

Personality and Social Psychology Bulletin

<http://psp.sagepub.com/>

Beyond Self-Protection: Self-Affirmation Benefits Hedonic and Eudaimonic Well-Being

S. Katherine Nelson, Joshua A. K. Fuller, Incheol Choi and Sonja Lyubomirsky

Pers Soc Psychol Bull published online 29 April 2014

DOI: 10.1177/0146167214533389

The online version of this article can be found at:

<http://psp.sagepub.com/content/early/2014/04/29/0146167214533389>

Published by:



<http://www.sagepublications.com>

On behalf of:



[Society for Personality and Social Psychology](http://www.spsociety.org)

Additional services and information for *Personality and Social Psychology Bulletin* can be found at:

Email Alerts: <http://psp.sagepub.com/cgi/alerts>

Subscriptions: <http://psp.sagepub.com/subscriptions>

Reprints: <http://www.sagepub.com/journalsReprints.nav>

Permissions: <http://www.sagepub.com/journalsPermissions.nav>

>> [OnlineFirst Version of Record](#) - Apr 29, 2014

[What is This?](#)

Beyond Self-Protection: Self-Affirmation Benefits Hedonic and Eudaimonic Well-Being

Personality and Social
Psychology Bulletin
1–14
© 2014 by the Society for Personality
and Social Psychology, Inc
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/0146167214533389
pspb.sagepub.com


S. Katherine Nelson¹, Joshua A. K. Fuller², Incheol Choi²,
and Sonja Lyubomirsky¹

Abstract

Limited work has examined how self-affirmation might lead to positive outcomes beyond the maintenance of a favorable self-image. To address this gap in the literature, we conducted two studies in two cultures to establish the benefits of self-affirmation for psychological well-being. In Study 1, South Korean participants who affirmed their values for 2 weeks showed increased eudaimonic well-being (need satisfaction, meaning, and flow) relative to control participants. In Study 2, U.S. participants performed a self-affirmation activity for 4 weeks. Extending Study 1, after 2 weeks, self-affirmation led both to increased eudaimonic well-being and hedonic well-being (affect balance). By 4 weeks, however, these effects were non-linear, and the increases in affect balance were only present for vulnerable participants—those initially low in eudaimonic well-being. In sum, the benefits of self-affirmation appear to extend beyond self-protection to include two types of well-being.

Keywords

self-affirmation, happiness, hedonic well-being, eudaimonic well-being, culture

Received June 27, 2013; revision accepted April 4, 2014

People are confronted with daily challenges that threaten their happiness and self-image. Accordingly, they must navigate difficulties, manage potentially threatening information, and maintain a rosy outlook about themselves and their worlds. Two distinct, but congruent, literatures have developed to understand how people maintain their positive self-images (i.e., self-affirmation theory; see Sherman & Hartson, 2011, for a review) and their happiness (i.e., theories of subjective well-being and positive activity interventions; see Diener, Oishi, & Lucas, 2009; Lyubomirsky & Layous, 2013, for reviews). Despite undeniable parallels, however, no studies to date have married these two lines of research to demonstrate the well-being benefits of practicing self-affirmation.

Self-Affirmation

Self-affirmation theory is rooted in the premise that people are motivated to maintain a view of the self that is “adaptively and morally adequate, . . . competent, good, coherent, unitary, stable, capable of free choice, [and] capable of controlling important outcomes” (Steele, 1988, p. 262). One way to maintain such a favorable self-image is to affirm one’s important values, attributes, and actions. Affirming core values promotes a positive self-image because it

provides a means by which individuals can secure a sense of being competent, good, and self-determining in the face of life’s challenges (Sherman & Cohen, 2006; Steele, 1988).

Numerous studies have demonstrated the benefits of self-affirmation practices in multiple domains, including health risk perception and health behavior change (Epton & Harris, 2008; Logel & Cohen, 2012; Sherman & Cohen, 2006), physiological responses to stressful situations (Creswell et al., 2005; Sherman, Bunyan, Creswell, & Jaremka, 2009), and academic outcomes in response to stereotype threat (Cohen, Garcia, Apfel, & Master, 2006; Cohen, Garcia, Purdie-Vaughns, Apfel, & Brzustoski, 2009). Thus, affirming core values appears to protect one’s self-image from the stresses and threats of everyday life.

Although self-affirmation has been associated with numerous benefits, the majority of the studies described above were conducted with participants facing a threatening situation (e.g., African American students confronting

¹University of California, Riverside, USA

²Seoul National University, South Korea

Corresponding Author:

S. Katherine Nelson, Department of Psychology, University of California, 900 University Ave., Riverside, CA 92521, USA.

Email: snels007@ucr.edu

stereotype threat; Cohen et al., 2006; Cohen et al., 2009). Indeed, theory suggests that self-affirmation operates as part of a psychological immune system, which, like the physical immune system, functions primarily to protect individuals from impending threats (Gilbert, Pinel, Wilson, Blumberg, & Wheatley, 1998; Sherman & Hartson, 2011). Yet, it remains unclear whether individuals who are not experiencing threat would also benefit from self-affirmation. For example, one study found that self-affirmation diminishes information processing and raises confidence in non-threatening situations (Briñol, Petty, Gallardo, & DeMarree, 2007), but no research has investigated how self-affirmation might influence well-being in non-threatening situations.

Although the primary function of the body's immune system is to respond to threats as they occur, this system does not lie dormant when the individual is out of harm's way. Indeed, people can actively fortify their abilities to fight off disease by engaging in healthy behaviors, such as maintaining a balanced diet and exercising regularly. Similarly, self-affirmation may serve as one means to strengthen the psychological immune system in non-threatening situations to protect against potential future threats (Sherman & Hartson, 2011). Supporting this notion, self-affirmation has been found to boost one specific resource—namely, self-control (Schmeichel & Vohs, 2009). Specifically, after participants' self-resources were depleted, those who affirmed their most important values demonstrated higher levels of self-control (by holding their hands in cold water longer) than those who did not practice self-affirmation, and performed just as well as those who were not depleted. This work suggests that self-affirmation may be one means by which people can stretch their resources. Yet, to our knowledge, no studies to date have tested whether affirming core values can boost psychological resources, like psychological well-being, under non-threatening situations.

Hedonic and Eudaimonic Well-Being

Compatible with people's motivation to maintain a positive self-image is their motivation to be happy (Diener, 2000). Researchers posit two types of well-being—hedonic and eudaimonic. Hedonic well-being encompasses the experience of frequent positive emotions and infrequent negative ones (i.e., affect balance), whereas eudaimonic well-being represents living life in accordance with a "true self," including the fulfillment of psychological needs, the experience of meaning and purpose in life, and engagement in flow experiences (Ryan & Deci, 2001). Despite theoretical interest in eudaimonic well-being, however, very little research has focused on methods to enhance it. To understand the effects of self-affirmation on the full range of human emotional experience, we investigated both hedonic and eudaimonic well-being.

Because affirming core values is thought to foster a positive self-image—a construct strikingly close to hedonic

well-being (Lyubomirsky, Tkach, & DiMatteo, 2006)—we predicted that it would promote more positive emotions and fewer negative emotions. Although previous self-affirmation studies have had mixed results regarding the influence of self-affirmation on emotions (McQueen & Klein, 2006), the majority of these studies were short-term lab experiments. We predicted that self-affirmation would lead to increases in positive emotions, and decreases in negative ones, when performed over a longer period of time (i.e., 4 weeks).

The current study examined three aspects of eudaimonic well-being. First, we measured the fulfillment of three inherent psychological needs—autonomy (feeling in control of one's own choices), relatedness (feeling close and connected to others), and competence (feeling effective and skilled; Deci & Ryan, 2000, 2008). Self-affirmation theory (Steele, 1988) also positions competence and autonomy as important components of self-image, and self-affirmation has been found to increase feelings of love, compassion, and connectedness (Cook, Purdie-Vaughns, Garcia, & Cohen, 2012; Crocker, Niiya, & Mischkowski, 2008). Yet, to our knowledge, no studies have tested whether self-affirmation increases competence and autonomy.

Second, other research has noted the importance of meaning and purpose in life as vital aspects of eudaimonic well-being (Ryff, 1989; Steger, 2009). However, despite the connections between meaning and well-being, research on ways to improve meaning is scant (Shin & Steger, *in press*). Supporting the relationship between personal values and meaning, one study found that, to the extent that individuals pursue goals that fit with their values, they also experience higher levels of life meaning (McGregor & Little, 1998). Accordingly, we explored whether focusing on one's core values increases the meaning component of eudaimonic well-being.

Finally, because self-affirmation prompts people to reflect on the values and experiences most important to them, it may also encourage them to engage in activities that are congruent with those values—activities that are absorbing and enjoyable, also known as flow activities (Csikszentmihalyi, 1990). Flow experiences are rated as intensely positive, and people who frequently experience flow report relatively more life meaning and more positive states overall (Csikszentmihalyi, 1999; Rogatko, 2009). Little is known about methods to enhance flow experiences, but one experiment found that practicing optimism successfully increased flow (Layous, Nelson, & Lyubomirsky, 2013). Accordingly, we predicted that self-affirmation would boost the flow component of eudaimonic well-being.

Positive Activity Interventions

Early investigations comparing happy and unhappy people demonstrated that happy people are more likely to view themselves and their worlds in positive ways (Lyubomirsky, 2001). They are relatively less influenced by information

that could deflate their self-image (Lyubomirsky & Ross, 1997, 1999), recall identical events more positively (Lyubomirsky & Tucker, 1998), and are less likely to dwell on failures (Lyubomirsky, Boehm, Kasri, & Zehm, 2011). In other words, happy people exhibit processes that maintain a positive self-image.

Building on this research, many studies have investigated strategies to improve individuals' happiness (Sin & Lyubomirsky, 2009). Indeed, practicing kindness (Lyubomirsky, Sheldon, & Schkade, 2005), penning gratitude letters (Boehm, Lyubomirsky, & Sheldon, 2011), and expressing optimism (Layous et al., 2013) have all been found to promote hedonic well-being. Notably missing, however, is the practice of self-affirmation. Furthermore, despite this promising evidence that people can improve their hedonic well-being, to our knowledge, few studies have investigated whether simple positive activities can improve eudaimonic well-being.

In sum, it appears that motives to be happy and motives to maintain a positive self-image are congruent, such that methods to promote a positive self-image should also promote well-being, and vice versa. In addition, a number of studies have revealed multiple benefits of practicing self-affirmation, yet none have extended these benefits to well-being. Finally, although substantial evidence supports multiple ways to pursue hedonic well-being, the current study is one of the first to investigate whether it is possible to improve eudaimonic well-being.

Present Studies

We conducted two studies to examine whether the benefits of self-affirmation extend to well-being. Study 1 tested the effects of a 2-week self-affirmation intervention among South Korean students on hedonic and eudaimonic well-being. Study 2 sought to broaden these findings to a different sample (U.S. students), to determine whether self-affirmation improves well-being when practiced over a longer period of time (4 weeks, mirroring typical well-being interventions). In both studies, we explored whether participants' initial status impacts the effect.

Culture

Few self-affirmation studies have been conducted with non-Western samples. In one study, after being exposed to a dissonance-inducing threat, Canadian participants responded to a self-affirming activity, but Japanese participants did not (Heine & Lehman, 1997). It is unclear, however, whether Japanese individuals were insensitive to self-affirmation or simply failed to experience dissonance (cf. Hoshino-Browne et al., 2005).

By contrast, a growing literature suggests that culture shapes how people conceptualize and experience well-being (Suh, Diener, Oishi, & Triandis, 1998). For example, research

indicates that members of Asian cultures are more likely to feel comfortable with emotional complexity (i.e., with experiencing a mix of positive and negative emotions), but Westerners are highly motivated to maximize positive emotions and minimize negative ones (Bagozzi, Wong, & Yi, 1999; Kitayama, Markus, & Kurokawa, 2000). Moreover, members of Western cultures demonstrate a remarkably high need for positive self-regard, but this need to perceive and maintain positive views of the self is not apparent in East Asian cultures (Heine, Lehman, Markus, & Kitayama, 1999). Similarly, self-esteem has been found to play a larger role in the well-being of people in individualist than collectivist cultures (E. Diener & Diener, 1995). These findings suggest that people may respond differently to happiness-increasing interventions based on their cultural background. Individualists may respond more positively to self-focused activities (e.g., affirming personal values or expressing optimism; for preliminary evidence, see Boehm et al., 2011), whereas collectivists may respond better to other-focused activities (e.g., doing acts of kindness; for preliminary evidence, see Layous, Lee, Choi, & Lyubomirsky, in press).

Because classic self-affirmation exercises are focused primarily on boosting self-image (Steele, 1988), and self-image is more closely linked to hedonic well-being in Western cultures, we predicted that self-affirmation would be more strongly tied to hedonic well-being in U.S. than Asian participants. Moreover, Americans' positivity biases may lead them to recall primarily positive aspects of their core values (e.g., good times with family), whereas Asians' comfort with emotional complexity may promote a focus on both positive and negative elements (e.g., the disappointments as well as the joys of close relationships), thus magnifying and diminishing the hedonic benefits of self-affirmation for Americans and Asians, respectively. By contrast, we predicted that the self-affirmation activity would be associated with increases in eudaimonic well-being in both cultures, as considering the most cherished aspects of an individual's life reminds her that she is fulfilling those values. Moreover, it is possible for the experience of eudaimonic well-being to be independent of the experience of hedonic well-being (Frankl, 1963).

Vulnerability

An important emerging line of research on happiness-increasing activities is examining the conditions that impact their success (see Lyubomirsky & Layous, 2013). One potential boundary condition is the happiness seeker's baseline well-being prior to beginning an activity. For example, more depressed participants show bigger boosts in happiness in response to a positive activity than less depressed ones (Layous & Lyubomirsky, 2011). Furthermore, research on self-affirmation indicates that vulnerable individuals (e.g., African Americans with low grade point averages [GPAs]) demonstrate the greatest benefits from affirming core values (Cohen et al., 2006; Cohen et al., 2009; Sherman et al.,

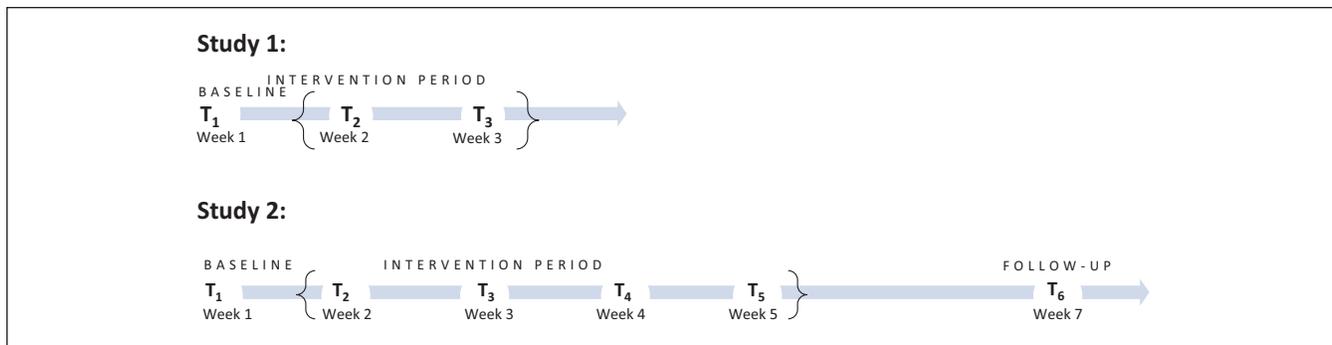


Figure 1. Study 1 and Study 2 timelines.

2009). To better understand the factors that contribute to the biggest benefits to well-being, and to test the notion that more vulnerable individuals benefit more from self-affirmation, we examined whether initial status in eudaimonic well-being (i.e., meaning, need satisfaction, and flow) and hedonic well-being (i.e., affect balance) predicted increases in both types of well-being.

Activity Duration

Performing a positive activity with the appropriate dosage and timing is an important predictor of its success (Cook et al., 2012; Lyubomirsky & Layous, 2013). A related question concerns activity duration. Standard happiness interventions instruct participants to practice a positive activity for 4 to 6 weeks (Sin & Lyubomirsky, 2009); by contrast, self-affirmation manipulations are typically very short, with one to two sessions at most (McQueen & Klein, 2006). To our knowledge, only one published study used a longer duration. In this study, seventh-grade students who performed a self-affirmation activity three to five times over the course of the academic year demonstrated substantial academic improvements (Cohen et al., 2009). To build on prior happiness intervention and self-affirmation research, we implemented self-affirmation once a week at two durations: 2 weeks (Study 1) and 4 weeks (Study 2).

Study 1

Method

Participants. Students ($n = 70$; 74% male) were recruited from a psychology course at a large university in South Korea and were paid US\$10 for their participation. All participants were Asian, aged 18 to 25 years ($M = 20.67$, $SD = 1.70$).

Procedure. Participants volunteered to participate in an online study involving happiness-enhancing activities. They were directed to a website and randomly assigned to either a self-affirmation ($n = 35$) or control ($n = 35$) condition. Students participated in the study once a week for 3 weeks as

part of a larger project. During the first week, they completed baseline measures of well-being. During the remaining 2 weeks, participants completed their assigned activity followed by well-being measures (see Figure 1 for timeline). Twenty participants completed only one time point and were not included in subsequent analyses, resulting in a final sample of 50 participants (self-affirmation $n = 22$; control $n = 28$). Participants who completed only one time point did not differ from participants who completed two or more time points in age, gender, or baseline eudaimonic or hedonic well-being ($t_s < .60$, $p_s > .58$).

Activity instructions. Participants in both conditions were told that they would be engaging in activities for the next few weeks designed to improve their well-being. Participants in the self-affirmation condition were instructed to focus on their most important values. They were invited to choose a value from a list of 15 (e.g., independence, music/art, honesty, relationships with family/friends), to write about why the value is important to them, including personal experiences demonstrating its significance (adapted from Cohen, Aronson, & Steele, 2000; Harris & Napper, 2005). Participants predominantly chose to write about either belonging to a social group, or relationships with family and friends each week (46% and 53%, respectively). After the first week, participants were told that they would continue to focus on their most important values, and, that if they chose to write about the same value as the previous week, to try to focus on different aspects of that value. Participants in the control condition were instructed to write about their activities from the previous day—a “positive exercise” ostensibly designed to improve their organizational skills (see Burson, Crocker, & Mischkowski, 2012; Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011).

Measures

Hedonic well-being. The Modified Differential Emotions Scale (Fredrickson, Tugade, Waugh, & Larkin, 2003) asked participants to rate the degree to which they felt a variety of positive emotions (e.g., “I have felt amused, fun-loving, silly”) and negative emotions (e.g., “I have felt angry, irritated, annoyed”)

during the past week (1 = *never*, 5 = *most of the time*). Cronbach's alphas ranged from .84 to .89 across time points. In this sample, positive and negative emotions were negatively correlated with one another (r s ranging from $-.21$ to $-.40$ across study measurements). After calculating the means for positive emotions and negative emotions (reverse scored) for each participant, these two scores were averaged to create a composite of affect balance. Affect balance represents the emotional component of subjective well-being (Diener, 1984), with higher scores reflecting the experience of frequent positive emotions and infrequent negative ones.

Eudaimonic well-being. Participants completed measures of need satisfaction, meaning, and flow (described below). Scores on each of these scales were averaged to create a composite representing eudaimonic well-being.¹ This composite demonstrated strong reliability, with Cronbach's alphas ranging from .90 to .92 across measurements in this study.

To assess the degree to which their core needs were being met (Deci & Ryan, 2000; Sheldon, Elliot, Kim, & Kasser, 2001), participants were asked to rate their experience during the past week of nine need satisfying feelings (1 = *not at all*, 7 = *very much*), representing autonomy (e.g., "I felt free to do things my own way"), competence (e.g., "I felt very capable in what I did"), and relatedness (e.g., "I felt close and connected to other people who are important to me"). An overall need satisfaction composite was created, comprising all nine items (Cronbach's α s from .83 to .86).

We developed a four-item scale for the current study to measure meaning in life (e.g., "I have felt a sense of purpose in my daily life").² Participants rated their responses to each item on a 7-point scale (1 = *not at all*, 7 = *very much*). Whereas other measures of meaning in life (e.g., Meaning in Life Questionnaire [MLQ]; Steger, Frazier, Oishi, & Kaler, 2006) tap stable aspects of life meaning, these items were designed to be sensitive to weekly changes in felt meaning with questions focusing on participants' feelings of meaning in the past week, rather than their global sense of meaning in life. Meaning scores on this measure are strongly correlated with MLQ scores ($r = .56$). Cronbach's alphas ranged from .73 to .79.

To assess flow (Csikszentmihalyi, 1990), participants rated how they felt during the past week on five items (e.g., "I felt unaware of myself; I was only aware of the task at hand"); Cronbach's α s from .81 to .87) on a 7-point scale (1 = *not at all*, 7 = *very much*). This scale has successfully been used in past research (Layous et al., 2013); in the current sample, flow was significantly associated with positive emotions, $r(67) = .53, p < .001$; subjective happiness, $r(67) = .32, p = .008$; and presence of meaning, $r(67) = .39, p = .001$, and marginally related to negative emotions, $r = -.22, p = .08$.

Results

Overview of analyses. To test our hypothesis that both types of well-being would increase across the three time points in

response to self-affirmation, we used multilevel growth curve modeling to account for repeated measurements nested within individuals. We started with an unconditional growth model and then compared hypothesis-testing models with the unconditional growth model:

$$\text{Composite model: } Y_{ij} = \gamma_{00} + \gamma_{10}\text{Time}_{ij} + (\varepsilon_{ij} + \zeta_{0i} + \zeta_{1i}\text{Time}_{ij}),$$

$$\text{Level 1 model: } Y_{ij} = \pi_{0i} + \pi_{1i}\text{Time}_{ij} + \varepsilon_{ij},$$

$$\text{Level 2 models: } \pi_{0i} = \gamma_{00} + \zeta_{0i}, \pi_{1i} = \gamma_{10} + \zeta_{1i}.$$

Time was centered around baseline, and a variable representing condition (dummy coded, control group as reference) was entered as a between-subjects predictor at the second level of the models.

Initial analyses revealed that participants in the self-affirmation condition reported lower affect balance at baseline, $t(48) = 3.29, p = .002$. No differences were detected between the self-affirmation and control condition on eudaimonic well-being. See Table 1 for means and standard deviations of hedonic well-being (affect balance) and eudaimonic well-being at each time point.

Changes in well-being. Relative to the control group, self-affirmation led to greater improvements in eudaimonic well-being, $\gamma_{11} = 0.25, SE = 0.11, t(80) = 2.17, p = .03, d = 0.82^3$ (see left panel of Figure 2, as well as Table 2 for parameter estimates and model fit indices). However, tests of our unconditional model for affect balance revealed no significant variation in changes over time, $\sigma_1^2 = 0.004, p = .49$. This statistic indicates that, across participants in the self-affirmation and control conditions, everyone demonstrated similar rates of change over time, indicating no between-person (e.g., condition) differences in slope (Singer & Willett, 2003). Accordingly, we did not pursue any hypothesis-testing models with this variable.

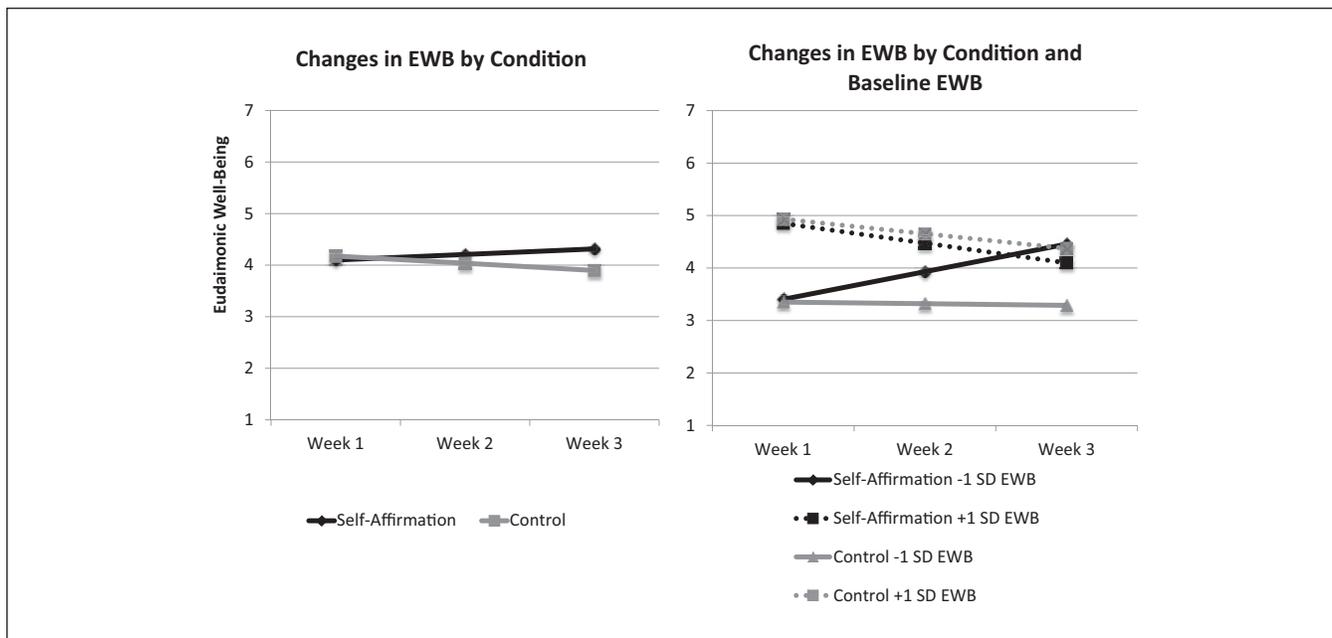
Moderator analyses. Next, we sought to determine whether baseline hedonic and eudaimonic well-being moderated the influence of practicing self-affirmation on eudaimonic well-being. Baseline eudaimonic well-being moderated improvements in eudaimonic well-being in response to practicing self-affirmation, $\gamma_{13} = -0.43, SE = 0.14, t(78) = -2.99, p = .004$, but baseline hedonic well-being did not, $\gamma_{13} = -0.09, p = .67$. Only participants with low eudaimonic well-being at the outset who practiced self-affirmation demonstrated well-being gains (see Figure 2, right panel).

Discussion

Our first study demonstrated that affirming core values over 2 weeks led to increases in eudaimonic well-being, but not hedonic well-being, among South Korean students. In addition, these improvements in eudaimonic well-being were qualified by a moderating effect of vulnerability—only

Table 1. Means (Standard Deviations) for Dependent Variables at Each Time Point in Studies 1 and 2.

	T ₁	T ₂	T ₃	T ₄	T ₅	T ₆
Study 1						
Control						
Hedonic well-being	3.90 (0.65)	4.14 (0.70)	3.69 (0.81)	—	—	—
Eudaimonic well-being	4.16 (0.84)	4.14 (0.89)	3.93 (0.89)	—	—	—
Self-affirmation						
Hedonic well-being	3.61 (0.48)	3.66 (0.35)	3.65 (0.63)	—	—	—
Eudaimonic well-being	4.10 (0.69)	4.13 (0.38)	4.27 (0.69)	—	—	—
Study 2						
Control						
Hedonic well-being	3.56 (0.41)	3.46 (0.49)	3.22 (0.60)	3.36 (0.53)	3.41 (0.40)	3.43 (0.44)
Eudaimonic well-being	5.13 (1.01)	4.58 (1.06)	4.54 (1.15)	4.45 (1.10)	4.64 (1.04)	4.80 (0.86)
Self-affirmation						
Hedonic well-being	3.44 (0.45)	3.50 (0.52)	3.48 (0.43)	3.43 (0.49)	3.60 (0.45)	3.54 (0.39)
Eudaimonic well-being	4.77 (0.90)	4.78 (1.11)	4.90 (1.01)	5.13 (1.14)	4.81 (1.12)	4.68 (1.02)

**Figure 2.** Model-predicted changes in EWB by condition (left panel) and by condition and baseline EWB (panel) through posttest for Study 1. High (low) baseline EWB is presented as one standard deviation above (below) the mean.
Note. EWB = eudaimonic well-being.

participants who practiced self-affirmation and were already low in eudaimonic well-being to begin with demonstrated well-being gains. One possible explanation for this moderator effect is that individuals low in baseline eudaimonic well-being were demonstrating regression to the mean. If so, then participants low in eudaimonic well-being should have reported well-being improvements in both conditions, yet we did not observe an increase in the control condition.

Whereas past research on self-affirmation has focused primarily on its benefits for responding to threat, our Study 1 results suggest that affirming core values is one way to

achieve eudaimonic well-being for vulnerable individuals. These findings are limited, however, by both culture and duration. Accordingly, we conducted a second study with U.S. students, who affirmed their core values for 4 weeks.

Study 2

Method

Participants. Students ($N = 65$; 72% female) at a public U.S. university were recruited from the psychology department's

Table 2. Model Parameters (Standard Errors) and Goodness of Fit for Linear Changes in EWB Through Posttest for Study 1.

	Effect	Parameter	Model 1: Unconditional Linear Growth	Model 2: Self-Affirmation vs. Control	Model 3: Baseline EWB as Moderator
Fixed effects					
Status at Baseline, π_{oi}	Intercept	γ_{00}	4.14*** (0.09)	4.18*** (0.13)	4.14*** (0.04)
	Self-Affirmation	γ_{01}		-0.08 (0.19)	-0.01 (0.05)
	Baseline EWB	γ_{02}			1.04*** (0.04)
	Self-Affirmation × Baseline EWB	γ_{03}			-0.09 (0.07)
Rate of Change, π_{ii}	Time	γ_{10}	-0.03 (0.06)	-0.14 [†] (0.08)	-0.16* (0.07)
	Self-Affirmation	γ_{11}		0.25* (0.11)	0.23* (0.10)
	Baseline EWB	γ_{12}			-0.16* (0.08)
	Self-Affirmation × Baseline EWB	γ_{13}			-0.43*** (0.14)
Goodness of Fit	Deviance		289.97	284.84	61.59
	$\Delta\chi^2$			5.12 [†]	223.25***
	Δdf			2	4

Note. In Model 1, the intercept parameter estimate (γ_{00}) represents the average eudaimonic well-being (EWB) score at baseline across the sample. In Models 2 and 3, this parameter represents the average EWB score at baseline for the control group, and γ_{01} represents the difference between the self-affirmation and the control condition at baseline. In Model 3, γ_{02} represents the additional effect of baseline EWB in the control group, and γ_{03} represents the additional effect of baseline EWB in the self-affirmation condition at baseline. In Model 1, γ_{10} is the estimate of the slope (rate of linear change in EWB over time) across the sample. In Models 2 and 3, γ_{10} shifts to represent the slope of the control group, whereas γ_{11} represents the additional effect of being in the self-affirmation condition on slope. In Model 3, γ_{12} and γ_{13} represent the additional effect of baseline EWB on the slopes of the control condition and the self-affirmation condition, respectively. In all models, the intercept (baseline EWB) and slope (Time) were free to vary. [†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$ (all p -values are two-tailed).

participant pool to complete our study in exchange for partial course credit and US\$5 payment. The majority were Asian American (66%), followed by White (11%), Latino(a) (11%), African American (3%), and Other (9%). Their ages ranged from 18 to 24 ($M = 19.21$; $SD = 1.42$).⁴

Procedure and measures. The procedure and measures for this study were the same as Study 1, except that participants engaged in activities for 4 weeks after baseline measures were collected (see Figure 1). In addition, we conducted a 2-week follow-up, yielding a total of six time points. Three participants completed only one time point, and four participants did not complete all of the baseline measures. These seven participants were removed from subsequent analyses, resulting in a final sample of 58 participants (self-affirmation $n = 33$; control $n = 29$). Participants who only completed one time point did not differ from those who completed two or more time points in age, gender, or baseline hedonic or eudaimonic well-being (all $t_s < .65$, $p_s > .50$). During the first week, a plurality of participants (45%) chose to write about belonging to a social group or relationships with family and friends.⁵ During the remaining weeks, however, participants' selection of values were approximately evenly dispersed across the categories.

Results

Overview of analyses. To determine whether self-affirmation yielded well-being benefits when performed for only 2

weeks, we used parallel analyses as Study 1—namely, multilevel modeling using data from the first 3 weeks of the study. As in Study 1, we started with unconditional models, and then compared the baseline unconditional growth model with hypothesis-testing models. For these analyses, time was centered at baseline and a dummy-coded variable representing condition (control group as reference) was entered as a between-subjects predictor at the second level of the models:

$$\text{Composite model: } Y_{ij} = \gamma_{00} + \gamma_{10}\text{Time}_{ij} + (\epsilon_{ij} + \zeta_{oi} + \zeta_{1i}\text{Time}_{ij}),$$

$$\text{Level 1 model: } Y_{ij} = \pi_{0i} + \pi_{1i}\text{Time}_{ij} + \epsilon_{ij},$$

$$\text{Level 2 models: } \pi_{0i} = \gamma_{00} + \zeta_{oi}, \text{ and } \pi_{1i} = \gamma_{10} + \zeta_{1i}.$$

Next, we used multilevel modeling using all six time points to assess the entire intervention period. The inclusion of several more measurement occasions in Study 2 allowed us to test more complex statistical models that we were unable to test in Study 1. For example, theory suggests that as people adapt to positive experiences over time, they garner fewer emotional benefits (Lyubomirsky, 2011). Accordingly, as people continued to perform the self-affirmation exercise, they may have demonstrated diminishing rates of return on their well-being improvements. This pattern would result in quadratic changes in well-being over time. Indeed, exploratory analyses revealed that changes in well-being in this study may be non-linear (see

Table 3. Model Parameters (Standard Errors) and Goodness of Fit for Linear Changes in HWB and EWB Through Mid-Intervention (Week 3) for Study 2.

	Effect	Parameter	Hedonic Well-Being		Eudaimonic Well-Being	
			Model 1: Unconditional Linear Growth	Model 2: Self-Affirmation vs. Control	Model 1: Unconditional Linear Growth	Model 2: Self-Affirmation vs. Control
Fixed effects						
Status at	Intercept	γ_{00}	3.50*** (0.05)	3.58 (0.07)	4.88*** (0.11)	5.04 (0.15)
Baseline, π_{0i}	Self-Affirmation	γ_{01}		-0.16 (0.10)		-0.30* (0.21)
Rate of	Time	γ_{10}	-0.04 (0.04)	-0.17** (0.06)	-0.10 (0.10)	-0.29* (0.14)
Change, π_{1i}	Self-Affirmation	γ_{11}		0.26** (0.08)		0.37† (0.20)
Goodness of Fit	Deviance		217.62	209.36	477.42	473.86
	$\Delta\chi^2$			8.26		3.55
	Δdf			2		2

Note. In Model 1, the intercept parameter estimate (γ_{00}) represents the average well-being (WB) score at baseline across the sample. In Model 2, this parameter represents the average WB score at baseline for the control group, and γ_{01} represents the difference between the self-affirmation and the control condition at baseline. In Model 1, γ_{10} is the estimate of the slope (rate of linear change in WB over time) across the sample. In Model 2, γ_{10} shifts to represent the slope of the control group, whereas γ_{11} represents the additional effect of being in the self-affirmation condition. In all models, the intercept (baseline WB) and slope (Time) were free to vary.

† $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$ (all p -values are two-tailed).

Table 1). Thus, we tested both linear and quadratic changes over time. We started with unconditional models (including both a linear and a quadratic effect of time), and then compared the baseline unconditional quadratic model with hypothesis-testing models:

$$\text{Composite model: } Y_{ij} = \gamma_{00} + \gamma_{10}\text{Time}_{ij} + \gamma_{20}\text{Time}_{ij}^2 + (\varepsilon_{ij} + \zeta_{0i} + \zeta_{1i}\text{Time}_{ij} + \zeta_{2i}\text{Time}_{ij}^2),$$

$$\text{Level 1 model: } Y_{ij} = \pi_{0i} + \pi_{1i}\text{Time}_{ij} + \pi_{2i}\text{Time}_{ij}^2 + \varepsilon_{ij},$$

$$\text{Level 2 models: } \pi_{0i} = \gamma_{00} + \zeta_{0i}, \pi_{1i} = \gamma_{10} + \zeta_{1i}, \text{ and } \pi_{2i} = \gamma_{20} + \zeta_{2i}.$$

Time was centered around the third time point (intervention midpoint).⁶ A variable representing condition (dummy coded, control group as reference) was entered as a between-subjects predictor at the second level of the models.

Finally, no pre-manipulation differences were found between the self-affirmation and control groups on any of our outcome variables (all t s < 1.51 , p s $> .13$). See Table 1 for means and standard deviations for hedonic well-being (affect balance) and eudaimonic well-being (need satisfaction, meaning, and flow) at each time point.

Changes in well-being

Mid-intervention. After 2 weeks, relative to the control condition, the self-affirmation condition demonstrated significant increases in hedonic well-being, $\gamma_{11} = 0.26$, $SE = 0.09$, $t(109) = 2.96$, $p = .004$, $d = 1.32$, and marginal increases in eudaimonic well-being, $\gamma_{11} = 0.37$, $SE = 0.19$, $t(110) = 1.85$, $p = .07$, $d = 0.79$ (see Table 3 for parameter estimates and model fit indices; see Figure 3).

Follow-up. Next, we examined the effect of condition on weekly outcomes over the full intervention period. Self-affirmation led to bigger linear increases in hedonic well-being than control, $\gamma_{11} = 0.09$, $SE = 0.04$, $t(245) = 2.54$, $p = .01$, $d = 0.90$, as well as a quadratic effect that was significantly more negative than control, $\gamma_{13} = -0.04$, $SE = 0.02$, $t(245) = -2.17$, $p = .03$. For eudaimonic well-being, the self-affirmation condition also demonstrated a quadratic trend that was significantly more negative relative to the control condition, $\gamma_{13} = -0.10$, $SE = 0.04$, $t(235) = -2.30$, $p = .02$ (see Table 4 and Figure 4), but no significantly different linear changes in eudaimonic well-being relative to control, $\gamma_{11} = 0.14$, $SE = 0.09$, $t(235) = 1.53$, $p = .13$, $d = 0.49$. Simple effects analyses for both hedonic and eudaimonic well-being did not reveal any significant linear or quadratic changes over time in the self-affirmation condition alone, $|t| < 0.03$, p s $> .18$. Together, these findings suggest that self-affirmation improved well-being relative to a neutral activity, but that these effects were not long-lasting.

Moderator analyses. As in Study 1, we explored whether initial status in hedonic or eudaimonic well-being impacted the effectiveness of self-affirmation at both the 2-week period and the full intervention period.

Mid-intervention. At the 2-week period, baseline levels of hedonic (affect balance) and eudaimonic well-being did not moderate increases in hedonic or eudaimonic well-being in response to the self-affirmation activity (all p s $> .17$).

Follow-up. Next, using four additional models, we tested whether baseline levels of hedonic or eudaimonic well-being independently moderated the impact of practicing

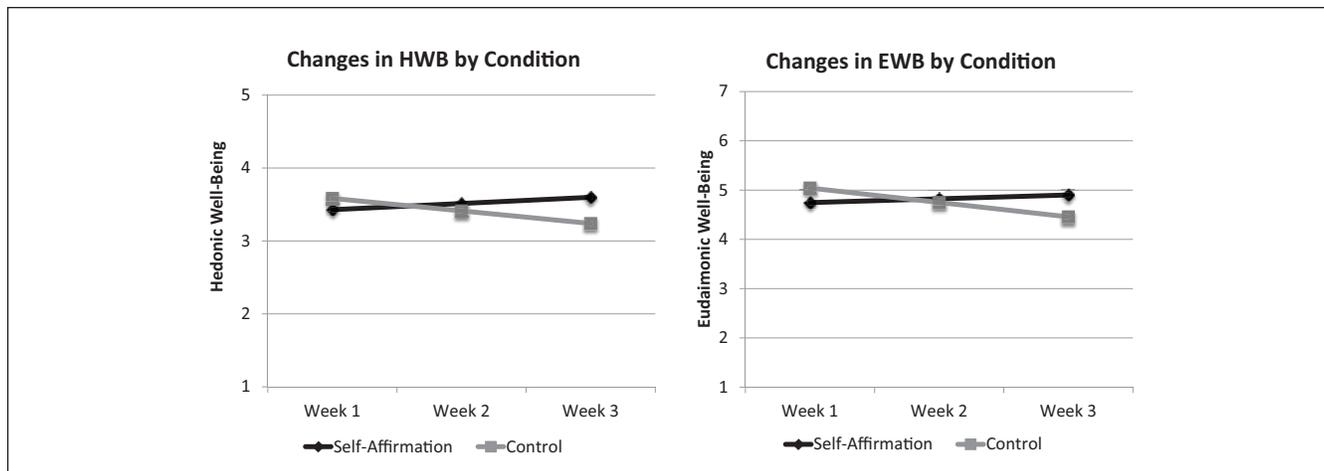


Figure 3. Model-predicted changes in HWB (left panel) and EWB (right panel) by condition through mid-intervention for Study 2. Note. HWB = hedonic well-being; EWB = eudaimonic well-being.

Table 4. Model Parameters (Standard Errors) and Goodness of Fit for Linear and Quadratic Changes in Hedonic Well-Being and Eudaimonic Well-Being Through Follow-Up for Study 2.

Effect	Parameter	Hedonic Well-Being			Eudaimonic Well-Being		
		Model 1: Unconditional Quadratic Growth	Model 2: Self-Affirmation vs. Control	Model 3: Baseline EWB as Moderator	Model 1: Unconditional Quadratic Growth	Model 2: Self-Affirmation vs. Control	
Fixed effects							
Status at Mid- Intervention, π_{oi}	Intercept	γ_{00}	3.42*** (0.06)	3.30*** (0.09)	3.29*** (0.09)	4.72*** (0.14)	4.53*** (0.19)
	Self-Affirmation	γ_{01}		0.24 [†] (0.13)	0.23 [†] (0.13)		0.38 (0.28)
	Baseline EWB	γ_{02}			0.07 (0.09)		
	Baseline EWB × Self- Affirmation	γ_{03}			-0.17 (0.14)		
Linear Rate of Change, π_{ii}	Time	γ_{10}	-0.01 (0.02)	-0.06* (0.03)	-0.06* (0.02)	-0.03 (0.05)	-0.11 (0.07)
	Self-Affirmation	γ_{11}		0.09* (0.04)	0.07* (0.03)		0.14 (0.09)
	Baseline EWB	γ_{12}			-0.02 (0.02)		
	Baseline EWB × Self- Affirmation	γ_{13}			-0.09*** (0.04)		
Quadratic Rate of Change, π_{2i}	Time ²	γ_{20}	0.01 (0.01)	0.04** (0.01)	0.04* (0.01)	0.02 (0.02)	0.08* (0.03)
	Self-Affirmation	γ_{21}		-0.04* (0.02)	-0.04 [†] (0.02)		-0.10* (0.04)
	Baseline EWB	γ_{22}			0.01 (0.01)		
	Baseline EWB × Self- Affirmation	γ_{23}			0.03 (0.02)		
Goodness of Fit	Deviance		288.28	281.91	255.82	717.17	711.38
	$\Delta\chi^2$			6.37 [†]	26.09***		6.40 [†]
	Δdf			3	6		3

Note. In Model 1, the intercept parameter estimate (γ_{00}) represents the average WB score at Week 3 across the sample. In Models 2 and 3, this parameter represents the average WB score at Week 3 for the control group, and γ_{01} represents the difference between the self-affirmation and the control condition at Week 3. In Model 3, γ_{02} represents the additional effect of baseline EWB in the control condition at Week 3, and γ_{03} represents the additional effect of baseline EWB in the self-affirmation condition at Week 3. In Model 1, γ_{10} is the estimate of the linear slope and γ_{20} is the estimate of the quadratic slope across the sample. In Model 2, γ_{10} and γ_{20} shift to represent the linear and quadratic slopes, respectively, of the control group, whereas γ_{11} and γ_{21} represent the additional effects of being in the self-affirmation condition for linear and quadratic change, respectively. In Model 3, γ_{12} and γ_{22} represent the additional effect of baseline EWB for linear and quadratic changes for the control condition, and γ_{13} and γ_{23} represent the additional effect of baseline EWB for linear and quadratic changes in the self-affirmation condition. In all models, the intercept (Week 3), linear slope (Time), and quadratic slope (Time²) were free to vary. WB = well-being; EWB = eudaimonic well-being.
[†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$ (all p -values are two-tailed).

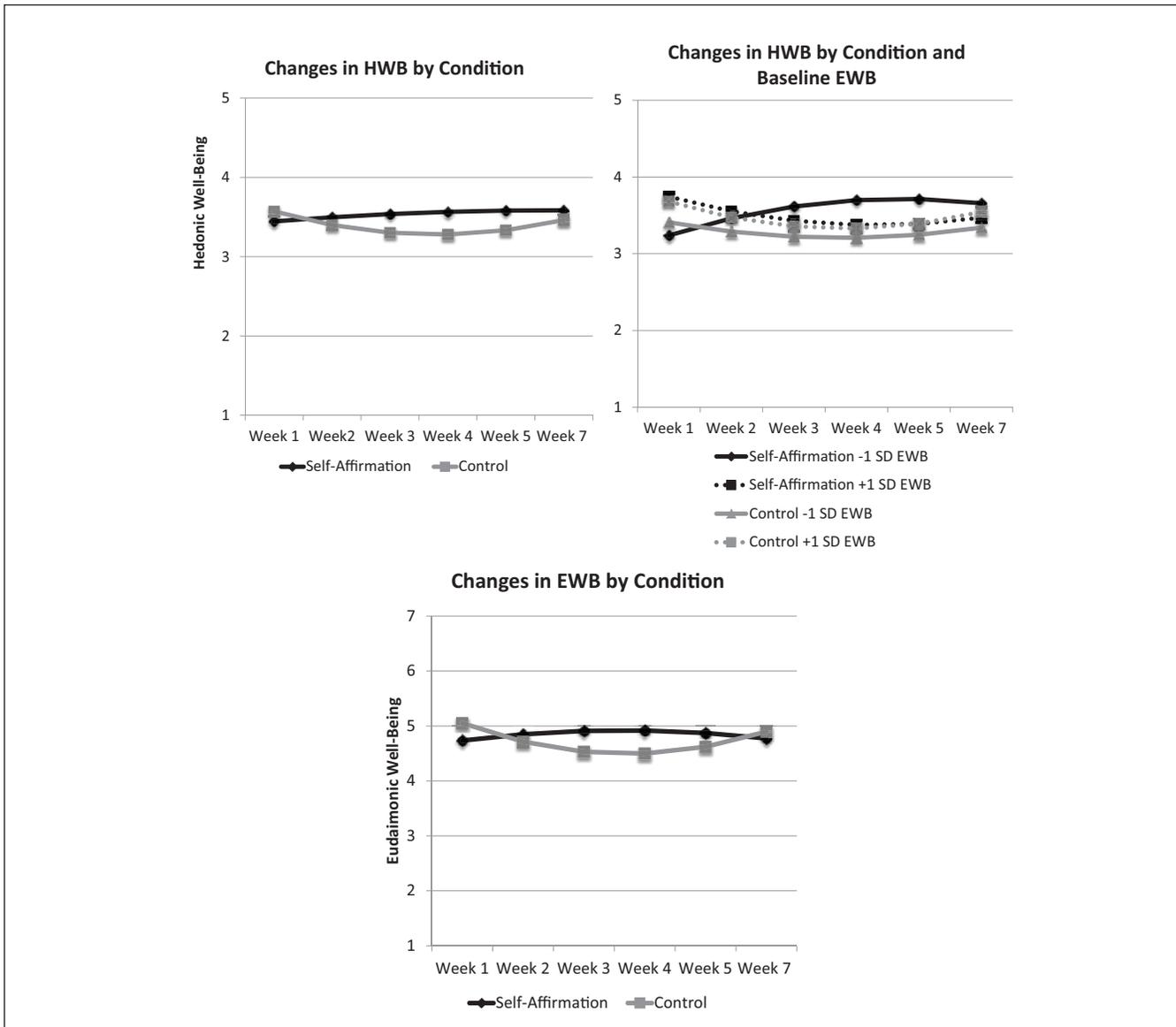


Figure 4. Model-predicted changes in HWB by condition (top left panel), HWB by condition and baseline EWB (top right panel), and EWB by condition (bottom panel) through follow-up for Study 2.
 Note. HWB = hedonic well-being; EWB = eudaimonic well-being.

self-affirmation on linear and non-linear changes in hedonic and eudaimonic well-being through follow-up. Neither variable moderated the impact of self-affirmation on linear or non-linear changes in eudaimonic well-being (all $|\gamma| < 0.20$, $ps > .18$).

Notably, however, baseline eudaimonic well-being moderated linear increases in hedonic well-being (affect balance), $\gamma_{13} = -0.09$, $SE = 0.03$, $t(241) = -2.62$, $p = .009$. Parallel to the moderator findings from Study 1, only participants who were low in baseline eudaimonic well-being at the outset demonstrated improvements in hedonic well-being in response to practicing self-affirmation.

Discussion

Building on Study 1, our second study provided further evidence for the beneficial role of self-affirmation. First, to make plain the similarities between the two studies' findings, we examined changes in well-being over the course of only the first 2 weeks. These analyses revealed that, relative to the control activity, self-affirmation led to increases not only in eudaimonic well-being but also in hedonic well-being. Interestingly, these improvements in well-being remained strong when the activity was performed over 4 weeks, but this pattern was qualified by a non-linear effect, whereby the

effects of the self-affirmation activity plateaued by the fourth week, remaining stable at the follow-up. In a similar pattern to Study 1, the improvements in hedonic well-being at the 4-week period (but not the 2-week period) were only observed for one class of vulnerable individuals—those with already low eudaimonic well-being (i.e., low in meaning, autonomy, competence, connectedness, and flow).

General Discussion

Marrying two lines of research, our two interventions demonstrated that self-affirmation increased well-being over 2 to 4 weeks, for both South Koreans and North Americans. Affirming important values successfully improved eudaimonic well-being among South Korean participants, and it improved both eudaimonic and hedonic well-being among U.S. participants. Moreover, some analyses suggested that affirming core values was only advantageous among participants who were already vulnerable.

Culture

Although we could not directly test cultural differences in the current studies, two noteworthy cultural patterns emerged. The affirmation activity improved both hedonic and eudaimonic well-being among U.S. students, but it only improved eudaimonic well-being among South Korean students. This pattern of results could be due to cultural differences in conceptualizations and experiences of well-being—and hedonic well-being in particular. For example, given that members of Asian cultures are accustomed to experiencing—and perhaps even desiring—emotional complexity (Uchida, Norasakkunkit, & Kitayama, 2004), we suspect that, while engaging in the self-affirmation activity, our Asian participants considered their values through both a positive and negative lens. By contrast, given the positivity biases (Heine et al., 1999), preference for high arousal positive emotions (Tsai, Knutson, & Fung, 2006), and motivations to maximize positive emotions (Bagozzi et al., 1999; Kitayama et al., 2000) prevalent among North American cultures, our U.S. participants likely only focused on the positive aspects of their values and reported higher levels of positive affect. As a result, we observed self-affirmation boosting hedonic well-being among U.S. participants, but not among South Korean participants.

On the other hand, it is not surprising that considering core values would promote eudaimonic well-being—that is, need satisfaction, meaning, and flow—in both cultural groups. First, self-determination theory posits that autonomy, connectedness, and competence are universal human needs (Deci & Ryan, 2000), pointing to their importance across all cultures. Second, research suggests that people have the capacity to find meaning in both positive and

negative experiences (Kashdan, Biswas-Diener, & King, 2008; Park, 2010); thus, South Koreans may be able to experience a stronger sense of meaning after affirming their values, even if that exercise leads them down both dark tunnels and sunny paths.

We also found that baseline levels of eudaimonic well-being moderated increases in eudaimonic well-being for South Korean students (after 2 weeks), but they only moderated increases in hedonic well-being for U.S. students (after for 4 weeks). In both cultures, however, participants in the self-affirmation condition who were low in baseline eudaimonic well-being demonstrated the greatest improvements. This pattern of results may also reflect varying well-being motives among North Americans and South Koreans. Consistent with the cultural values of each nation, vulnerable individuals in the United States may be particularly motivated to maximize their experience of positive emotions (and minimize negative ones), whereas vulnerable individuals in South Korea may be particularly motivated to bolster their sense of meaning and control, competence and connectedness with close others, and absorption in their daily activities.

Activity Duration

The results of the current studies offer several tentative insights into the importance of duration for the effectiveness of self-affirmation exercises. In both studies, participants demonstrated benefits for eudaimonic well-being when they engaged in self-affirmation for 2 weeks, and U.S. students additionally showed benefits for hedonic well-being. In our second study, however, when students continued to affirm their core values for an additional 2 weeks, these increases in hedonic and eudaimonic well-being were qualified by a non-linear effect, whereby well-being tapered off or declined after 4 weeks. Perhaps a self-affirmation exercise loses its potency, becomes dull, or even begins to backfire when performed for 4 versus 2 consecutive weeks. Given the choice, the majority of our participants wrote about a new value each week. As a result, the self-affirmation activity may have been less effective over time as participants wrote about a less personally important value each week than the week before. Notably, however, we cannot disentangle the effects of activity duration from the frequency of measurement, as participants reported on their well-being more frequently in Study 2 than in Study 1. Despite these limitations, however, we can learn something about the immediate well-being benefits of self-affirmation after 2 versus 4 weeks. In short, although activity duration was confounded by culture and frequency of measurement, we learned something about duration by focusing on the pattern of results in the 4-week U.S. study. To wit, we observed that self-affirmation improved two types of well-being after 2 weeks but showed diminished and complex effects after 4 weeks.

Vulnerability as Moderator

Our findings that, in some cases, individuals initially low in eudaimonic well-being demonstrated the only well-being benefits after affirming their core values are consistent with past work on both self-affirmation (e.g., Cohen et al., 2009) and positive activities (Froh, Kashdan, & Ozimkowski, 2009; Layous & Lyubomirsky, 2011), which has shown that vulnerable individuals (e.g., low in academic standing or well-being) may benefit more from such activities. Combined with our findings with respect to culture, the current research suggests that experiencing low eudaimonic well-being—that is, low levels of meaning, need satisfaction, and flow—may prompt individuals to strive to improve their culturally relevant form of well-being after considering their paramount values. For example, after writing about the importance of family and friends, members of both cultures may have realized that their low state is detracting from their relationships, and that they should strive to experience more enthusiasm and joy (North Americans) or work on bolstering their sense of purpose, connection, and engagement (South Koreans). Notably, however, participants who were initially low in eudaimonic well-being did not improve when prompted to engage in another ostensibly positive activity (but which in fact was neutral), challenging a regression-to-the-mean explanation of these results.

Limitations and Future Directions

The results of the current studies should be considered in light of several limitations. In Study 1, participants only practiced self-affirmation for 2 weeks, and measures of well-being were given immediately after completing the self-affirmation activity. Future investigators might examine whether members of collectivist cultures continue to demonstrate well-being benefits when they practice self-affirmation over a longer time span. In addition, our U.S. sample included a large proportion of Asian Americans—albeit many U.S.-born and relatively few of South Korean origin—which may have partially masked any broader cultural differences between the two studies. Notably, however, Asian Americans did not differ from Anglo Americans or other ethnicities in their responses to the self-affirmation activity in Study 2. Future work that includes samples that are more representative of the U.S. population would be illuminating.

Future researchers could also build on our results to further understand the specific mechanisms by which affirming core values benefits eudaimonic and hedonic well-being. Although we theorized that one such mechanism is a strengthened self-image, we could not directly test this idea in the current studies. Finally, although the results of these studies may be limited by small sample sizes and relatively low power, we believe that the reliability of our findings is bolstered by the consistency of the well-being benefits of self-affirmation across our two independent studies in two different cultures.

Concluding Remarks

Whereas previous work has documented multiple benefits of self-affirmation for responding to threat (e.g., Cohen et al., 2006; Cohen et al., 2009), the studies presented here may be the first to show that its benefits extend to two types of well-being. Self-affirmation theory suggests that affirming important values bolsters one's self-image (Steele, 1988), which helps protect people from later threatening information. Our work suggests that the bolstered self-image may also be associated with sustained happiness and meaning. By strengthening their self-image via a values-affirmation activity, people may be less susceptible to threats in their day-to-day lives, thereby insulating themselves against anticipated declines in well-being.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Notes

1. The results were nearly identical when analyzing each component of eudaimonic well-being separately.
2. The full measure is available from the first author.
3. Cohen's d s were calculated with the following formula: $d = \gamma_{11} / SD_{\text{change}}$. This effect size estimate reflects the magnitude of the difference between the self-affirmation condition and the control condition in the average growth rates (Feingold, 2009).
4. Sex, ethnicity (Asian American vs. all others), and age did not significantly predict changes in well-being, and neither ethnicity nor sex significantly moderated changes in well-being, $|\gamma| < 0.92, p > .35$.
5. U.S. and South Korean participants did not differ in their selection of belonging and relationships values (vs. any other value), $\chi^2(1) = 0.35, p = .56$.
6. Time was centered around the intervention midpoint to reduce collinearity between the linear and quadratic components (Singer & Willett, 2003).

References

- Bagozzi, R., Wong, N., & Yi, Y. (1999). The role of culture and gender and the relationship between positive and negative affect. *Cognition & Emotion, 3*, 641-672.
- Boehm, J. K., Lyubomirsky, S., & Sheldon, K. M. (2011). A longitudinal experimental study comparing the effectiveness of happiness-enhancing strategies in Anglo Americans and Asian Americans. *Cognition & Emotion, 25*, 1263-1272.
- Briñol, P., Petty, R. E., Gallardo, I., & DeMarree, K. G. (2007). The effect of self-affirmation in nonthreatening persuasion domains: Timing affects the process. *Personality and Social Psychology Bulletin, 33*, 1533-1546.
- Burson, A., Crocker, J., & Mischkowski, D. (2012). Two types of value-affirmation: Implications for self-control following

- social exclusion. *Social Psychological & Personality Science*, 3, 510-516.
- Cohen, G. L., Aronson, J., & Steele, C. M. (2000). When beliefs yield to evidence: Reducing biased evaluation by affirming the self. *Personality and Social Psychology Bulletin*, 26, 1151-1164.
- Cohen, G. L., Garcia, J., Apfel, N., & Master, A. (2006). Reducing the racial achievement gap: A social-psychological intervention. *Science*, 313, 1307-1310.
- Cohen, G. L., Garcia, J., Purdie-Vaughns, V., Apfel, N., & Brzustoski, P. (2009). Recursive processes in self-affirmation: Intervening to close the minority achievement gap. *Science*, 324, 400-403.
- Cook, J. E., Purdie-Vaughns, V., Garcia, J., & Cohen, G. L. (2012). Chronic threat and contingent belonging: Protective benefits of values affirmation on identity development. *Journal of Personality and Social Psychology*, 102, 479-496.
- Creswell, J. D., Welch, W., Taylor, S. E., Sherman, D. K., Gruenewald, T., & Mann, T. (2005). Affirmation of personal values buffers neuroendocrine and psychological stress responses. *Psychological Science*, 16, 846-851.
- Crocker, J., Niiya, Y., & Mischkowski, D. (2008). Why does writing about important values reduce defensiveness? Self-affirmation and the role of positive, other-directed feelings. *Psychological Science*, 19, 740-747.
- Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. New York, NY: Harper & Row.
- Csikszentmihalyi, M. (1999). If we are so rich, why aren't we happy? *American Psychologist*, 54, 821-827.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227-268.
- Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology*, 49, 182-185.
- Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95, 542-575.
- Diener, E. (2000). Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist*, 55, 34-43.
- Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68, 653-663.
- Diener, E., Oishi, S., & Lucas, R. E. (2009). Subjective well-being: The science of happiness and life satisfaction. In C. R. Snyder & S. J. Lopez (Eds.), *Oxford handbook of positive psychology* (pp. 187-194). Oxford, UK: Oxford University Press.
- Epton, T., & Harris, P. R. (2008). Self-affirmation promotes health behavior change. *Health Psychology*, 27, 746-752.
- Feingold, A. (2009). Effect sizes for growth-modeling analysis for controlled clinical trials in the same metric as for classical analysis. *Psychological Methods*, 14, 43-53.
- Frankl, V. E. (1963). *Man's search for meaning: An introduction to logotherapy*. New York, NY: Washington Square Press.
- Fredrickson, B. L., Tugade, M., Waugh, C. E., & Larkin, G. R. (2003). What good are positive emotions in crises? A prospective study of resilience and emotions following the terrorist attacks on the United States on September 11th, 2001. *Journal of Personality and Social Psychology*, 84, 365-376.
- Froh, J. J., Kashdan, T. B., & Ozimkowski, K. M. (2009). Who benefits the most from a gratitude intervention in children and adolescents? Examining positive affect as a moderator. *Journal of Positive Psychology*, 4, 408-422.
- Gilbert, D. T., Pinel, E. C., Wilson, T. D., Blumberg, S. J., & Wheatley, T. P. (1998). Immune neglect: A source of durability bias in affective forecasting. *Journal of Personality and Social Psychology*, 75, 617-638.
- Harris, P. R., & Napper, L. (2005). Self-affirmation and the biased processing of threatening health-risk information. *Personality and Social Psychology Bulletin*, 31, 1250-1263.
- Heine, S. J., & Lehman, D. R. (1997). Culture, dissonance, and self-affirmation. *Personality and Social Psychology Bulletin*, 23, 389-400.
- Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review*, 106, 766-794.
- Hoshino-Browne, E., Zanna, A. S., Spencer, S. J., Zanna, M. P., Kitayama, S., & Lackenbauer, S. (2005). On the cultural guises of cognitive dissonance: The case of easterners and westerners. *Journal of Personality and Social Psychology*, 89, 294-310.
- Kashdan, T. B., Biswas-Diener, R., & King, L. A. (2008). Reconsidering happiness: The costs of distinguishing between hedonics and eudaimonia. *Journal of Positive Psychology*, 3, 219-233.
- Kitayama, S., Markus, H. R., & Kurokawa, M. (2000). Culture, emotions, and well-being: Good feelings in Japan and the United States. *Cognition & Emotion*, 14, 93-124.
- Layous, K., Lee, H., Choi, I., & Lyubomirsky, S. (2013). Culture matters when designing a successful happiness-increasing activity: A comparison of the United States and South Korea. *Journal of Cross-Cultural Psychology*, 44, 1294-1303.
- Layous, K., & Lyubomirsky, S. (2011). [The role of initial status: Depressed individuals benefit more from a positive activity]. Unpublished raw data.
- Layous, K., Nelson, S. K., & Lyubomirsky, S. (2013). What is the optimal way to deliver a positive activity intervention? The case of writing about one's best possible selves. *Journal of Happiness Studies*, 14, 635-654.
- Logel, C., & Cohen, G. L. (2012). The role of the self in physical health: Testing the effect of a values-affirmation intervention on weight loss. *Psychological Science*, 23, 53-55.
- Lyubomirsky, S. (2001). Why are some people happier than others? The role of cognitive and motivational processes in well-being. *American Psychologist*, 56, 239-249.
- Lyubomirsky, S. (2011). Hedonic adaptation to positive and negative experiences. In S. Folkman (Ed.), *Oxford handbook of stress, health, and coping* (pp. 200-224). New York, NY: Oxford University Press.
- Lyubomirsky, S., Boehm, J. K., Kasri, F., & Zehm, K. (2011). The cognitive and hedonic costs of dwelling on achievement-related negative experiences: Implications for enduring happiness and unhappiness. *Emotion*, 11, 1152-1167.
- Lyubomirsky, S., Dickerhoof, R., Boehm, J. K., & Sheldon, K. M. (2011). Becoming happier takes both a will and a proper way: An experimental longitudinal intervention to boost well-being. *Emotion*, 11, 391-402.
- Lyubomirsky, S., & Layous, K. (2013). How do simple positive activities increase well-being? *Current Directions in Psychological Science*, 22, 57-62.
- Lyubomirsky, S., & Ross, L. (1997). Hedonic consequences of social comparison: A contrast of happy and unhappy people. *Journal of Personality and Social Psychology*, 73, 1141-1157.

- Lyubomirsky, S., & Ross, L. (1999). Changes in attractiveness of elected, rejected, and precluded alternatives: A comparison of happy and unhappy individuals. *Journal of Personality and Social Psychology, 76*, 988-1007.
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9*, 111-131.
- Lyubomirsky, S., Tkach, C., & DiMatteo, M. R. (2006). What are the differences between happiness and self-esteem? *Social Indicators Research, 78*, 363-404.
- Lyubomirsky, S., & Tucker, K. L. (1998). Implications of individual differences in subjective happiness for perceiving, interpreting, and thinking about life events. *Motivation and Emotion, 22*, 155-186.
- McGregor, I., & Little, B. R. (1998). Personal projects, happiness, and meaning: On doing well and being yourself. *Journal of Personality and Social Psychology, 74*, 494-512.
- McQueen, A., & Klein, W. M. P. (2006). Experimental manipulations of self-affirmation: A systematic review. *Self and Identity, 5*, 289-354.
- Park, C. L. (2010). Making sense of the meaning literature: An integrative review of meaning making and its effects on adjustment to stressful life events. *Psychological Bulletin, 136*, 257-301.
- Rogatko, T. P. (2009). The influence of flow on positive affect in college students. *Journal of Happiness Studies, 10*, 133-148.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology, 52*, 141-166.
- Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology, 57*, 1069-1081.
- Schmeichel, B. J., & Vohs, K. (2009). Self-affirmation and self-control: Affirming core values counteracts ego depletion. *Journal of Personality and Social Psychology, 96*, 770-782.
- Sheldon, K. M., Elliot, A. J., Kim, Y., & Kasser, T. (2001). What is satisfying about satisfying events? Testing 10 candidate psychological needs. *Journal of Personality and Social Psychology, 80*, 25-339.
- Sherman, D. K., Bunyan, D. P., Creswell, J. D., & Jaremka, L. M. (2009). Psychological vulnerability and stress: The effects of self-affirmation on sympathetic nervous system responses to naturalistic stressors. *Health Psychology, 28*, 554-562.
- Sherman, D. K., & Cohen, G. L. (2006). The psychology of self-defense: Self-affirmation theory. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 38, pp. 183-242). San Diego, CA: Academic Press.
- Sherman, D. K., & Hartson, K. A. (2011). Reconciling self-protection with self-improvement: Self-affirmation theory. In M. D. Alicke & C. Sedikides (Eds.), *Handbook of self-enhancement and self-protection* (pp. 128-151). New York, NY: Guilford Press.
- Shin, J. Y., & Steger, M. F. (2014). Promoting meaning and purpose in life. In A. Parks & S. Schueller (Eds.), *The Wiley-Blackwell handbook of positive psychology interventions* (pp. 90-110). Chicago, IL: Wiley.
- Sin, N. L., & Lyubomirsky, S. (2009). Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of Clinical Psychology: In Session, 65*, 467-487.
- Singer, J. D., & Willett, J. B. (2003). *Applied longitudinal data analysis: Modeling change and event occurrence*. Oxford, UK: Oxford University Press.
- Steele, C. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 21, pp. 261-302). New York, NY: Academic Press.
- Steger, M. F. (2009). Meaning in life. In S. J. Lopez (Ed.), *Oxford handbook of positive psychology* (2nd ed., pp. 679-687). Oxford, UK: Oxford University Press.
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The Meaning in Life Questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology, 53*, 80-93.
- Suh, E. M., Diener, E., Oishi, S., & Triandis, H. C. (1998). The shifting basis of life satisfaction judgments across cultures: Emotions versus norms. *Journal of Personality and Social Psychology, 74*, 482-493.
- Tsai, J. L., Knutson, B., & Fung, H. H. (2006). Cultural variation in affect valuation. *Journal of Personality and Social Psychology, 90*, 288-307.
- Uchida, Y., Norasakkunkit, V., & Kitayama, S. (2004). Cultural constructions of happiness: Theory and empirical evidence. *Journal of Happiness Studies, 5*, 223-239.