writer Robert Stevenson, 1916) or that is derived from an encountered rather than a received stimulus object (e.g., Michael Jordan, nature).

The documentation of mediating processes enhances, in two respects, the case that inspiration is a cause of well-being. First, it validates the theoretical model on which the hypothesis of causality is based. Second, the fact that inspiration had direct (unique) effects on most positive well-being variables when only a single mediator was modeled further attests to the robustness and nonspuriousness of the effects of inspiration. Only when both theoretically important mediating variables were modeled did inspiration no longer have direct effects on most well-being variables.

Future Directions, Limitations, and Conclusion

In future research on inspiration and well-being, it would be valuable to distinguish the component processes of being inspired *by* and being inspired *to* (Thrash & Elliot, 2004). Inspiration, by our definition, involves both components, and these components have been found to converge in factor analytic research (Thrash & Elliot, 2004). Consider the case of being inspired to achieve after observing a successful role model, such as Michael Jordan. One appreciates the intrinsic value of Jordan's hard work, task mastery, or exceptional performance (i.e., one is inspired *by*); as a result of this appreciation, one desires to work harder, master a task, or perform at a higher level in one's own life (i.e., one is inspired *to*).

Although both component processes are present in a full episode of inspiration, these processes may dissociate in some cases. In particular, one may be inspired *by* without being inspired *to*. For instance, one may be "moved" by Jordan's competence but not moved to do anything in particular, perhaps because one fails to see the relevance of success in basketball to one's own life. A hypothesis for future research is that being inspired *by* without being inspired *to* is not particularly conducive to well-being. If one regards a stimulus object as inspiring but is not inspired to pursue an actionable goal, one is less likely to derive a sense of purpose and has less to feel grateful for, and therefore one is less likely to experience an improvement in well-being. Consistent with this proposal, Peterson and Seligman (2004) noted that the construct of "appreciation of beauty and excellence," which resembles the component process of being inspired *by*, tends to be a poor predictor of well-being and other life outcomes.

Working in the social comparison literature, Lockwood and Kunda (1997) showed that a role model's success is inspiring if it is attainable but demoralizing if it is unattainable. Inspiration and demoralization were found to be greater when the role model is more relevant to the observer. Because Jordan's level of success is beyond the reach of nearly all students, and because basketball is not relevant to most students' aspirations, it may seem surprising that exposure to Jordan was a robust positive predictor of inspiration in Study 1 ($\beta = .72$). However, from our perspective, pure episodes of inspiration arise from *by* and *to* component processes, rather than from a flattering comparison of oneself with another. In fact, the low relevance of basketball to a typical student's aspirations may minimize potentially demoralizing social comparison processes, thereby making the student more open to appreciating the beauty of Jordan's maneuvers. Once the student appreciates Jordan's competence, we posit, he or she becomes inspired to place greater priority on developing competence, assuming that he or she is able to translate Jordan's inspiring qualities into a personal goal that is relevant and of appropriate difficulty. These issues await direct research attention.

Another question for future research is whether inspiration has effects that last longer than 3 months. We predict that particular episodes of inspiration may have long-lasting effects if the inspired *by* component process involves a significant restructuring of the individual's value system or if the inspired *to* component process involves the adoption of a long-term goal. We predict further that the chronic tendency to experience inspiration may be particularly conducive to promoting enduring change in well-being. In their discussion of the possibility of enduring change in happiness, Lyubomirksy et al. (2005) argued that causes of happiness that are episodic or that vary in focus may be resistant to the effects of hedonic adaptation, an obstacle to enduring happiness. Inspiration is inherently episodic, and particular episodes are likely to vary in focus, as when a scientist becomes inspired by each of a series of research ideas. The dynamic process of "breathing in" ideas may sustain psychological thriving, much as the dynamic biological process of inhalation sustains life itself.

Several limitations of our research should be noted. First, the dependent variables examined herein do not exhaust the domain of well-being. It is unknown, for instance, whether inspiration promotes deactivated forms of affect, such as contentment. Second, although we have built a strong case for causality based on converging evidence from multiple research designs, causality has not been (and perhaps cannot be) proved definitively, because psychological states such as inspiration are not readily amenable to experimental control. This issue may be inconsequential from a pragmatic viewpoint, because Studies 2–4 showed that inspiration is, at a minimum, a robust predictor of well-being, and Study 1 showed that it is possible to achieve the benefits of inspiration by manipulating its causes. Third, we have examined mediation only at the within-person level of analysis and have not established causality with respect to the links in the mediational model. The issue of mediation therefore deserves additional research attention. Finally, we have not shown that the effects of inspiration are generalizable beyond the population of U.S. college students. It is noteworthy, however, that diverse languages throughout the world

have a common term for *breath* and *spirit* (or *life force*; Flaherty, 2004), suggesting that being *inspirited* is not a Western phenomenon, nor an idiosyncrasy of college students in the 21st century.

We opened this article by contrasting inspiration with the agency-related constructs that have been emphasized by well-being researchers. Inspiration is not incompatible with personal agency. Indeed, although some dictionary definitions of *agency* refer primarily to action, others refer to action on behalf of someone or something else. The mediated agency that characterizes inspiration is captured well in the words of Nozick (1989), who used the term *light* to refer to a dimension that encompasses truth, beauty, goodness, and holiness: "The ethic of light calls for a being to be its vessel. To be a being of light is to be its transmitter" (p. 214). Our findings suggest that if researchers continue to focus on active aspects of agency and ignore the human longing to mediate on behalf of something beyond the self, then significant variance in well-being will go unaccounted for.

Inspiration may be compatible with agency in a second respect. Although inspiration eludes direct volitional control, it may be possible to promote one's own inspiration (and well-being) indirectly. For instance, one may bring oneself into contact with people or objects (or memories thereof) that have previously proved inspiring, or one may immerse oneself in stimulating materials to increase the probability of having a creative insight or spiritual epiphany. We are reminded of Tchaikovsky's advice, "If we wait for the mood, without endeavouring to meet it half-way, we easily become indolent and apathetic. We must be patient, and believe that inspiration will come to those who can master their *disinclination*" (Tchaikovsky, 2004, p. 281).

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