

A Test of Two Positive Psychology Interventions to Increase Employee Well-Being

Seth Kaplan · Jill C. Bradley-Geist · Afra Ahmad ·
Amanda Anderson · Amber K. Hargrove ·
Alex Lindsey

Published online: 9 August 2013
© Springer Science+Business Media New York 2013

Abstract

Purpose Despite an abundance of organizational research on how contextual and individual difference factors impact well-being, little research has examined whether individuals themselves can take an active role in enhancing their own well-being. The current study assessed the effectiveness of two simple, self-guided workplace interventions (“gratitude” and “social connectedness”) in impacting well-being.

Design/Methodology/Approach Sixty-seven university employees participated in one of the two self-guided interventions for 2 weeks and completed self-report measures prior to the intervention, immediately following the intervention, and one-month post-intervention. Growth curve modeling was used to examine the effects of each intervention.

Findings Partially supporting hypotheses, the gratitude intervention resulted in significant increases in positive affective well-being and self-reported gratitude but not did significantly impact negative affective well-being or self-reported social connectedness. The social connectedness exercise did not significantly impact any of those four outcomes. However, both interventions related to a reduction in workplace absence due to illness.

Implications The study suggests that self-guided, positive psychology interventions (particularly gratitude) hold

potential for enhancing employee well-being. Because the interventions are short, simple, and self-guided, there is little in the way of costs or drawbacks for organizations. Thus, these types of interventions seem like a potentially useful component of workplace wellness initiatives.

Originality/Value This study is one of the few to examine whether self-guided, positive psychology interventions can enhance well-being. Moreover, this is the first study to examine a social connectedness workplace intervention and the first to demonstrate effects on illness-related absence.

Keywords Positive psychology · Intervention · Workplace well-being · Gratitude · Social connectedness · Affect

Employee psychological well-being has substantial consequences for individual and organizational health and functioning (e.g., Harter et al. 2003). Although workplace well-being long has been a concern for organizational scholars (e.g., (Roethlisberger and Dickson 1939), recent findings suggest that attention to employee psychological functioning may now be especially pressing. Owing to factors such as decreased job security, the economic downturn, and the inability to “turn off” work, over three-quarters of Americans list work as a significant source of stress (American Psychological Association 2007) and mean-level job satisfaction has declined significantly in recent years (e.g., Ray and Rizzacasa 2012).

Within the tremendous body of research cataloging the antecedents of various indices of workplace well-being (see Warr 2007), the focus primarily has been on identifying the contextual (e.g., organizational and environmental ones) and personal (e.g., personality traits and

S. Kaplan (✉) · A. Ahmad · A. Anderson ·
A. K. Hargrove · A. Lindsey
Department of Psychology, George Mason University,
4400 University Drive, Fairfax, VA 22030-4444, USA
e-mail: skaplan1@gmu.edu

J. C. Bradley-Geist
Craig School of Business, California State University, Fresno,
CA, USA

demographics) factors that contribute to or detract from well-being. This research implicitly has adopted a “top-down” perspective, wherein these contextual (e.g., Hackman and Oldham 1976) and personal (Thoresen et al. 2003) characteristics impact employee reactions and outcomes. Almost completely lost in all this is the recognition that individuals act on their own to impact their well-being in spite of, not due to, the influence of these other factors (but see Berg et al. 2010; Wrzesniewski and Dutton 2001 for rare and notable exceptions).

Recent research from the area of positive psychology, however, demonstrates that programs encouraging specific behaviors and activities can have dramatic and enduring effects on psychological well-being. In fact, empirical work suggests that these behaviors and activities may be at least as consequential as “objective” contextual factors in determining one’s level of happiness (see Lyubomirsky et al. 2005).

Given the above observations, we designed a study to translate this burgeoning work in positive psychology into the organizational domain. Specifically, we developed two well-being interventions, a “gratitude” exercise and a “social connectedness” exercise, and had participants complete one of the two exercises for 2 weeks to examine potential changes in job-related affective well-being and absence (due to physical illness). Below, we briefly review research emphasizing the role of volitional behaviors in well-being. Following that, we describe the two interventions used in the current study and propose hypotheses linking completion of these interventions to enhanced well-being.

How our Actions Influence Well-Being

Underlying this project is the notion that volitional actions can influence well-being, that is, people can intentionally facilitate cognitions and behaviors to increase their own happiness and well-being. We base our argument in large part on Lyubomirsky et al. (2005) model of happiness. This model suggests that happiness is a function of three major factors: life circumstances, temperament/disposition, and positive cognitive or behavioral activities. Citing prior research on happiness, Lyubomirsky et al. argue that life circumstances (e.g., marital status, income, health, and religiosity) jointly account for only 8–15 % of the total variance in happiness levels. They attribute another 50 % of the variance to a dispositional set point that tends to be stable over time and circumstances. The remaining 40 % or so of the variance in happiness levels is surmised to be due to cognitive and behavioral activities in which a person engages. Examples of these activities and practices include choosing goals that are enjoyable and self-determined

(Sheldon and Elliot 1999), avoiding social comparisons (Lyubomirsky and Ross 1997), and savoring the moment (Hurley and Kwon 2012).

An implication of the notion that engaging in these simple activities can enhance well-being is that interventions can be developed to teach and facilitate the execution of these activities. Adopting this logic, several studies have introduced interventions that incorporate simple activities meant to promote the cognitions and behaviors that can enhance resultant well-being (for reviews of this research, see Lyubomirsky 2008; Sin and Lyubomirsky 2009). Examples of these interventions include having participants write about that for which they are grateful (Wood et al. 2010), write about one’s “best” or “ideal” possible self (e.g., Sheldon and Lyubomirsky 2006), learn about and use one’s strengths (Seligman et al. 2005), learn to set appropriate goals (Sheldon et al. 2002), and learn to “savor” positive experiences (Seligman et al. 2006).

The psychological mechanisms underlying the effectiveness of happiness interventions likely vary depending on the particular intervention (Lyubomirsky and Layous 2013). For example, an intervention designed to help individuals identify and use their strengths might increase well-being through building self-efficacy while an intervention focusing on setting appropriate goals could boost well-being through the reinforcing effects of meeting goals. As discussed subsequently, in the current study, we draw from theories on cognitive dissonance, adaptation (hedonic treadmill), theories on needs (e.g., status, belonging), and social support to argue for the effectiveness of two interventions in increasing well-being.

Although research on positive psychology interventions is still fairly nascent, some conclusions to date are encouraging. For example, gratitude interventions have produced improvements in well-being similar in effect size to those associated with techniques used in clinical therapy (e.g., Emmons and McCullough 2003). Also, a meta-analysis of 51 studies revealed that these interventions do indeed increase well-being (meta-analytic $r = .29$) and decrease depressive symptoms ($r = .31$). In addition, unlike the transitory benefits of most discrete events (Lyubomirsky et al. 2005), the benefits of these interventions can endure for several months and perhaps even longer (Seligman et al. 2005). Moreover, the impact of these interventions does not appear to be a mere placebo effect (see Sheldon and Lyubomirsky 2007).

Organizational scholars also have begun introducing and investigating these types of programs, albeit to a relatively limited degree to date. In a recent review of positive psychology interventions in organizations, Meyers and colleagues were able to locate 15 studies carried out with workplace populations (Meyers et al. 2013). These interventions included loving kindness meditation, appreciative

inquiry, coaching interventions, interventions meant to foster resilience, and interventions meant to foster psychological capital, among others. Even among these 15 studies, though, some were not the types of self-guided interventions we are investigating here (e.g., instead examining the effects of “coaching” interventions or the effects of one-time computer-based training, for examples). Given their effectiveness outside of the workplace, these interventions also appear to hold promise in enhancing well-being at work. In fact, Meyers et al. reported that 87 % (13/15) of the studies they reviewed reported effects on at least one workplace well-being variable.

In addition to adding to this growing body of research on positive psychology interventions in the organizational arena, we attempt to make three additional contributions with this research. First, we created what seems to be a novel intervention with the social connectedness intervention (see description below). Although social relations are a robust predictor of well-being (e.g., Baumeister and Leary 1995), self-guided programs to facilitate such relations appear to be lacking, both inside and outside of the workplace. Also, unlike many studies in this area, we measured multiple well-being outcomes including more proximal ones that may, in turn, impact other outcomes. Somewhat surprisingly, studies in this domain include measures of well-being (e.g., happiness) but do not include measures of intervening variables through which the intervention might have its effects on those distal outcomes (e.g., a gratitude intervention increasing gratitude and gratitude, in turn, increasing happiness). Including both proximal and distal measures can provide knowledge about the mechanisms through which the interventions are functioning. Finally, unlike the majority of the studies noted above, we examine the effects of the interventions over time, beyond intervention completion. Investigating the degree to which the interventions’ benefits persist is paramount, as most changes in well-being are fleeting (Watkins 2004), thereby calling into question the value of immediate change absent longer-term effects.

The Current Interventions

Whereas the Lyubormirsky model focuses on happiness and well-being in somewhat general terms, we believe that brief interventions like the current ones are more likely to impact some aspects of well-being compared to others. Specifically, we chose to focus on job-related positive and negative affective well-being (PAWB and NAWB) as the main outcomes. Research from outside the organizational domain suggests that effect sizes associated with these types of interventions are larger for the components of subjective well-being (including affect) than for other

psychological outcomes such as eudaimonic well-being or depression (Bolier et al. 2013). Also, affective states appear to be more transient and therefore more malleable, than are constructs such as job attitudes (see Weiss 2002).

We do not attempt to confirm or refute the precise estimates of variance that the Lyubormirsky model attributes to each of the three sources of happiness (or affect, in this case); instead, we point to the model as an indicator that intentional behaviors have the potential to have a substantial and meaningful impact on well-being. Below, we describe the two interventions we designed and develop hypotheses linking the completion of the interventions to decreased negative affect and enhanced positive affect. Each intervention was designed with consideration for both ease of performing within a work setting and potential efficacy based on prior research and theory.

Gratitude

We follow Wood et al. (2010, p. 891) in defining gratitude as an “orientation towards noticing and appreciating the positive ‘in one’s work life’ (versus ‘in the world’).” In recent years, researchers have amassed a considerable body of findings linking gratitude to greater psychological well-being (for reviews, see Emmons and McCullough 2004; Wood et al. 2010). After reviewing the literature on gratitude and well-being, Wood et al. conclude that gratitude is robustly related to well-being, regardless of how well-being is conceptualized (e.g., in terms of psychopathology and in more humanistic terms). Among the most impressive findings in this literature is that gratitude could explain 20 % of the variance in satisfaction with life after controlling for facets and domains associated with the Big Five personality traits (Wood et al. 2008).

Although Wood and colleagues’ discussion tends to focus on the dispositional orientation to experience gratitude, we argue that gratitude can be enhanced through intentional practice (see Adler and Fagley 2005). Consistent with the notion that gratitude can be practiced and increased, gratitude interventions have been associated with lasting reductions in worry (Geraghty et al. 2010) and increased happiness and life satisfaction (Emmons and McCullough 2003; Seligman et al. 2005).

There are several theoretical explanations behind the benefits of gratitude. First, expressing gratitude might be incompatible with simultaneous experiences of negative thoughts and emotions (e.g., worry; Geraghty et al. 2010). Consistent with cognitive dissonance theory (Festinger 1957), expressions of gratitude might create dissonance with negative thoughts and feelings; as such, individuals might reduce dissonance by internalizing positive feelings and cognitions to be consistent with their expressions of gratitude. Second, expressing gratitude allows people to re-

experience the joys and positives in life (Sheldon and Lyubomirsky 2006). Relatedly, adaptation theory (e.g., Brickman and Campbell 1971) suggests that people tend to adapt to positive changes in the environment and return rather quickly to a state of hedonic neutrality. Following from this logic, others (e.g., Watkins 2004) have suggested that increased gratitude can prevent succumbing to this “hedonic treadmill” in which the positives in life (e.g., healthy family and having a stable job) are taken for granted. Taken a step further, Sheldon and Lyubomirsky (2006) suggest that practicing gratitude can encourage people to cope with negative situations by reinterpreting them in a more positive light. For example, a woman might reinterpret a job layoff as an opportunity to pursue her dream of going back to school or starting a business. Based on prior research and theory showing the benefits of gratitude interventions in clinical and general life contexts, we predicted similar benefits in a work setting.

Hypothesis 1 Participant PAWB will be significantly higher after performing a gratitude intervention than before the intervention.

Hypothesis 2 Participant NAWB will be significantly lower after performing a gratitude intervention than before the intervention.

In addition to measuring PAWB and NAWB, we also included dependent variables specific to the interventions themselves (i.e., gratitude and social connectedness). We included these measures for several reasons. First, they provide a way to assess discriminant validity between the different intervention conditions. Also, we were interested in whether increases in these variables lead to changes in other well-being variables. Finally, including these measures allows for inspection of whether participants were merely falling prey to demand characteristics. Specifically, we anticipated that participants completing the gratitude intervention would report higher gratitude post-intervention than would participants completing the social connectedness intervention. Likewise, we anticipated higher reports of social connectedness in the participants who completed that intervention rather than the gratitude intervention. Although we would expect general positive impacts of the intervention, we also expected to see more dramatic effects that were specific to the nature of the intervention performed.

Hypothesis 3a Self-reported gratitude will be significantly higher after performing the gratitude intervention than before the intervention.

Hypothesis 3b Post-intervention self-reported gratitude will be significantly higher for participants completing the gratitude intervention than participants completing the social connectedness intervention.

Social Connectedness

The second intervention we implemented was one meant to foster social connectedness at work. Workplace social connectedness involves feelings of relatedness and companionship with one’s work colleagues (Lee and Robbins 1995). Whereas there is research from outside the organizational domain to support the effectiveness of gratitude interventions (see above), we are not aware of interventions focused specifically on increasing social interaction and connectedness. We chose to develop a social connectedness intervention for several reasons. First, the evidence linking social interaction and supportive social relationships to psychological health is overwhelming. Consistently, research demonstrates that feelings of social affiliation, integration, and the like are among the strongest predictors of happiness and well-being (Myers 2000). In the workplace as well, social interaction and coworker relations are some of the most important influences on employee job attitudes and psychological health (Chiaburu and Harrison 2008; Halbesleben 2006). Thus, increasing the strength of social ties seems an especially effective means to increase worker well-being.

Also driving our decision to institute, this particular type of intervention was the recognition that the benefits of social interaction and relationships may increasingly be in jeopardy. Owing to the increase in practices like telework and distributed teamwork and to a greater reliance on computer-mediated communication in general, employees may communicate with each other less overall. They also may be engaging in less of the kind of impromptu (versus scheduled) social interactions that may be especially important for well-being (Allen et al. 2003; Sarbaugh-Thompson and Feldman 1998). Our goal then was to develop an intervention to increase overall, and especially face-to-face, social interaction. Ultimately, these types of interactions then should tend to foster more and more meaningful social ties and relationships and ultimately greater well-being (Myers 2000).

With regard to the main outcome of interest here, studies indicate that social contact can have an immediate impact on affect, and especially positive affect. As argued by Taylor and Brown (1988), norms for social interaction typically (though not always) tend to be biased in a positive direction such that they encourage positive feedback and self-evaluation. As such, social interaction tends to enhance well-being. Similarly, social contact can fulfill the strong basic human need for acceptance and belonging (Baumeister and Leary 1995), also a boon to well-being. In a seminal paper in this area, Watson and colleagues showed in three studies that social activity was positively related to positive affect at both the between- and within-

person levels of analysis (Watson et al. 1992). Similarly, Reis and colleagues showed that daily feelings of relatedness predicted daily positive affect (Reis et al. 2000). Within the work domain as well, findings document the importance of positive social interaction on affect (e.g., Basch and Fisher 2000). In a recent study, for example, Dimotakis et al. (2011) found that daily positive social interaction predicted greater positive affect and, in turn, higher state job satisfaction.

Hypothesis 4 Participant PAWB will be significantly higher after performing a social connectedness intervention than before the intervention.

The effects of social interaction on state negative affect are less certain. While negative and conflict-ridden interactions clearly can increase negative affect (e.g., Bolger et al. 1989), the influence of social interaction, more generally, in decreasing negative affect (NAWB) is not as clear. Theoretically, interacting with others serves purposes such as reducing loneliness and self-focused attention and in obtaining social support (Baumeister and Leary 1995). While some results indeed support the notion that social support and social interaction decreases felt negative affect (Westermann et al. 1996), other studies indicate no relationship. For example, in a highly cited series of studies on social interaction and affect, Watson et al. (1992) failed to find significant correlations between social activity and negative affect. More recently, in a workplace study, Dimotakis et al. (2011) also found nonsignificant relationships between “positive interactions” and negative affect. These results are in line with Watson’s (2000) assertion that social activity has stronger effects on positive, relative to negative moods. Likely, the nature of the interaction impacts felt negative affect. Stressful or conflict-ridden ones obviously would not be expected to reduce negative affect.

We also investigated the influence of completing this intervention on self-reported social connectedness. Because actual social interaction increases feelings of connectedness (Baumeister and Leary 1995), we anticipated that social connectedness would increase and that participants in this condition would report higher connectedness post-intervention than would participants completing the gratitude intervention.

Hypothesis 5a Self-reported social connectedness will be significantly higher after performing the social connectedness intervention than before the intervention.

Hypothesis 5b Self-reported post-intervention social connectedness will be significantly higher for participants completing the social connectedness intervention than participants completing the gratitude intervention.

Method

Participants

Staff members from two large public universities were invited to participate in a study on workplace well-being. Members of the research team contacted and met with various departments in both universities to recruit potential participants. A total of 112 employees agreed to participate. Employees who completed the study received a \$10 gift certificate for participating. Of the 112 employees who completed the initial set of measures, 67 completed the intervention program and also responded to both sets of follow-up measures.

The final sample was predominately female (86.6 %), had been at their organization for about nine years on average ($M = 9.39$, $SD = 9.03$), worked about forty hours per week ($M = 42.07$, $SD = 7.94$), and had a mean age of about 43 ($M = 42.93$, $SD = 12.25$). The majority of the sample (92.3 %) had general administrative type jobs (administrative assistant, program coordinator, financial aid counselor, office manager) while 5.1 % had jobs in the health care field (e.g., nurse, physician, and dietician) and 2.6 % did not report their job title or description. Comparison on the initial set of measures revealed no significant differences between the two groups (the initial sample of 112 versus the 67 employees who completed the intervention program and follow-up measures) on any demographics or study variables. Participants were randomly assigned to one of the two conditions with 33 in the gratitude condition and 34 in the social connectedness condition.

Procedure

The researchers made contact with the supervisors of various nonacademic departments (e.g., dining services, admissions, and Information Technology) at the two universities. Researchers asked departmental supervisors to send out a recruitment e-mail along with a link to the initial measures. Upon visiting the link, participants viewed and agreed to the informed consent. Included as part of the consent, the participants were told that the purpose of the study was to explore avenues to increase well-being at work. Following the consent, participants were asked to provide demographic information and to complete the other measures. Participants then created a personal identifier code (e.g., “your mother’s maiden name” or “the name of the street on which you grew up”) and were asked to record this identifier (e.g., “in your planner or on your cell phone”). They were also provided with an e-mail address to contact the researchers if they subsequently forgot it or could not locate their code. These identifier codes allowed the three surveys to be linked.

After completing the initial battery of measures, participants randomly were assigned to one of two intervention conditions (gratitude or social connectedness). Participants received detailed instructions on completing the intervention (for their condition) via a slide presentation that was e-mailed to them (see [Appendix 1](#) for the information presented in the slide presentations). These presentations contained instructions indicating that participants were to complete their assigned well-being intervention on 3 days per week for a two-week period. During the two-week period, participants then received both weekly and daily participation reminders. The daily reminder e-mails contained the link to a secure Web site where participants either recorded that for which they were grateful at work (in the gratitude condition) or where they described their attempts at fostering social connectedness that day (in the social connectedness condition). The conditions are described in more detail below.

After the two-week intervention and then again four weeks after that (i.e., 6 weeks after beginning the study), participants responded to the same set of measures given in the initial battery.

Gratitude Condition

In the gratitude condition, participants were asked to log in at least three times per week to record things that they are grateful for related to their job (Emmons and McCullough 2003). Each time, they followed the link (embedded in their daily reminder e-mails) to the secure Web site and they typed responses to the following prompt:

Try to think about the many things in your job/work, both large and small, for which you are grateful. These might include supportive work relationships, sacrifices or contributions that others have made for you, advantages or opportunities at work, or thankfulness for the opportunity to have your job in general. Try to think of new ideas that you have not focused on in the past.

Increasing Social Connectedness Condition

In the increasing social connectedness condition, participants were asked to engage in specific strategies to increase their social ties at work social three times per week and to document those experiences on a secure Web site. To clarify, whereas, in the gratitude condition, participants completed the intervention online, participants in the social connectedness condition were reminded to engage in additional social activities in the reminder e-mails and only recorded those activities online. In the initial slide presentation and in the reminder e-mails, participants were

provided with a list of suggestions for increasing social ties such as physically going to talk with a colleague instead of e-mailing him or her and doing something during work with a coworker, such as getting coffee or going for a walk (see [Appendix 1](#) for full list of suggestions).

Materials

Participants completed the study measures at three time points: directly before and after the intervention period and again 1 month after completion of the intervention. Given the time frame of the study, participants were asked to report their well-being (e.g., gratitude and PAWB) “over the past 30 days,” “over the past 2 weeks,” and “over the past 30 days,” at the first, second, and third survey administrations, respectively. The full measures are presented in “[Appendix 2](#).”

Gratitude

We used the three-item gratitude adjective checklist (GAC) developed by McCullough et al. (2002). This is a frequently used measure of gratitude with strong psychometric properties and validity-related evidence (e.g., Froh et al. 2009). Participants reported the degree to which they experienced each gratitude-related adjective at work, ranging from 1 (*very slightly or not at all*) to 5 (*extremely*). Exploratory factor analyses supported a strong unidimensional solution for the measure, and the coefficient α reliabilities ranged from .94 to .96 over the three time points.

Social Connectedness

We chose four items from the social connectedness subscale from Lee and Robbins' (1995) measure of belongingness. We selected items that appeared less dispositional in nature and, therefore, on which one's standing potentially could change as a function of intervention completion. The response scale for this measure ranged from 1 (*strongly disagree*) to 5 (*strongly agree*). Exploratory factor analyses supported a strong one-factor solution. The coefficient α reliability ranged from .85 to .93 across the three time points.

Affective Well-Being

PAWB and NAWB were measured with the Job-Related Affective Well-being Scale (JAWS). The JAWS (Van Katwyk et al. 2000) is a 30-item scale (15 PAWB items and 15 NAWB items) designed to measure emotional reactions to one's job. Items were asked on a five-point Likert-type scale (1 = *strongly disagree* to 5 = *strongly*

agree). Exploratory factor analyses confirmed that the items loaded onto one of two intended factors (i.e., subscales). Across the three time points, positive affect α 's = .94–.95 and negative affect α 's = .93–.94.

Absence Due to Illness

In addition to the primary variables described above, we also evaluated whether completing these interventions impacted employee absence due to illness. Some research indicates that completing positive psychology interventions similar to the current ones (e.g., writing activities; see Harris 2006) can actually improve physical health as well as psychological health. Obviously, results showing that intervention completion can aid physical health (and, in turn, reduce absence) would have substantial implications both for employees and organizations. Because we are uncertain whether completing these interventions for 2 weeks actually could impact physical health, we chose not to offer a formal proposal for this outcome, instead examining this in an exploratory manner. At each time point, participants responded to the following question, “Over the last month (or 2 weeks for the post-intervention assessment), about how many different times (i.e., instances) were you absent from work because you were sick/not feeling well?”

Results

Descriptive statistics and intercorrelations for the study variables at the three time points appear in Table 1. Also, the descriptive statistics for the outcomes for the two conditions at each time point appear in Table 2. For the primary analyses, we conducted growth curve modeling using the HLM software program (Raudenbush et al. 2004). We began by examining the effects of each condition separately. For each condition, “time” was the level-1 predictor, represented by weeks into the study (0, 2, and 6).¹ Because participants came from two different universities, a dummy code for university was included in the level-2 intercept and slope equations. The results from these analyses are presented in Table 3.

Tests of Hypotheses

Turning first to the gratitude condition, we predicted in the first hypothesis that PAWB would increase after completing the gratitude intervention. As seen in Table 3, PAWB

did indeed increase for this group, thereby supporting Hypothesis 1. The means in Table 2 reveal that PAWB increased at each time point. Hypothesis 2 predicted that NAWB would decrease as a function of performing the gratitude exercise. Although mean NAWB scores did decrease, the drop was not significant. Thus, Hypothesis 2 was not supported. Consistent with Hypothesis 3a, self-reported gratitude significantly increased following the intervention (see Tables 2, 3). Although not explicitly hypothesized, we also evaluated whether completing the gratitude exercise was associated with an increase in self-reported social connectedness. Tables 2 and 3 reveal no significant effect. In sum, the gratitude intervention was associated with significant increases in PAWB and self-reported gratitude but not significant changes in NAWB or self-reported social connectedness.

We then evaluated the same basic model for the social connectedness condition. Hypothesis 4 predicted that positive affect would increase after participating in the social connectedness intervention. However, as seen in Tables 2 and 3, PAWB did not significantly increase over time. Thus, Hypothesis 4 was not supported. Hypothesis 5 predicted that self-reported social connectedness would increase following the social connectedness intervention. However, Hypothesis 5 was not supported because results indicated no significant change in self-reported social connectedness. Finally, although not hypothesized, we also evaluated whether this condition increased self-reported gratitude. Tables 2 and 3 reveal there was no significant effect of the social connectedness intervention on gratitude. In sum, the social connectedness exercise did not significantly improve PAWB or self-reported social connectedness or gratitude.

Hypotheses 3b and 5b were comparative predictions. According to Hypothesis 3b, self-reported gratitude would be increased more by the gratitude intervention than by the social connectedness intervention. According to Hypothesis 5b, self-reported social connectedness would be increased more by the social connectedness intervention than by the gratitude intervention. To examine these hypotheses, we combined data from the two conditions. We evaluated the same model as described above but also included condition as a level-2 predictor of the slopes and intercepts. The analysis for gratitude revealed that, across conditions, self-reported gratitude did increase over time ($\gamma = .11, p < .01$). The cross-level interaction for condition was also significant ($\gamma = -.11, p < .01$). Inspection of the means in Table 2 and of the graph of this equation showed that self-reported gratitude only increased for those in the gratitude condition; the line for the social connectedness condition was essentially flat. These results support Hypothesis 3b. The same analyses with self-reported social connectedness as the outcome revealed that this variable did not significantly increase over time across conditions ($\gamma = .00$,

¹ We also conducted all of the analyses coding time as 0, 1, 2 (instead of number of weeks into study). The conclusions from the two sets of analyses were identical. We also examined potential nonlinear effects, but they were not statistically significant.

Table 1 Descriptive statistics and correlations for the focal variables at the three time points

	Means	SDs	Gratitude	Soc connect	PAWB	NAWB
Time 1						
Gratitude	3.47	.97				
Soc connect	4.17	.84	.28*			
PAWB	3.43	.70	.54*	.31**		
NAWB	2.67	.83	-.32*	-.37**	-.58*	
Absence due to illness	.82	1.07	-.32*	-.15	-.29*	.17
Time 2						
Gratitude	3.86	.87				
Soc connect	4.13	.77	.22			
PAWB	3.46	.75	.69*	.41**		
NAWB	2.49	.83	-.30*	-.18	-.53*	
Absence due to illness	.23	.51	-.12	.00	-.11	.10
Time 3						
Gratitude	3.86	.96				
Soc connect	4.32	.72	.25			
PAWB	3.65	.63	.66*	.21		
NAWB	2.30	.70	-.46*	-.37*	-.55*	
Absence due to illness	.29	.59	-.09	.14	.00	.14

$N = 33$ for the gratitude condition and $N = 34$ for the social connectedness condition

Soc connect social connectedness

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

Table 2 Descriptive statistics for focal variables across study conditions

Outcome	Time 1		Time 2				Time 3					
	Grat cond		SC cond		Grat cond		SC cond		Grat cond		SC cond	
	<i>M</i>	SD	<i>M</i>	SD	<i>M</i>	SD	<i>M</i>	SD	<i>M</i>	SD	<i>M</i>	SD
Gratitude	3.37	.95	3.57	1.00	3.79	.94	3.94	.80	4.08	1.00	3.65	.97
Social connectedness	4.16	.76	4.17	.91	4.13	.61	4.13	.93	4.31	.60	4.33	.83
PAWB	3.36	.71	3.51	.68	3.47	.78	3.45	.73	3.69	.69	3.61	.59
NAWB	2.70	.87	2.64	.80	2.43	.76	2.55	.89	2.34	.71	2.27	.70
Absence due to illness	.88	.95	.77	1.17	.24	.53	.21	.49	.29	.56	.29	.62

$N = 33$ for the gratitude condition and $N = 34$ for the social connectedness condition

Grat cond gratitude condition, *SC* social connectedness condition, *M* mean

$p > .10$) and did not change more dramatically for one condition versus the other (γ for cross-level interaction = $-.04$, $p > .10$). Thus, Hypothesis 5b was not supported.

Analyses also were conducted to compare the two interventions in terms of their effects on PAWB and NAWB. Across the two conditions, positive affect increased ($\gamma = .05$, $p < .05$). However, the cross-level interaction for condition was significant ($\gamma = -.05$, $p < .05$). Inspection of the means in Table 2 and of the graph from this equation showed that PAWB only increased for those in the gratitude group. Notably, when the two samples were considered together, the decrease in negative affect also approached statistical significance

($\gamma = -.05$, $p = .055$). The cross-level interaction for condition was not significant ($\gamma = .02$, $p > .10$), suggesting that the change was roughly equal across conditions. The graph of this equation confirmed this conclusion.

Additional Analyses

In addition to testing the study hypotheses, we also conducted three sets of additional analyses. First, given that participants in the gratitude condition experienced increases in gratitude and in job-related positive affect, we examined whether these changes were related to one another. To do so, we regressed the (Time 3—baseline)

Table 3 HLM results describing the effects of the two interventions on well-being outcomes

Outcome	Gratitude condition		Social connectedness condition	
	Estimate	<i>t</i>	Estimate	<i>T</i>
PAWB				
Pre-intervention intercept	3.58	17.80**	3.51	23.36**
Time	.05	2.62*	−.02	−1.00
NAWB				
Pre-intervention intercept	2.42	11.01**	2.69	15.32**
Time	−.02	−.84	−.04	−2.02^
Gratitude				
Pre-intervention intercept	3.74	15.79**	3.71	18.58**
Time	.09	2.73*	.01	.26
Social connectedness				
Pre-intervention intercept	4.02	21.17**	4.09	21.29**
Time	.00	.58	.01	.20
Absence due to physical illness^a				
Pre-intervention intercept	−.35	−.84	.27	.88
Time	−1.04 (.35)	−2.18*	−.62 (.54)	−3.26**

N = 33 for the gratitude condition and *N* = 34 for the social connectedness condition. Sample (i.e., at which of the two universities participants worked) was also included as a level-2 control variable. Those results are not presented here for the sake of clarity of the Table

Time coefficients represent changes in log absenteeism. Coefficients in parentheses represent exponentiated decrease in number of days absent per week

^ *p* < .10, * *p* < .05, ** *p* < .01

^a Results are based on Poisson model

residualized change scores in PAWB on the (Time 2—baseline) residualized change scores for gratitude (see MacKinnon, 2008, p. 199). Contrary to our expectation, the coefficient was not statistically significant, $\beta = .20$, $p = .271$. This result suggests that increases in well-being were not due to changes in felt gratitude.

As described in the Method section above, we were also interested in any effects of the interventions on physical health. To explore this question, we included an item asking about the frequency of illness-related work absence. Using this measure, we assessed the same model as described above but used multilevel Poisson regression here (given that these were count data with a preponderance of zero absences). As seen in Table 3, the two conditions, when considered separately, were associated with a decrease in illness-related absences. Analyses considering the two conditions together produced the same conclusion.

Finally, we also investigated whether frequency of intervention completion impacted the effectiveness of the interventions. To do so, we first computed adherence scores by counting the number of times participants logged into complete (or document completing) the intervention. In general, adherence was fairly good, as participants reported completing the intervention 2.18 times per week, on average (i.e., 4.36/6 total requested times for the two-week

period, $M = 2.5$, $SD = 1.34$). Notably, total adherence was somewhat, but not significantly, higher for the gratitude condition ($M = 4.64$, $SD = 2.38$) as compared to the social connectedness condition ($M = 4.08$, $SD = 2.74$; $F(1, 71) = .86$, $p = .36$). We then ran a series of models including frequency of intervention completion as a cross-level moderator. For none of the outcomes was the interaction term significant (all p 's > .10). Thus, completing the interventions more often did not seem to amplify their benefits.

Discussion

This study examined the effectiveness of two interventions in enhancing workplace well-being. We found that a gratitude intervention was successful in influencing three outcomes (self-reported gratitude, PAWB, and reduced absence due to illness) while the social connectedness condition decreased absence due to illness.

We believe this study makes three primary contributions. First, it contributes to a small but growing body of work extending positive psychology research into an organizational context. As noted above, prior examinations of workplace positive psychology interventions are relatively



few in number. Also, many of the existing studies focus more on what organizations and leaders can do to enhance employee well-being versus on what employees themselves can do. Second, the longitudinal nature of the study provides insight into the temporal effects of the interventions and reveals that their impact extended *beyond* the intervention. Finally, the results suggest that relatively fast and simple self-guided interventions can enhance well-being. Clearly, though, not all hypotheses were supported, suggesting more nuanced relationships between specific interventions and aspects of well-being.

Implications

Regarding theoretical implications, this study clearly points to the importance of further research into the mediating mechanisms underlying intervention effectiveness. Prior studies have carried out little in the way of showing *why* the interventions work, and the current study suggests that the variables considered here (i.e., self-reported gratitude and self-reported social connectedness) were *not* responsible for the enhanced well-being observed. Arguably, then, the results might be inconsistent with an adaptation theory explanation in which gratitude interventions enhance well-being by preventing people from adapting to, or taking for granted, the positives in life. It is possible that increases in PAWB are due to cumulative experiences of short-term boosts in positive mood that are experienced during and shortly after the intervention. However, because we did not measure state affect when the intervention activities were completed, we can only point to this as a direction for future research. Likewise, decreases in absences in the social connectedness intervention were not due to increased reports of social connectedness. Thus, we can only speculate that the effects on the absences due to illnesses are due to other theoretical mechanisms such as reductions in stress that come from participating in the social connectedness intervention.

This study has a number of practical implications. Importantly, the interventions were simple and quick to complete. Also, there was no cost to the participants' organizations, other than the few minutes of employee time necessary to complete the interventions. These practical advantages are important as most organizational interventions require systemic or structural changes, such as training leaders or altering policies (e.g., Campion and McClelland 1993). Although management can encourage employee participation in this type of intervention, the actual mechanism of change is in the control of the employee.

In qualitative feedback at the end of the study, participants indicated enthusiasm about the interventions and described them as uplifting and easy to complete. A sample comment from participants in the gratitude condition was,

"I've continued to have a greater awareness of the 'bright' side of my job. On the days I feel overwhelmed, I think back to what I enjoy most about my job and that tends to lift my mood." Notably, several participants reported already completing something like the gratitude intervention prior to the study. A sample comment from the social connectedness intervention was, "Anything that I can do to keep the atmosphere at work and with my colleagues enjoyable is worth the extra effort! I continue to try to make a face-to-face visit as opposed to ONLY e-mailing." However, some participants indicated that making social connections was difficult due to the structure of their work environment, time constraints, and office politics.

A few important differences between the conditions bear mention, especially as they partially might explain differences in the relatively stronger effects for the gratitude condition. First, the social connectedness intervention necessarily involves the willingness of another person to participate in the social interaction, whereas the gratitude condition was the sole responsibility of the study participant. Second, the social connectedness intervention arguably required more time and behavioral change while the gratitude intervention was more reflective and cognitive in nature. Third, not all social interaction is positive, and even interactions that may reduce negative affect by reducing loneliness, for example, are not necessarily "fun" or "engaging." Also, as a reviewer keenly noted, people actually may feel less, not more, happy if they fail to initiate social contact when instructed to do so.

These potential burdens and factors notwithstanding, results to a question on the final survey indicated that participants actually would have chosen the social connectedness intervention over the gratitude intervention if given a choice. Thus, employees seem to value an intervention promoting social connectedness. However, it must be easy to complete, appropriate for the employee and workplace, and facilitate, rather than hinder, workday productivity.

A final practical implication that bears emphasis is the potential for these types of interventions to actually improve health and, in turn, reduce absence. Although tentative, the current findings are quite promising and are consistent with research showing that writing about positive experiences and aspects of oneself can improve objectively measured physical health (e.g., Burton and King 2004). To the degree that these interventions can improve physical health and reduce associated organizational costs (e.g., lost productivity and insurance costs), their benefit to organizations obviously increases dramatically. Studies trying to replicate the present results and extend these findings by including more objective outcomes (e.g., physiological indicators) and examining mediating mechanisms certainly would be of value.

Limitations

Several limitations of the study warrant mention. First, the sample size was relatively modest. As such, statistical power was limited, potentially leading to some of the nonsignificant results. In particular, the results from the combined analyses for NAWB reported above, along with the decreasing mean values for NAWB over time (in Table 2), suggest that these interventions may reduce negative affect to some degree. A larger sample size would be necessary to detect statistically significant results though. Notably, however, small sample sizes are not atypical for intervention research (e.g., Lyubomirsky et al. 2005). Despite participants reporting favorable reactions to the interventions, recruiting participants was challenging. Our impression was that initial reluctance to participate was mainly a function of limited time. Qualitative comments from participants seemed to confirm that time was a limiting factor. Thus, future interventions should emphasize activities that are brief and easy to complete. Also, recruiting a larger initial sample of participants will increase power.

Related to the small sample, we opted to forgo a control group in order to maximize the number of participants in intervention conditions. Although a control group would be ideal, two findings potentially mitigate concerns over the lack of a control group. First, we gain confidence from the fact that the two interventions impacted different outcomes. Also, the primarily nonsignificant results for the social connectedness condition suggest that there was not a general “placebo effect.” Had we found uniformly positive changes across all variables and conditions, we would be concerned about demand characteristics and the need for a formal control group. Similar pretest–posttest designs sans control group are relatively common in some areas of research, for example, when small sample size or the ethics of withholding treatment make a control group impractical.

Also, we did have considerable attrition; 60 % of the people who responded to the initial set of measures completed the intervention and all follow-up surveys. Again, qualitative feedback suggested that the time required was the main concern. Another potential cause for attrition was that all contact with participants was online; past research suggests that the lack of face-to-face contact can increase attrition (Eysenbach 2005). We were not aware of this effect prior to the study and did not wish to burden participants with training sessions. That said, future studies might benefit from in-person contact.

An additional consideration concerns the measure of social connectedness (Lee and Robbins 1995). Although this is a widely used and validated measure, it may have failed to capture the type of connectedness we sought to enhance here. As such, we would recommend that future studies include (additional) measures of social relations.

Another issue concerns our decision to randomly assign people to conditions rather than letting them choose an intervention. Sheldon and Lyubomirsky (2007) argued that interventions should fit with one’s personality and needs. Thus, results may have been even more encouraging if people chose their condition. We opted to assign people to strengthen internal validity, but doing so potentially increased attrition and attenuated the strength of the effects.

Also of note is that we only assessed well-being 4 weeks post-intervention. Reassessing the outcomes several months after the intervention would be beneficial but simply was not practical in this case. Lastly, the generalizability of the sample is a potential issue as the sample was entirely comprised of university employees (albeit different departments and functions) and was predominantly female (87 %).

Future Directions

Given the dearth of empirical information on interventions in the organizational context, several research questions remain. For example, researchers should examine the optimal length for the intervention and the ideal frequency of activity completion (e.g., three versus five times a week; see Lyubomirsky and Layous 2013). Also informative would be to compare the effectiveness of these interventions conducted in the work environment versus at home. Completing these interventions at work presumably could serve either as a “micro break” and enhance well-being or could be an interference and burden, thereby causing frustration and greater stress. Another consideration is that completing these interventions at work may boost adherence given the availability of support from colleagues or supervisors who might also be completing the activities. An additional future direction involves assessing other activities. There are a host of these types of activities that may enhance well-being (see Lyubomirsky 2008; Seligman et al. 2005). However, studies primarily have not addressed their application in a work setting (but see Meyers et al. 2013 for some exceptions). Finally, further research is needed on the mechanisms by which interventions impact well-being. The current results indicate that gratitude did not, in fact, mediate the relationship between the gratitude intervention and PAWB. Future researchers may wish to explore other theoretical mechanisms mentioned previously (e.g., reducing cognitive dissonance and preventing “hedonic treadmill”).

Based on our review of the literature on these types of interventions, both in the workplace and in general, no firm recommendations can be made about many of these issues (e.g., frequency and duration of interventions). The number of studies experimentally examining each of these issues is small and the results that do exist sometimes are inconsistent—likely due to idiosyncrasies in the studies

(e.g., the population and context; Lyubomirsky and Layous 2013). More research is needed to work toward being able to make firmer conclusions and recommendations regarding these issues.

In sum, the current climate of employment attitudes is changing, whereby job security, loyalty, and the average length of employment with one company are much lower than they have been historically (Fisher 2010). Also, due to economic and societal changes, work seems to be becoming more, not less, challenging from a psychological standpoint (American Psychological Association 2007). Given these recognitions, coupled with the potential benefits of job-related well-being, interventions to increase well-being at work through employee-directed intentional, positive interventions may be increasingly pertinent.

Appendix 1: Intervention instructions presented via e-mailed slide presentations

Social Connectedness Intervention Instructions

- We would like you to increase your social ties with your coworkers. We are going to provide different strategies to do this.
- Log in 3 times a week (you can choose which days you want to log in) and try to do the different strategies 3 times a week.
- You can do the same thing three times or choose different ones each time.
- Do the activity for 2 weeks beginning NEXT Monday or the first day you will return to work.

Sample Strategies to Increase Social Ties

1. Instead of e-mailing someone, call him or her or go to his or her desk to discuss the topic you were going to e-mail about.
2. Do something social outside of work hours with a coworker (e.g., go to dinner, happy hour, and the gym).
3. Do something social during work hours with a coworker (e.g., get coffee, go for a walk, and take a lunch break together).
4. Talk with one coworker who you do not normally talk to (e.g., could be work related or not work related).
5. Start or join a team or group activity with your coworkers (e.g., softball team, kickball team, book club, and road race).
6. Ask around to see whether you live close enough that you could commute to work with a coworker (carpool or take the public transportation together).

7. Plan or attend a group activity for your coworkers after work (e.g., a baseball game and happy hour).

Gratitude Intervention Instructions

- We would like you to think about the many things in your job/work, both large and small, for which you are grateful. These might include supportive work relationships, sacrifices, or contributions that others have made for you, advantages or opportunities at work, or thankfulness for the opportunity to have your job in general. Try to think of new ideas that you have not focused on in the past.
- You will log into the Web site we provide and list things about your job for which you are grateful on three days for each of the next 2 weeks (you can choose which days you want to log in).
- Do this for 2 weeks beginning NEXT Monday or the first day you will return to work.

Appendix 2: Study Measures

For all measures, participants reported their well-being (on the measure below) “over the past 30 days,” “over the past 2 weeks,” and “over the past 30 days,” at the first, second, and third survey administrations, respectively.

Gratitude Measure

Indicate to what extent you generally have felt this way at work.

1. Grateful
2. Thankful
3. Appreciative

Social Connectedness Measure

1. I feel disconnected from the world around me at work (*R*)
2. I feel so distant from people at my job (*R*)
3. I have no sense of togetherness with my work peers (*R*)
4. I don't feel I participate with anyone or any group at work (*R*)

Job-Related Affective Well-Being Measure (Positive Affect Items)

My job made me feel...

At ease, Calm, Content, Elated, Excited, Enthusiastic, Happy, Inspired, Pleased, Satisfied, Cheerful, Energetic, Ecstatic, Proud, Relaxed.

Job-Related Affective Well-Being Measure (Negative Affect Items)

My job made me feel...

Annoyed, Bored, Disgusted, Frustrated, Gloomy, Angry, Anxious, Confused, Depressed, Discouraged, Frightened, Furious, Fatigued, Intimidated, Miserable.

References

- Adler, M. G., & Fagley, N. S. (2005). Appreciation: individual differences in finding value and meaning as a unique predictor of subjective well-being. *Journal of Personality, 73*, 79–114.
- Allen, D. G., Renn, R. W., & Griffith, R. W. (2003). The impact of telecommuting design on social systems, self-regulation, and role boundaries. *Research in Personnel and Human Resource Management, 22*, 125–163.
- American Psychological Association. (2007). *Stress in America*. Retrieved from www.apa.org/news/press/releases/stress/index.aspx. Accessed 3 May 2013.
- Basch, J., & Fisher, C. D. (2000). Affective events-emotions matrix: A classification of work events and associated emotions. In N. M. Ashkanasy, D. E. J. Hartel, & W. J. Zerbe (Eds.), *Emotions in the workplace: Research, theory, and practice* (pp. 36–48). Westport: Quorum Books.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*, 497–529.
- Berg, J. M., Wrzesniewski, A., & Dutton, J. E. (2010). Perceiving and responding to challenges in job crafting at different ranks: When proactivity requires adaptivity. *Journal of Organizational Behavior, 31*, 158–186.
- Bolger, N., DeLongis, A., Kessler, R. C., & Schilling, E. A. (1989). Effects of daily stress on negative mood. *Journal of Personality and Social Psychology, 57*, 808–818.
- Bolier, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., & Bohlmeijer, E. (2013). Positive psychology interventions: a meta-analysis of randomized controlled studies. *BMC Public Health, 13*, 119.
- Brickman, P., & Campbell, D. T. (1971). Hedonic relativism and planning the good society. In M. H. Appley (Ed.), *Adaptation level theory* (pp. 287–305). New York: Academic Press.
- Burton, C. M., & King, L. A. (2004). The health benefits of writing about intensely positive experiences. *Journal of Research in Personality, 38*, 150–163.
- Campion, M. A., & McClelland, C. L. (1993). Follow-up and extension of the interdisciplinary costs and benefits of enlarged jobs. *Journal of Applied Psychology, 78*, 339–351.
- Chiaburu, D. S., & Harrison, D. A. (2008). Do peers make the place? Conceptual synthesis and meta-analysis of coworker effects on perceptions, attitudes, OCBs, and performance. *Journal of Applied Psychology, 93*, 1082–1103.
- Dimotakis, N., Scott, B. A., & Koopman, J. (2011). An experience sampling investigation of workplace interactions, affective states, and employee well-being. *Journal of Organizational Behavior, 32*, 572–588.
- Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An experimental investigation of gratitude and subjective well-being in daily life. *Journal of Personality and Social Psychology, 84*, 377–389.
- Emmons, R. A., & McCullough, M. E. (Eds.). (2004). *The psychology of gratitude*. USA: Oxford University Press.
- Eysenbach, G. (2005). The law of attrition. *Journal of Medical Internet Research, 7*(1). Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1550631/>. Accessed 3 May 2013.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Fisher, C. D. (2010). Happiness at work. *International Journal of Management Reviews, 12*, 384–412.
- Froh, J. J., Yurkewicz, C., & Kashdan, T. B. (2009). Gratitude and subjective well-being in early adolescents: Examining gender differences. *Journal of Adolescence, 32*, 633–640.
- Geraghty, A. W. A., Wood, A. M., & Hyland, M. E. (2010). Dissociating the facets of hope: Agency and pathways predict dropout from unguided self-help therapy in opposite directions. *Journal of Research in Personality, 44*, 155–158.
- Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance, 16*, 250–279.
- Halbesleben, J. R. B. (2006). Sources of social support and burnout: a meta-analytic test of the conservation of resources model. *Journal of Applied Psychology, 91*, 1134–1145.
- Harris, A. H. S. (2006). Does expressive writing reduce health care utilization? A meta-analysis of randomized trials. *Journal of Consulting and Clinical Psychology, 74*, 243–252.
- Harter, J. K., Schmidt, F. L., & Keyes, C. L. (2003). Well-being in the workplace and its relationship to business outcomes: A review of the Gallup studies. In C. L. Keyes & J. Haidt (Eds.), *Flourishing: The positive person and the good life* (pp. 205–224). Washington, DC: American Psychological Association.
- Hurley, D. B., & Kwon, P. (2012). Results of a study to increase savoring the moment: differential impact on positive and negative outcomes. *Journal of Happiness Studies, 13*, 579–588.
- Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The social connectedness and the social assurance scales. *Journal of Counseling Psychology, 42*, 232–241.
- Lyubomirsky, S. (2008). *The how of happiness: A scientific approach to getting the life you want*. New York: Penguin Press.
- 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., King, L., & Diener, E. (2005a). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin, 131*, 803–855.
- Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005b). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9*, 111–131.
- MacKinnon, D. P. (2008). *Introduction to statistical mediation analysis*. New York: Erlbaum.
- McCullough, M. E., Emmons, R. A., & Tsang, J. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology, 82*, 112–127.
- Meyers, C., van Woerkom, M., & Bakker, A. B. (2013). The added value of the positive: A literature review of positive psychology interventions in organizations. *European Journal of Work and Organizational Psychology*.
- Myers, D. G. (2000). The funds, friends, and faith of happy people. *American Psychologist, 55*, 56–67.

- Raudenbush, S. W., Bryk, A. S., & Congdon, R. (2004). HLM 6 for Windows (Computer software). Lincolnwood, IL: Scientific Software International.
- Ray, R. L., & Rizzacasa, T. (2012). *Job Satisfaction: 2012 Edition* (No. TCB_R-1495-12-RR). The Conference Board, Inc. Retrieved from <http://www.conference-board.org/publications/publicationdetail.cfm?publicationid=2258>. Accessed 3 May 2013.
- Reis, H. T., Sheldon, K. M., Gable, S. L., Roscoe, J., & Ryan, R. M. (2000). Daily well-being: The role of autonomy, competence, and relatedness. *Personality and Social Psychology Bulletin*, *26*, 419–435.
- Roethlisberger, F. J., & Dickson, W. J. (1939). *Management and the worker: an account of a research program conducted by the Western Electric Company*. Chicago: Harvard University Press.
- Sarbaugh-Thompson, M., & Feldman, M. S. (1998). Electronic mail and organizational communication: does saying “hi” really matter? *Organization Science*, *9*, 685–698.
- Seligman, M. E., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: empirical validation of interventions. *American Psychologist*, *60*, 410.
- Seligman, M. E. P., Rashid, T., & Parks, A. C. (2006). Positive psychotherapy. *American Psychologist*, *61*, 774–788.
- Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: the self-concordance model. *Journal of Personality and Social Psychology*, *76*, 482.
- Sheldon, K. M., & Lyubomirsky, S. (2006). Achieving sustainable gains in happiness: Change your actions, not your circumstances. *Journal of Happiness Studies*, *7*, 55–86.
- Sheldon, K. M., & Lyubomirsky, S. (2007). Is it possible to become happier? (and if so, how?). *Social and Personality Psychology Compass*, *1*, 129–145.
- Sheldon, K. M., Kasser, T., Smith, K., & Share, T. (2002). Personal goals and psychological growth: Testing an intervention to enhance goal attainment and personality integration. *Journal of Personality*, *70*, 5–31.
- 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*, *65*, 467–487.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, *103*, 193–210.
- Thoresen, C. J., Kaplan, S. A., Barsky, A. P., Warren, C. R., & de Chermont, K. (2003). The affective underpinnings of job perceptions and attitudes: A meta-analytic review and integration. *Psychological Bulletin*, *129*, 914–945.
- Van Katwyk, P. T., Fox, S., Spector, P. E., & Kelloway, E. K. (2000). Using the job-related affective well-being scale (JAWS) to investigate affective responses to work stressors. *Journal of Occupational Health Psychology*, *5*, 219–230.
- Warr, P. (2007). *Work, happiness, and unhappiness*. Mahwah: Lawrence Erlbaum Associates.
- Watkins, P. C. (2004). Gratitude and subjective well-being. In R. A. Emmons & M. E. McCullough (Eds.), *Psychology of gratitude* (pp. 167–194). New York, NY: Oxford University Press.
- Watson, D. (2000). *Mood and temperament*. New York: Guilford Press.
- Watson, D., Clark, L. A., McIntyre, C. W., & Hamaker, S. (1992). Affect, personality, and social activity. *Journal of Personality and Social Psychology*, *63*, 1011.
- Weiss, H. M. (2002). Deconstructing job satisfaction: Separating evaluations, beliefs and affective experiences. *Human Resource Management Review*, *12*, 173–194.
- Westermann, R., Spies, K., Stahl, G., & Hesse, F. W. (1996). Relative effectiveness and validity of mood induction procedures: A meta-analysis. *European Journal of Social Psychology*, *26*, 557–580.
- Wood, A. M., Froh, J. J., & Geraghty, A. W. A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review*, *30*, 890–905.
- Wood, A. M., Joseph, S., & Maltby, J. (2008). Gratitude uniquely predicts satisfaction with life: Incremental validity above the domains and facets of the five factor model. *Personality and Individual Differences*, *45*, 49–54.
- Wrzesniewski, A., & Dutton, J. E. (2001). Crafting a job: Revisioning employees as active crafters of their work. *The Academy of Management Review*, *26*, 179–201.

Copyright of Journal of Business & Psychology is the property of Springer Science & Business Media B.V. and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.