

Leaders' Trait Mindfulness and Transformational Leadership: The Mediating Roles of Leaders' Positive Affect and Leadership Self-Efficacy

Erica L. Carleton
University of Saskatchewan

Julian Barling and Melissa Trivisonno
Queen's University

Long a focus of research on psychological well-being, mindfulness is now attracting empirical interest in the organisational sciences and we investigate whether and how leaders' trait mindfulness is associated with transformational leadership. Drawing upon mindfulness and social learning theories, we hypothesise that leaders' trait mindfulness is associated indirectly with transformational leadership and that leaders' positive affect and leadership self-efficacy beliefs mediate this relationship. Using serial mediation procedures in PROCESS 3.0, multisource data from 183 leader-follower dyads showed that the effects of leaders' trait mindfulness on transformational leadership were mediated by leaders' positive affect and leadership self-efficacy beliefs, after controlling for leaders' age and negative affect. Conceptual, methodological, and practical implications are discussed.

Public Significance Statement

Mindfulness is a popular topic touting positive effects for organizations. This study contributes to understanding how mindfulness relates to leadership by showing how mindfulness positively effects transformational leadership behaviors, namely through increasing leader's positive affect and leadership self-efficacy.

Keywords: mindfulness, transformational leadership, positive affect, leadership self-efficacy

Embedded within the spiritual philosophy of Buddhism, mindfulness has been practiced for centuries, and reflects an open, receptive, and nonjudgmental attention, and awareness of one's current experience and reality (Brown & Ryan, 2003). Despite its centuries-old tradition, mindfulness has only now captured the popular imagination as a means of enhancing well-being, as reflected through the extensive coverage it currently receives within social media and mainstream news outlets (e.g., Widdicombe, 2015). Estimates from large sample surveys suggest that approximately 15% of the U.S. workforce engaged in some form of mindfulness activity in 2007 (Kachan et al., 2017).

The increasing scientific interest in mindfulness is evidenced in the diverse areas to which it has been subject to empirical scrutiny over the past several decades. As examples, mindfulness practices have been used to reduce clinical levels of adult depression and anxiety (Chiesa & Serretti, 2011), and substance abuse disorders,

and promote relapse prevention (Bowen et al., 2009). The potential value of mindfulness is also seen in controlled outcome studies on pain: Mindfulness is no less effective than traditional pain interventions or cognitive behavioural therapy approaches (Ehde, Dillworth, & Turner, 2014). Organisational practitioners and scholars have been late entrants into the growing mindfulness arena, predicated on the assumption that more mindful employees will experience better health, lower health care costs, and higher levels of productivity. Many companies are now providing mindfulness programs including Google, General Mills, the U.S. military, and major business schools (Hyland, Lee, & Mills, 2015). While results of research on mindfulness and work-related phenomena has been mostly positive (e.g., Allen & Kiburz, 2012; Hülsheger, Alberts, Feinholdt, & Lang, 2013; Hülsheger, Feinholdt, & Nübold, 2015), little is known about the impact of mindfulness on leadership behaviours.

Therefore, the goal in this study is to investigate whether and how trait mindfulness might influence transformational leadership. We suggest that trait mindfulness is indirectly related to transformational leadership behaviour, and specifically that trait mindfulness is related to positive affect, which in turn is related to leadership self-efficacy beliefs, leading to transformational leadership behaviour (see Figure 1). This study makes a number of potential contributions. (a) We contribute to the literature examining mindfulness in organisations; (b) we show that mindfulness is an important antecedents of leadership behaviour; and (c) we

Erica L. Carleton, Edwards School of Business, University of Saskatchewan; Julian Barling and Melissa Trivisonno, Smith School of Business, Queen's University.

Financial support from the Social Sciences and Humanities Research Council of Canada for the first two authors is acknowledged gratefully.

Correspondence concerning this article should be addressed to Erica L. Carleton, Edwards School of Business, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, S7N 5A7. E-mail: carleton@edwards.usask.ca

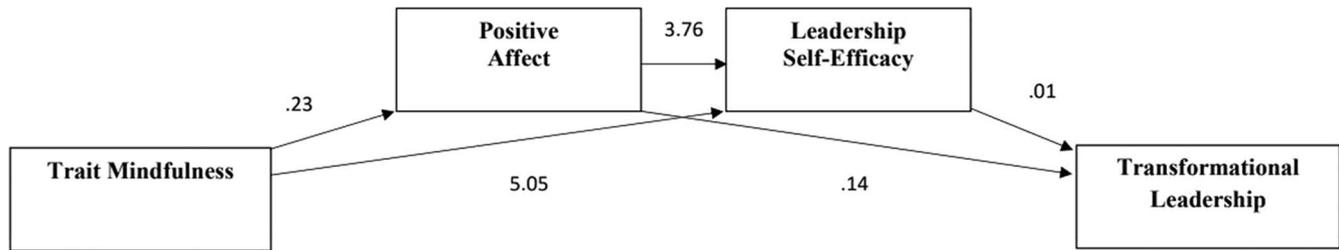


Figure 1. Unstandardized model linking trait mindfulness to transformational through positive affect and leadership self-efficacy beliefs.

isolate the mechanisms through which mindfulness is indirectly related to transformational leadership.

Trait Mindfulness

Because of the widespread scrutiny on mindfulness in the social sciences in general (e.g., Sedlmeier et al., 2012) and emerging analyses within organisational psychology more specifically (e.g., Hülsheger et al., 2013), an extensive introduction to the nature of mindfulness is no longer necessary. However, it is appropriate to point to several key features of mindfulness that cross different conceptual definitions (e.g., Baer, Smith, & Allen, 2004; Brown & Ryan, 2003) that explain why trait mindfulness might be associated with transformational leadership and leadership self-efficacy beliefs. First, mindfulness reflects an intentional state of heightened awareness of, and attention to, present internal, and external experiences. Second, the essence of this heightened awareness and attention is that it is nonjudgmental, characterised by emotional detachment, and avoids cognitive categorisations of the experience (Brown & Ryan, 2003; Glomb, Duffy, Bono, & Yang, 2011). Third, mindfulness allows for the simultaneous awareness and acceptance of more than one perspective (Langer & Moldoveanu, 2000). Fourth, mindfulness enables the nonjudgmental appreciation of, and nonreactivity toward, inner experiences (Baer et al., 2004). Last, most definitions within organisational research view mindfulness as a state of consciousness.

To describe this state of mindfulness, Glomb et al. (2011) use the hypothetical example of getting stuck in heavy traffic without evaluating the experience negatively or ruminating about what one could have done to avoid the experience. Extending their hypothetical example to a leadership context, being involved in an ongoing negative conflict with a subordinate while avoiding the temptation to label the interaction as harmful or as proof of one's own incompetence, or that of employee's, would typify leader mindfulness. Mindfulness is most frequently operationalized as an individual difference or trait-level variable in organisational research (e.g., Leroy, Anseel, Dimitrova, & Sels, 2013; Long & Christian, 2015), but has also been examined as a state level variable (e.g., Hülsheger et al., 2015; Snippe, Nyklíček, Schroevers, & Bos, 2015). Like others, we assume a trait perspective to mindfulness in this research study, as the goal of the current study is to examine between subjects differences, not within.

Initial research findings point to the benefits of trait mindfulness for employees' well-being. For example, mindfulness is associated directly or indirectly with lower levels of emotional exhaustion, anxiety, depression, and negative affect, and higher levels of

psychological capital, and job satisfaction (e.g., Hülsheger et al., 2013; Roche, Haar, & Luthans, 2014), work-family balance and sleep quality (Allen & Kiburz, 2012). Nonetheless, while there has been an increase in research in the area of mindfulness in organisations in general (see Lomas et al., 2017), research in the area of leaders' mindfulness is in its infancy, especially with regards to mindfulness as an antecedent to leadership behaviour. One recent study examining mindfulness as an antecedent to leadership behaviour, examined servant leadership, and found that leaders' trait mindfulness was positively related to the humility, standing back, and authenticity dimensions of servant leadership (Verdorfer, 2016). There has been some research conducted on the outcomes of leader mindfulness. For example, Reb, Narayanan, and Chaturvedi (2014) found that leader mindfulness was related to follower well-being and performance. We suggest that leaders' trait mindfulness will be indirectly associated with transformational leadership via leaders' positive affect and leadership self-efficacy beliefs.

Trait Mindfulness and Transformational Leadership

Transformational leadership is defined as leadership that involves inspiring followers to commit to a shared vision and goals for an organisation, by challenging them to be innovative and developing their own leadership capacity through coaching, mentoring, and provision of both challenge and support (Bass & Riggio, 2006). While discussed more extensively elsewhere (e.g., Barling, 2014; Bass & Riggio, 2006), transformational leadership comprises four conceptually distinct behaviours, namely; idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration that are invariably operationalized as a unidimensional construct. As mindfulness reflects an open, receptive, and nonjudgmental attention and awareness of one's current experience and reality (Brown & Ryan, 2003), it likely enables leaders to enact transformational leadership behaviours. We hypothesise that the mechanisms through which mindfulness has its effects on transformational leadership are positive affect which in turn leads to leadership self-efficacy. These mediating mechanisms will be discussed below.

Trait Mindfulness and Positive Affect

High positive affect reflects a state of full concentration, in which individuals are alert, energetic, and engaged (Watson, Clark, & Tellegen, 1988). Mindfulness likely supports positive affect because it consists of being focused on the present moment

and deeply engaged with present experiences (Kabat-Zinn & Hann, 2009). Trait mindfulness promotes emotional appraisals that are centered in the present and, thus, more neutral and objective (e.g., Good et al., 2016). Mindfulness may, therefore, stimulate an increased attention to and awareness of naturally occurring positive emotional experiences leading to greater positive affect (Erisman & Roemer, 2010; Jislin-Goldberg, Tanay, & Bernstein, 2012).

Individuals higher in trait mindfulness are also able to avoid biased memories of external events and are less susceptible to negative responding after negative experiences. Mindful individuals are less likely to be anxious about the future, as a result of which mindfulness promotes positive affect because individuals are neither ruminating about the past nor worrying about the future. Indeed, a meta-analysis of 39 studies examining mindfulness-based therapy on anxiety and depression found that mindfulness-based therapy was effective for improving anxiety (0.63) and mood symptoms (0.59) from pre- to posttreatment in the overall sample. In patients with anxiety and mood disorders, this intervention was associated with effect sizes of 0.97 and 0.95 for improving anxiety and mood symptoms, respectively (Hofmann, Sawyer, Witt, & Oh, 2010).

Further research findings support the link between trait mindfulness and positive affect. For example, a meta-analysis examining mindfulness and its relationship to personality and affect found that positive affect had the fourth strongest relationship to mindfulness ($\rho = .41$) behind neuroticism, negative affect, and conscientiousness (Giluk, 2009). Trait mindfulness is associated with lower levels of emotional exhaustion, anxiety, depression, and negative affect, and positively associated with higher levels of psychological capital (i.e., hope, resilience, efficacy, and optimism; Roche et al., 2014). Of more relevance, given its longitudinal design, an experience-sampling study showed that trait mindfulness predicted self-regulation and positive affect (Brown & Ryan, 2003). Thus, we hypothesise that:

Hypothesis 1: Leaders' trait mindfulness is related to leaders' positive affect.

Positive Affect and Leadership Self-Efficacy Beliefs

Introduced by Bandura 40 years ago (Bandura, 1977), self-efficacy beliefs reflect the personal conviction that given sufficient effort, individuals can successfully enact the required behaviour. Self-efficacy beliefs are more specific and focused than self-confidence or self-esteem, and Bandura (1977) argued that self-efficacy beliefs predict the initiation, persistence, and maintenance of behaviour in the face of obstacles. Workplace-related self-efficacy beliefs have typically been conceptualised as either context-specific (e.g., Parker, 1998) or context-free beliefs (e.g., Chen, Gully, & Eden, 2001). Like Paglis and Green (2002), we conceptualise leadership self-efficacy beliefs as context (i.e., work), and task-specific (i.e., leadership), and focus on one antecedent of leadership self-efficacy beliefs, namely trait positive affect.

Bandura (1977, 1982) outlined four determinants of individuals' self-efficacy beliefs: Performance mastery or success experiences, vicarious experiences, verbal persuasion, and psychological or emotional arousal. Of interest in the current study is emotional arousal. As noted by Bandura (1977), high levels of emotional

arousal interfere with effective performance and because individuals tend to perceive high negative emotional activation as a sign of vulnerability, over time individuals learn that success is more likely when they are not burdened by negative affect. We extend this to suggest that people also learn over time that effective performance is more likely when they experience positive affect.

Conservation of resource theory (Hobfoll, 1989) augments the explanation as to why positive affect predicts leadership self-efficacy beliefs. Trait positive affect is a personal resource, and as an enduring characteristic of the self, will likely be available to individuals when needed, to help form judgment of their own efficacy (Cozzarelli, 1993). Moreover, because dispositional positive affect reflects a broad positive belief about the self, which includes self-evaluations of competence, positive affect will boost the belief in one's ability to achieve a desired outcome in a specific situation (i.e., leadership self-efficacy; Cozzarelli, 1993).

Research findings support the link between trait positive affect and higher self-efficacy (e.g., Lyubomirsky, King, & Diener, 2005). Both dispositional optimism and trait positive affect are associated with higher self-efficacy beliefs (Cozzarelli, 1993; Desharnais, Godin, Jobin, Valois, & Ross, 1990). Positive affect also leads individuals to set higher goals for themselves (Baron, 1990; Hom & Arbuckle, 1988), be more confident (George & Brief, 1996) and expect success on tasks (Brown, 1984; Wright & Mischel, 1982). More robust evidence emerges from laboratory studies linking changes after positive mood induction with higher self-efficacy beliefs (Baron, 1990; Kavanagh & Bower, 1985; Samsom & Rachman, 1989). Thus:

Hypothesis 2: Leaders' positive affect is related to leadership self-efficacy beliefs.

Positive Affect and Transformational Leadership

A large body of research demonstrates that happy individuals are successful across multiple life domains, including work performance (Barsade & Gibson, 2007; Lyubomirsky et al., 2005). Moreover, these relationships are consistent across experimental, cross-sectional, and longitudinal studies, using both objective and subjective ratings, and after controlling for possible confounding variables (Cropanzano & Wright, 2001). Thus, we predict that positive affect will be associated with transformational leadership behaviours.

First, leaders high in positive affect are more likely to enact prosocial behaviours; engaging in behaviours that benefit other individuals or the broader collective reflects the values underlying the idealized influence component of transformational leadership (Chi, Chung, & Tsai, 2011; George, 1991; Jin, Seo, & Shapiro, 2016). Second, consistent with the mood congruent memory perspective (Bower, 1981), people who experience positive mood recall more positive memories, and also see future events as positive (Chi et al., 2011). Extrapolating from this perspective, leaders' positive affect will enable them to draw upon more positive memories of interactions with their followers, and view their followers' future contributions more positively, both of which would leave them with a positive vision of the future (Jin et al., 2016). In addition, leaders who experience positive affect will be more adept at using emotion to impart their vision to their followers (Lewis, 2000), behaviours that are consistent with the inspirational motivation component of transformational leadership.

Third, leaders' positive affective displays result in higher follower ratings of charismatic leadership (Barnes, Guarana, Nauman, & Kong, 2016; Damen, van Knippenberg, & van Knippenberg, 2008), which is similar to the idealized influence, and inspirational motivation components of transformational leadership. Fourth, given that positive affect is associated with a positive vision of the future (Chi et al., 2011), leaders who experience high positive affect will assume a more future oriented perspective, and engage in the developmental activities that characterize intellectual stimulation. Fifth, changes in positive affect predict changes in the quality of social relationships (Schutte, 2014), which is analogous to individualized consideration. Last, leaders who experience positive affect are more positive, ambitious, inspirational, and influential when interacting with followers, all of which reflect the behaviours found in transformational leadership (Bono & Judge, 2004; Lim & Ployhart, 2004; Rubin, Munz, & Bommer, 2005). Therefore:

Hypothesis 3: Leaders' positive affect is related to transformational leadership.

Leadership Self-Efficacy Beliefs and Transformational Leadership

Self-efficacy theory posits that people's beliefs about or confidence in their abilities will predict whether they initiate action in the first instance, the effort they will then expend, and the extent to which they persist in the face of seemingly insurmountable challenges (Bandura, 1977). Research results over the past four decades consistently confirm the predictive power of self-efficacy beliefs across very diverse contexts. Moreover, research findings confirm that specific self-efficacy measures yield stronger predictions of outcomes than do generalised measures of self-control (e.g., Barrios, 1985).

Research on the utility of self-efficacy beliefs in organisational settings has reached the stage where there are now no fewer than four separate meta-analyses on this topic. Results of these meta-analytic investigations generally yield significant relationships between self-efficacy beliefs and job performance (e.g., Sadri & Robertson, 1993), though any effects are greater in simple rather than complex tasks (Judge, Jackson, Shaw, Scott, & Rich, 2007; Stajkovic & Luthans, 1998) and in laboratory rather than field studies (Sadri & Robertson, 1993). Moreover, any effects of self-efficacy beliefs are greatest on task rather than overall job performance (Judge et al., 2007) and the relationship between self-efficacy beliefs and work performance is attenuated by individual conscientiousness (Judge et al., 2007).

Consistent with this research, we expect that leadership self-efficacy beliefs will predict leadership behaviours for several reasons. First, leaders' self-efficacy beliefs are important in terms of the motivation to lead (Chan & Drasgow, 2001) and the effectiveness of different leadership styles or behaviours (e.g., McCormick, Tanguma, & López-Forment, 2002; Ng, Ang, & Chan, 2008). More specifically to the current study, leadership self-efficacy beliefs have been linked to the quality of leadership behaviours. While this was not the primary purpose of their research, Courtright, Colbert, and Choi (2014) found a significant zero-order relationship between leadership self-efficacy beliefs and transformational leadership. In addition, Paglis and Green (2002) showed that leaders'

self-efficacy predicted subordinates' ratings of their leaders' willingness to change. A separate study showed that leadership self-efficacy beliefs among military ROTC cadet-leaders in the United States predicted their potential to lead; likewise, context-specific self-efficacy beliefs also predicted peer and officer ratings of performance after leadership training (Chemers, Watson, & May, 2000). Thus, we hypothesise that:

Hypothesis 4: Leadership self-efficacy beliefs are related to transformational leadership.

Taken together, we propose a serial mediation model where leaders' trait mindfulness is indirectly linked with transformational leadership through the mediating effects of leaders' positive affect with in turn is related to leadership self-efficacy beliefs. While there is no prior research investigating this indirect effect, partial support emerges from Schutte's (2014) randomized, control group intervention study: The effects of a 6-week, instructor-guided mindfulness intervention on subsequent generalised self-efficacy beliefs were mediated by changes in positive affect. Thus, we predict that:

Hypothesis 5: Leaders' trait mindfulness is indirectly associated with transformational leadership through the serial mediators: leaders' positive affect and leadership self-efficacy beliefs.

We introduce two methodological procedures to exclude potential rival hypotheses and strengthen any possible inferences from our findings. First, to avoid threats to validity from mono-method bias, we use multisource data, specifically leaders' self-report data on trait mindfulness, positive and negative affect, and leadership self-efficacy beliefs, and subordinates' rated their leaders' transformational leadership. Second, we control statistically for variables that could threaten construct validity while heeding the need to keep control variables to a minimum (Becker et al., 2016). Specifically, following Becker et al. (2016) recommendations, we limited the number of statistical controls in the current study to preserve construct validity of the remaining variables. As such, we only included variables as statistical controls only if they could have posed a plausible threat to construct validity (Becker et al., 2016). Thus, we controlled for age, negative affect because of demonstrated associations with mindfulness (Giluk, 2009; Langer & Moldoveanu, 2000) and transformational leadership (Joseph, Dhanani, Shen, McHugh, & McCord, 2015).

Method

Procedure and Participants

Participants were recruited through Clearvoice Research Panel Services (<http://clearvoiceresearch.com/>). ClearVoice Research's online community consists of more than one million highly responsive and diverse panelists worldwide with 2,500 new registrants per day, including mobile survey panelists. The sample consisted of 190 leader-follower dyads employed in North America. Because of missing data the final sample was 183 leader-follower dyads. On average, leaders were 42.72 years old ($SD = 10.75$; 50% female) and average leadership tenure was 9 years ($SD = 7.58$). Eighteen percent had completed high school or some college

education, 12% completed a 2-year college diploma, 48% completed an undergraduate university degree, and 21% completed a graduate or professional degree. Among the followers, the mean age was 39.63 years (*SD* = 10.99; 47% female) and their average tenure with their current leader was 5.86 years (*SD* = 5.51).

Measures

Study variables. Leaders’ self-ratings were used to provide data on trait mindfulness, positive and negative affect, and leadership self-efficacy beliefs.

Trait mindfulness. Trait mindfulness was assessed using Brown and Ryan’s (2003) 15-item Mindful Attention and Awareness Scale (MAAS). Respondents answered each item (e.g., “I could be experiencing some emotion and not be conscious of it until sometime later,” “I do jobs automatically, without being aware of what I am doing”) in terms of the frequency with which they were experienced using a 6-point scale (1 = *almost always* to 6 = *almost never*). The MAAS was designed for use within the general population and evidence supports its unidimensionality (Brown & Ryan, 2003; MacKillop & Anderson, 2007). Scores on all items were recoded so that higher scores reflected higher levels of trait mindfulness.

Positive affect. To assess positive affect, we used 10 items from the PANAS scale (Watson et al., 1988), in which leaders provided ratings of the extent to which they currently experienced positive emotions (e.g., “enthusiastic”) using a 5-point scale (1 = *very slightly or not at all* to 5 = *extremely*).

Leadership self-efficacy. Leadership self-efficacy was assessed using Paglis and Green’s (2002) 12-item Leadership Self-Efficacy scale, which reflects self-efficacy beliefs about (a) the ability to set directions for work groups (e.g., “I can develop plans for change that will take my unit in important new directions”), (b) gaining followers’ commitment (e.g., “I can obtain the genuine support of my employees for new initiatives in the unit”), and (c) overcoming obstacles (e.g., “I can figure out ways for my unit to solve any policy or procedural problems hindering our change efforts”). Respondents rated how confident they are that they could perform each item on a scale from 0 to 100 (0 = *not at all confident*, 50 = *intermediate level of confidence*, 100 = *completely confident*). Although the scale targets leaders’ self-efficacy beliefs as to whether they can lead change, we judged that all 12 items were relevant to leadership behaviours in general and chose not to modify any items. Unlike Paglis and Green (2002), however, we aggregated across all items to form a unidimensional scale for two reasons: An exploratory factor analysis of the 12 items yielded

a single factor accounting for 73.52% of the variance and the internal consistency was very high ($\alpha = .97$).

Transformational leadership. To assess followers’ perceptions of their leader’s transformational leadership, we used Podsakoff, Mackenzie, and Bommer’s (1996) 22-item questionnaire (e.g., “provides a good model to follow,” “shows respect for my personal feelings”). All items were rated on a 5-point scale (1 = *strongly disagree* to 5 = *strongly agree*). Two items were recoded so that higher scores reflected higher transformational leadership that was assessed as a unidimensional variable.

Control variables. Negative affect was assessed using 10 items from Watson et al.’s (1988) PANAS scale (e.g., “distressed”), each of which was rated on a 5-point scale (1 = *very slightly or not at all* to 5 = *extremely*).

Data Analysis

We proposed an indirect effect model. The data were tested using standard OLS regression procedures as implemented through Hayes’ PROCESS 3.0 using Model 6 for serial mediation (<http://www.afhayes.com>; Hayes, 2013). Following Hayes (2013), unstandardized regression coefficients are reported throughout. Each analysis drew upon 5,000 bootstrapped samples. We report the partially standardized effect to assess the magnitude of the indirect effects, which represents the magnitude of the indirect effect in terms of *SD* units in *Y* (Preacher & Kelley, 2011). Effect size is reported in Table 4.

Results

Leaders’ age and negative affect are controlled in all analyses. Descriptive statistics, intercorrelations, and reliability (internal consistency) for all study variables appear in Table 1.

We first assessed whether any sampling bias existed given that not all requests to participate in this research from leaders to their followers were fulfilled. To do so, we compared scores of leaders whose subordinates responded (*N* = 183), and those who did not (*N* = 760) in terms of the focal, and control variables. The multivariate analysis of variance (MANOVA) was significant (Pillai’s Trace $F(5, 937) = 4.61, p < .01, \eta^2 = .02$). Further analysis showed that while no significant differences emerged in terms of either of the two focal variables (trait mindfulness: $F = 1.70, df = 1,941$; leader self-efficacy beliefs: $F = 0.65, df = 1,941$, both *ns*), significant differences emerged in terms of positive and negative affect (see Table 2), and respondents were younger than those who dropped out, justifying the decision to control statistically for these variables. A separate analysis showed that the two samples did not

Table 1
Descriptive Statistics and Intercorrelations for All Study Variables (*N* = 186–190)

Variables	Mean	<i>SD</i>	1	2	3	4	5	6
1. Age	42.75	10.74	—					
2. Negative affect	2.13	1.07	-.45***	.94				
3. Trait mindfulness	3.31	.94	.22**	-.37***	.95			
4. Positive affect	3.45	.79	-.10	.18*	.13	.90		
5. Leader self-efficacy beliefs	76.11	17.01	.28***	-.24***	.38***	.30***	.97	
6. Transformational leadership	3.45	.53	.19**	-.25***	.26***	.37***	.49***	.92

Note. Cronbach’s α indicated on the diagonal using boldface.
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 2
Attrition Analysis for Focal and Control Variables

Variables	Nonresponse (n = 760) Mean (SD)	Response (n = 183) Mean (SD)	F	η ²
Age (years)	45.75 (11.73)	42.72 (10.75)	10.59*	.011
Negative affect	1.88 (.97)	2.13 (1.07)	7.82*	.008
Positive affect	3.24 (.90)	3.45 (.80)	7.54*	.008
Leadership self-efficacy	77.09 (17.51)	76.11 (17.01)	.65	.001
Trait mindfulness	3.40 (.86)	3.31 (.94)	1.70	.002

* $p < .01$.

differ in terms of gender composition ($\chi^2 = .31$), as a result of which gender was not controlled (Becker et al., 2016).

Hypothesis 1 was supported: After controlling for the variables listed above, trait mindfulness was associated with positive affect (Hypothesis 1; $b = .19, p < .01$, confidence interval, CI [.07, .32]). In turn, positive affect predicted leadership self-efficacy beliefs (Hypothesis 2; $b = 6.94, p < .01$, CI [.4.01, 9.77]). Both Hypotheses 3 and 4 were supported, as positive affect ($b = .21, p < .01$, CI [.12, .30] and leadership self-efficacy beliefs ($b = .01, p < .01$, CI [.01, .02] predicted transformational leadership, respectively (see Table 3).

As can be seen from Table 4, the indirect effects of trait mindfulness on transformational leadership through positive affect and leadership self-efficacy beliefs was significant (Hypothesis 5; $b = .01, SE = .01, CI [.01, .08]$). The total indirect effects, which includes the serial mediation effect, described above, along with the effects of mindfulness on transformational leadership through each mediator (i.e., positive affect and leader’s self-efficacy) separately was also significant ($b = .10, SE = .03, CI [.05, .17]$). Using the partially standardized effect size calculation for the total effects of the serial indirect effects, individuals’ one unit higher in mindfulness are estimated to be .2 SDs higher in their transforma-

tional leadership behaviour as a result of the total indirect effects of mindfulness on positive affect and self-efficacy ($b = .2, SE = .06, CI [.10, .32]$).

Discussion

The goal of the present study was to examine whether and how leaders’ trait mindfulness influences transformational leadership through a serial mediation model where there was an indirect effect mindfulness on transformational leadership through positive affect and leader’s self-efficacy beliefs. As expected, leaders’ trait mindfulness predicted leaders’ positive affect (Hypothesis 1) and leaders’ positive affect in turn predicted leadership self-efficacy beliefs (Hypothesis 2). Both leaders’ positive affect (Hypothesis 3) and leadership self-efficacy beliefs (Hypothesis 4) predicted transformational leadership. Last, the effect of leaders’ trait mindfulness on transformational leadership was mediated by leaders’ positive affect and leadership self-efficacy beliefs (Hypothesis 5). These findings were obtained after controlling for potentially confounding variables, namely leaders’ age, and negative affect. More important, it should also be noted that the indirect effects of mindfulness on transformational leadership through of each mediators (i.e., positive affect and

Table 3
Conditional Indirect Effects of Mindfulness on Transformational Leadership (N = 183 Dyads)^a

Variables	B	SE	t	LLCI	ULCI
Mediator variable: Positive affect					
Mindfulness	.19	.07	2.98**	.07	.32
Age	-.01	.01	-.15	-.01	.01
Negative affect	.18	.06	2.91**	.06	.31
Model summary: $R^2 = .07, F(3, 179) = 4.70, p < .01$					
Mediator variable: Leadership self-efficacy					
Mindfulness	4.67	1.29	3.63**	2.13	7.20
Positive affect (PA)	6.94	1.44	4.82**	4.01	9.77
Age	.32	.12	2.79*	.10	.55
Negative affect	-1.57	1.24	-1.26	-4.02	.89
Model summary: $R^2 = .28, F(4, 178) = 17.16, p < .001$					
Outcome variable: Transformational leadership					
Mindfulness	.01	.04	.18*	-.07	.08
Positive affect	.21	.05	4.56**	.12	.30
Self-efficacy (LSE)	.01	.01	4.83**	.01	.02
Age	.00	.01	.25	-.01	.01
Negative affect	-.11	.04	-2.89	-.18	-.03
Model summary: $R^2 = .59, F(5, 177) = 19.02, p < .001$					

Note. PA = positive affect; LSE = Leadership self-efficacy beliefs; LLCI = lower level confidence interval; ULCI = upper level confidence interval.

^a Unstandardized regression coefficients reported throughout.

** $p < .01$.

Table 4
Indirect Effects and Effect Size

Effects	<i>B</i>	<i>SE</i>	LLCI	ULCI
Indirect effects				
Total	.11	.03	.05	.17
Mindfulness-PA	.04	.02	.01	.08
Mindfulness-LSE	.05	.02	.02	.10
Mindfulness-PA-LSE	.01	.01	.00	.04
Effect size (partially standardized indirect effects)				
Total	.20	.06	.10	.32
Mindfulness-PA	.08	.03	.02	.15
Mindfulness-LSE	.09	.04	.03	.17
Mindfulness-PA-LSE	.03	.02	.01	.07

leader’s self-efficacy beliefs) separately, were also significant and together the total indirect effect of the model, which includes the serial mediation effect (Hypothesis 5) was significant. At a time when widespread speculation suggests almost unlimited benefits for trait mindfulness, these findings begin to provide empirical support for the indirect effects of trait mindfulness on leadership behaviours and just as importantly, how these effects emerge.

Strengths and Weaknesses of the Current Research

Our study has several conceptual and methodological features that strengthen any inferences from the findings. Conceptually, prior research has focused overwhelmingly on the outcomes of different forms of positive or negative leadership behaviours; well-being antecedents of leadership have received considerably less empirical scrutiny (Barling, 2014). Moreover, by pointing to the distal or indirect effects of trait mindfulness on transformational leadership, the current study extends our understanding of the range of possible antecedents of organisational leadership, especially those that lie outside of the workplace. More specifically, by disentangling the effects of trait mindfulness, positive affect and leadership self-efficacy beliefs on transformational leadership, our findings add to the literature supporting the role of leaders’ own well-being on the quality of their own leadership behaviours (Barling & Cloutier, 2017).

Methodologically, one strength of our study is that we avoid problems associated with mono-source bias in leadership research by obtaining leaders’ self-assessments of trait mindfulness and followers’ ratings of their leaders’ transformational leadership. Like all research, however, our study also has several limitations that could compromise any inferences made from the findings. First and foremost, our study was cross-sectional in nature, limiting the extent to which causal inferences can be entertained. However, the plausibility of this threat is reduced as there is no conceptual basis on which to posit a link from context-specific (i.e., leadership) self-efficacy beliefs to later trait mindfulness. Another limitation of the current study is the small effect sizes (Cohen, 1992): As future research identifies relevant contextual factors and individual difference variables that moderate the links between trait mindfulness and transformational leadership, the conceptual and practical significance of the current findings will be heightened.

Directions for Future Research

Leaders’ trait mindfulness was indirectly related to transformational leadership through leaders’ positive affect and leadership self-efficacy beliefs, creating opportunities for future research to investigate further how trait mindfulness might affect leadership. One question is whether the separate components of trait mindfulness affect leadership differently. While the construct of trait mindfulness is studied mostly within a unidimensional perspective as was the case in this study, the five different facets (namely, observing, describing, awareness, nonjudgment, and nonreactivity; Baer et al., 2008) may differentially influence subsequent leadership. For example, in one study, only the nonjudgmental and awareness dimensions influenced aggression through anger rumination (Peters et al., 2015). Relatedly, because transformational leadership is also comprised of four components, researchers could examine how the separate components of mindfulness map on to the four components of transformational leadership. For example, idealized influence occurs when leaders choose to do what is right, rather than what is expedient and act in ways that embody their ideals. Trait mindfulness, and more specifically the awareness component may help leaders achieve the emotional, and cognitive clarity that would enable them to avoid the distractions, ambiguities, and temporal pressures inherent in the leadership role, and focus specifically on doing what is right (i.e., idealized influence). Second, the cross-sectional nature of our data make replications using longitudinal data a necessary next step in any research on the effects of mindfulness on leadership behaviours.

Third, the accuracy of leaders’ self-efficacy beliefs should be investigated. Research in other areas (e.g., middle school students’ math performance; Pajares & Graham, 1999) has shown that the accuracy of self-efficacy perceptions correlated with academic performance. Within a leadership perspective, optimistic self-efficacy beliefs are necessary if leadership behaviours are to be initiated and maintained, but (leader) self-efficacy beliefs can be overly optimistic, that is, when they exceed leaders’ actual capabilities. Thus, overly optimistic leader self-efficacy beliefs might be harmful (see McNulty & Fincham, 2012). Relatedly, researchers may want to examine the self-other agreement of transformational leadership ratings. For example, researchers could examine if those higher in mindfulness have greater self-awareness (i.e., higher self-other agreement) and, thus, are more transformational leaders (Fleenor, Smither, Atwater, Braddy, & Sturm, 2010).

Last, the most robust support for the indirect effects of mindfulness on the quality of leadership behaviours would derive from intervention studies using experimental designs. Given that the efficacy of low dose, Internet-based mindfulness interventions require no more than a few minutes over several days (e.g., Hülshager et al., 2013, 2015; Schutte, 2014), future research should replicate the indirect effects of mindfulness on different leadership behaviours (e.g., ethical leadership, humility) both in the field and the laboratory.

Organisational Implications

The present findings open up new opportunities for leadership interventions within organisations. Prior research has shown that leadership training within organisations can be effective (Avolio, Reichard, Hannah, Walumbwa, & Chan, 2009) and controlled outcome research has shown mindfulness training to be effective

with respect to problems such as the treatment of chronic pain (e.g., Ussher et al., 2014; Wong et al., 2011). Two aspects of mindfulness interventions enhance their potential utility for organisations. First, the range of behaviours that might be affected by mindfulness training is vast, extending beyond well-being (e.g., Hülshager et al., 2013, 2015) to include indirect effects on work engagement (Leroy et al., 2013). Second, Hülshager et al.'s (2013, 2015) research demonstrates that low dose, Internet-based mindfulness training is not only effective, but likely cost-effective as well.

Conclusion

Faced with any new idea whose initial popularity could reasonably be regarded as a movement or a fad, enthusiasm invariably exceeds reality; such is the case with the focus on mindfulness and its stated benefits for leadership. In such situations, the scientific endeavor has a specific role: Borrowing from Campbell and Stanley (1966), “. . . the course of science consists of further experiments which refine the X, teasing out those aspects which are most essential to the effect” (p. 33). Our study has identified one path through which trait mindfulness predicts transformational leadership, and it now remains for further research to investigate how, and under what conditions, trait (and state) mindfulness might benefit different forms of organisational leadership.

Résumé

Depuis longtemps un sujet des recherches sur le bien-être psychologique, le concept de la pleine conscience suscite maintenant l'intérêt de chercheurs empiriques dans les sciences de l'organisation. Nous cherchons à déterminer dans quelle mesure et de quelle façon la caractéristique de la pleine conscience chez les leaders serait associée au leadership transformationnel. En nous fondant sur les théories sur la pleine conscience et la socialisation, nous formulons l'hypothèse que la caractéristique de la pleine conscience chez les leaders est indirectement associée au leadership transformationnel, et que l'affect positif des leaders et les croyances d'auto-efficacité du leadership influent sur cette relation. Au moyen de procédures dans le PROCESS 3.0 pour l'analyse de l'effet, des données de multiples sources sur 183 dyades leader-adepte ont révélé que les effets de la caractéristique de pleine conscience des leaders sur le leadership transformationnel étaient influencés par l'affect positif des leaders et les croyances d'auto-efficacité du leadership, en ayant tenu compte de l'âge des leaders et de l'affect négatif. Les répercussions sur les plans des concepts, de la méthodologie et de la pratique sont mises en relief.

Mots-clés : pleine conscience, leadership transformationnel, affect positif, auto-efficacité du leadership.

References

- Allen, T. D., & Kiburz, K. M. (2012). Trait mindfulness and work-family balance among working parents: The mediating effects of vitality and sleep quality. *Journal of Vocational Behavior, 80*, 372–379. <http://dx.doi.org/10.1016/j.jvb.2011.09.002>
- Avolio, B. J., Reichard, R. J., Hannah, S. T., Walumbwa, F. O., & Chan, A. (2009). A meta-analytic review of leadership impact research: Experimental and quasi-experimental studies. *The Leadership Quarterly, 20*, 764–784. <http://dx.doi.org/10.1016/j.leaqua.2009.06.006>
- Baer, R. A., Smith, G. T., & Allen, K. B. (2004). Assessment of mindfulness by self-report: The Kentucky inventory of mindfulness skills. *Assessment, 11*, 191–206. <http://dx.doi.org/10.1177/1073191104268029>
- Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., . . . Williams, J. M. (2008). Construct validity of the five facet mindfulness questionnaire in meditating and nonmeditating samples. *Assessment, 15*, 329–342. <http://dx.doi.org/10.1177/1073191107313003>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*, 191–215. <http://dx.doi.org/10.1037/0033-295X.84.2.191>
- Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*, 122–147. <http://dx.doi.org/10.1037/0003-066X.37.2.122>
- Barling, J. (2014). *The science of leadership: Lessons from research for organizational leaders*. New York, NY: Oxford University Press. <http://dx.doi.org/10.1093/acprof:oso/9780199757015.001.0001>
- Barling, J., & Cloutier, A. (2017). Leaders' mental health at work: Empirical, methodological, and policy directions. *Journal of Occupational Health Psychology, 22*, 394–406. <http://dx.doi.org/10.1037/ocp0000055>
- Barnes, C. M., Guarana, C. L., Nauman, S., & Kong, D. T. (2016). Too tired to inspire or be inspired: Sleep deprivation and charismatic leadership. *Journal of Applied Psychology, 101*, 1191–1199. <http://dx.doi.org/10.1037/apl0000123>
- Baron, R. A. (1990). Environmentally induced positive affect: Its impact on self-efficacy, task performance, negotiation, and conflict. *Journal of Applied Social Psychology, 20*, 368–384. <http://dx.doi.org/10.1111/j.1559-1816.1990.tb00417.x>
- Barrios, F. X. (1985). A comparison of global and specific estimates of self-control. *Cognitive Therapy and Research, 9*, 455–469. <http://dx.doi.org/10.1007/BF01173093>
- Barsade, S. G., & Gibson, D. E. (2007). Why does affect matter in organizations? *The Academy of Management Perspectives, 21*, 36–59. <http://dx.doi.org/10.5465/amp.2007.24286163>
- Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). Mahwah, NJ: Erlbaum.
- Becker, T. E., Atinc, G., Breaugh, J. A., Carlson, K. D., Edwards, J. R., & Spector, P. E. (2016). Statistical control in correlational studies: 10 essential recommendations for organizational researchers. *Journal of Organizational Behavior, 37*, 157–167. <http://dx.doi.org/10.1002/job.2053>
- Bono, J. E., & Judge, T. A. (2004). Personality and transformational and transactional leadership: A meta-analysis. *Journal of Applied Psychology, 89*, 901–910. <http://dx.doi.org/10.1037/0021-9010.89.5.901>
- Bowen, S., Chawla, N., Collins, S. E., Witkiewitz, K., Hsu, S., Grow, J., . . . Marlatt, A. (2009). Mindfulness-based relapse prevention for substance use disorders: A pilot efficacy trial. *Substance Abuse, 30*, 295–305. <http://dx.doi.org/10.1080/08897070903250084>
- Bower, G. H. (1981). Mood and memory. *American Psychologist, 36*, 129–148. <http://dx.doi.org/10.1037/0003-066X.36.2.129>
- Brown, J. (1984). Effects of induced mood on causal attributions for success and failure. *Motivation and Emotion, 8*, 343–353. <http://dx.doi.org/10.1007/BF00991872>
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*, 822–848. <http://dx.doi.org/10.1037/0022-3514.84.4.822>
- Campbell, D. T., & Stanley, J. C. (1966). *Experimental and quasi-experimental designs for research*. Chicago, IL: Rand-McNally.
- Chan, K.-Y., & Drasgow, F. (2001). Toward a theory of individual differences and leadership: Understanding the motivation to lead. *Journal of Applied Psychology, 86*, 481–498. <http://dx.doi.org/10.1037/0021-9010.86.3.481>

- Chemers, M. M., Watson, C. B., & May, S. T. (2000). Dispositional affect and leadership effectiveness: A comparison of self-esteem, optimism and efficacy. *Personality and Social Psychology Bulletin*, 26, 267–277. <http://dx.doi.org/10.1177/0146167200265001>
- Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a New General Self-Efficacy Scale. *Organizational Research Methods*, 4, 62–83. <http://dx.doi.org/10.1177/109442810141004>
- Chi, N. W., Chung, Y. Y., & Tsai, W. C. (2011). How do happy leaders enhance team success? The mediating roles of transformational leadership, group affective tone, and team processes. *Journal of Applied Social Psychology*, 41, 1421–1454. <http://dx.doi.org/10.1111/j.1559-1816.2011.00767.x>
- Chiesa, A., & Serretti, A. (2011). Mindfulness based cognitive therapy for psychiatric disorders: A systematic review and meta-analysis. *Psychiatry Research*, 187, 441–453. <http://dx.doi.org/10.1016/j.psychres.2010.08.011>
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112, 155–159. <http://dx.doi.org/10.1037/0033-2909.112.1.155>
- Courtright, S. H., Colbert, A. E., & Choi, D. (2014). Fired up or burned out? How developmental challenge differentially impacts leader behavior. *Journal of Applied Psychology*, 99, 681–696. <http://dx.doi.org/10.1037/a0035790>
- Cozzarelli, C. (1993). Personality and self-efficacy as predictors of coping with abortion. *Journal of Personality and Social Psychology*, 65, 1224–1236. <http://dx.doi.org/10.1037/0022-3514.65.6.1224>
- Cropanzano, R., & Wright, T. A. (2001). When a “happy” worker is really a “productive” worker: A review and further refinement of the happy-productive worker thesis. *Consulting Psychology Journal: Practice and Research*, 53, 182–199. <http://dx.doi.org/10.1037/1061-4087.53.3.182>
- Damen, F., Van Knippenberg, B., & Van Knippenberg, D. (2008). Affective match in leadership: Leader emotional displays, follower positive affect, and follower performance. *Journal of Applied Social Psychology*, 38, 868–902. <http://dx.doi.org/10.1111/j.1559-1816.2008.00330.x>
- Desharnais, R., Godin, G., Jobin, J., Valois, P., & Ross, A. (1990). Optimism and health-relevant cognitions after a myocardial infarction. *Psychological Reports*, 67(Suppl.), 1131–1135.
- Ehde, D. M., Dillworth, T. M., & Turner, J. A. (2014). Cognitive-behavioral therapy for individuals with chronic pain: Efficacy, innovations, and directions for research. *American Psychologist*, 69, 153–166. <http://dx.doi.org/10.1037/a0035747>
- Erisman, S. M., & Roemer, L. (2010). A preliminary investigation of the effects of experimentally induced mindfulness on emotional responding to film clips. *Emotion*, 10, 72–82. <http://dx.doi.org/10.1037/a0017162>
- Fleener, J. W., Smither, J. W., Atwater, L. E., Braddy, P. W., & Sturm, R. E. (2010). Self-other rating agreement in leadership: A review. *The Leadership Quarterly*, 21, 1005–1034. <http://dx.doi.org/10.1016/j.leaqua.2010.10.006>
- George, J. M. (1991). State or trait: Effects of positive mood on prosocial behaviors at work. *Journal of Applied Psychology*, 76, 299–307. <http://dx.doi.org/10.1037/0021-9010.76.2.299>
- George, J. M., & Brief, A. P. (1996). Motivational agendas in the workplace: The effects of feelings on focus of attention and work motivation. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior* (Vol. 18, pp. 75–109). Greenwich, CT: JAI Press.
- Giluk, T. L. (2009). Mindfulness, Big Five personality, and affect: A meta-analysis. *Personality and Individual Differences*, 47, 805–811. <http://dx.doi.org/10.1016/j.paid.2009.06.026>
- Glomb, T. M., Duffy, M. K., Bono, J. E., & Yang, T. (2011). Mindfulness at work. In M. R. Buckley, J. R. B. Halbesleben, & A. R. Wheeler (Eds.), *Personnel and human resources management* (pp. 115–157). Bingley, United Kingdom: Emerald. [http://dx.doi.org/10.1108/S0742-7301\(2011\)0000030005](http://dx.doi.org/10.1108/S0742-7301(2011)0000030005)
- Good, D. J., Lyddy, C. J., Glomb, T. M., Bono, J. E., Brown, K. W., Duffy, M. K., . . . Lazar, S. W. (2016). Contemplating mindfulness at work: An integrative review. *Journal of Management*, 42, 114–142. <http://dx.doi.org/10.1177/0149206315617003>
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis*. New York, NY: Guilford Press.
- Hobfoll, S. E. (1989). Conservation of resources. A new attempt at conceptualizing stress. *American Psychologist*, 44, 513–524. <http://dx.doi.org/10.1037/0003-066X.44.3.513>
- Hofmann, S. G., Sawyer, A. T., Witt, A. A., & Oh, D. (2010). The effect of mindfulness-based therapy on anxiety and depression: A meta-analytic review. *Journal of Consulting and Clinical Psychology*, 78, 169–183. <http://dx.doi.org/10.1037/a0018555>
- Hom, H. L., Jr., & Arbuckle, B. (1988). Mood induction effects upon goal setting and performance in young children. *Motivation and Emotion*, 12, 113–122. <http://dx.doi.org/10.1007/BF00992168>
- Hülsheger, U. R., Alberts, H. J. E. M., Feinholdt, A., & Lang, J. W. B. (2013). Benefits of mindfulness at work: The role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction. *Journal of Applied Psychology*, 98, 310–325. <http://dx.doi.org/10.1037/a0031313>
- Hülsheger, U. R., Feinholdt, A., & Nübold, A. (2015). A low-dose mindfulness intervention and recovery from work: Effects on psychological detachment, sleep quality and sleep duration. *Journal of Occupational and Organizational Psychology*, 88, 464–489. <http://dx.doi.org/10.1111/joop.12115>
- Hyland, P. K., Lee, R. A., & Mills, M. K. (2015). Mindfulness at work: A new approach to improving individual and organizational performance. *Industrial and Organizational Psychology: Perspectives on Science and Practice*, 8, 576–602. <http://dx.doi.org/10.1017/iop.2015.41>
- Jin, S., Seo, M. G., & Shapiro, D. L. (2016). Do happy leaders lead better? Affective and attitudinal antecedents of transformational leadership. *The Leadership Quarterly*, 27, 64–84. <http://dx.doi.org/10.1016/j.leaqua.2015.09.002>
- Jislin-Goldberg, T., Tanay, G., & Bernstein, A. (2012). Mindfulness and positive affect: Cross-sectional, prospective intervention, and real-time relations. *The Journal of Positive Psychology*, 7, 349–361. <http://dx.doi.org/10.1080/17439760.2012.700724>
- Joseph, D. L., Dhanani, L. Y., Shen, W., McHugh, B. C., & McCord, M. A. (2015). Is a happy leader a good leader? A meta-analytic investigation of leader trait affect and leadership. *The Leadership Quarterly*, 26, 557–576. <http://dx.doi.org/10.1016/j.leaqua.2015.04.001>
- Judge, T. A., Jackson, C. L., Shaw, J. C., Scott, B. A., & Rich, B. L. (2007). Self-efficacy and work-related performance: The integral role of individual differences. *Journal of Applied Psychology*, 92, 107–127. <http://dx.doi.org/10.1037/0021-9010.92.1.107>
- Kabat-Zinn, J., & Hanh, T. N. (2009). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. New York, NY: Dell Publishing.
- Kachan, D., Olano, H., Tannenbaum, S. L., Annane, D. W., Mehta, A., Arheart, K. L., . . . Lee, D. J. (2017). Prevalence of mindfulness practices in the U.S. workforce: National health interview survey. *Preventing Chronic Disease*, 14, E01–E06. <http://dx.doi.org/10.5888/pcd14.160034>
- Kavanagh, D. J., & Bower, G. H. (1985). Mood and self-efficacy: Impact of joy and sadness on perceived capabilities. *Cognitive Therapy and Research*, 9, 507–525. <http://dx.doi.org/10.1007/BF01173005>
- Langer, E. J., & Moldoveanu, M. (2000). The construct of mindfulness. *Journal of Social Issues*, 56, 1–9. <http://dx.doi.org/10.1111/0022-4537.00148>
- Leroy, H., Anseel, F., Dimitrova, N. G., & Sels, L. (2013). Mindfulness, authentic functioning and work engagement: A growth modeling approach. *Journal of Vocational Behavior*, 82, 238–247. <http://dx.doi.org/10.1016/j.jvb.2013.01.012>
- Lewis, K. M. (2000). When leaders display emotion: How followers respond to negative emotional expression of male and female leaders.

- Journal of Organizational Behavior*, 21, 221–234. [http://dx.doi.org/10.1002/\(SICI\)1099-1379\(200003\)21:2<221::AID-JOB36>3.0.CO;2-0](http://dx.doi.org/10.1002/(SICI)1099-1379(200003)21:2<221::AID-JOB36>3.0.CO;2-0)
- Lim, B. C., & Ployhart, R. E. (2004). Transformational leadership: Relations to the five-factor model and team performance in typical and maximum contexts. *Journal of Applied Psychology*, 89, 610–621. <http://dx.doi.org/10.1037/0021-9010.89.4.610>
- Lomas, T., Medina, J. C., Ivztan, I., Rupprecht, S., Hart, R., & Eiroa-Orosa, J. (2017). The impact of mindfulness on well-being and performance in the workplace: An inclusive systematic review of the empirical literature. *European Journal of Work and Organizational Psychology*, 26, 492–513. <http://dx.doi.org/10.1080/1359432X.2017.1308924>
- Long, E. C., & Christian, M. S. (2015). Mindfulness buffers retaliatory responses to injustice: A regulatory approach. *Journal of Applied Psychology*, 100, 1409–1422. <http://dx.doi.org/10.1037/apl0000019>
- Lyubomirsky, S., King, L., & Diener, E. (2005). The benefits of frequent positive affect: Does happiness lead to success? *Psychological Bulletin*, 131, 803–855. <http://dx.doi.org/10.1037/0033-2909.131.6.803>
- MacKillop, J., & Anderson, E. J. (2007). Further psychometric validation of the Mindful Attention Awareness Scale (MAAS). *Journal of Psychopathology and Behavioral Assessment*, 29, 289–293. <http://dx.doi.org/10.1007/s10862-007-9045-1>
- McCormick, M. J., Tanguma, J., & López-Forment, A. S. (2002). Extending self-efficacy theory to leadership. *The Journal of Leadership Studies*, 9, 34–49.
- McNulty, J. K., & Fincham, F. D. (2012). Beyond positive psychology? Toward a contextual view of psychological processes and well-being. *American Psychologist*, 67, 101–110. <http://dx.doi.org/10.1037/a0024572>
- Ng, K.-Y., Ang, S., & Chan, K.-Y. (2008). Personality and leader effectiveness: A moderated mediation model of leadership self-efficacy, job demands, and job autonomy. *Journal of Applied Psychology*, 93, 733–743. <http://dx.doi.org/10.1037/0021-9010.93.4.733>
- Paglis, L. L., & Green, S. H. (2002). Leadership self-efficacy and managers' motivation for leading change. *Journal of Organizational Behavior*, 23, 215–235. <http://dx.doi.org/10.1002/job.137>
- Pajares, F., & Graham, L. (1999). Self-efficacy, motivation constructs, and mathematics performance of entering middle school students. *Contemporary Educational Psychology*, 24, 124–139. <http://dx.doi.org/10.1006/ceps.1998.0991>
- Parker, S. K. (1998). Enhancing role breadth self-efficacy: The roles of job enrichment and other organizational interventions. *Journal of Applied Psychology*, 83, 835–852. <http://dx.doi.org/10.1037/0021-9010.83.6.835>
- Peters, J. R., Smart, L. M., Eisenlohr-Moul, T. A., Geiger, P. J., Smith, G. T., & Baer, R. A. (2015). Anger rumination as a mediator of the relationship between mindfulness and aggression: The utility of a multidimensional mindfulness model. *Journal of Clinical Psychology*, 71, 871–884. <http://dx.doi.org/10.1002/jclp.22189>
- Podsakoff, P. M., MacKenzie, S. B., & Bommer, W. H. (1996). Transformational leader behaviors and substitutes for leadership as determinants of employee satisfaction, commitment, trust, and organizational citizenship behaviors. *Journal of Management*, 22, 259–298.
- Preacher, K. J., & Kelley, K. (2011). Effect size measures for mediation models: Quantitative strategies for communicating indirect effects. *Psychological Methods*, 16, 93–115. <http://dx.doi.org/10.1037/a0022658>
- Reb, J., Narayanan, J., & Chaturvedi, S. (2014). Leading mindfully: Two studies on the influence of supervisor trait mindfulness on employee well-being and performance. *Mindfulness*, 5, 36–45. <http://dx.doi.org/10.1007/s12671-012-0144-z>
- Roche, M., Haar, J. M., & Luthans, F. (2014). The role of mindfulness and psychological capital on the well-being of leaders. *Journal of Occupational Health Psychology*, 19, 476–489. <http://dx.doi.org/10.1037/a0037183>
- Rubin, R. S., Munz, D. C., & Bommer, W. H. (2005). Leading from within: The effects of emotion recognition and personality on transformational leadership behavior. *Academy of Management Journal*, 48, 845–858. <http://dx.doi.org/10.5465/amj.2005.18803926>
- Sadri, G., & Robertson, I. T. (1993). Self-efficacy and work-related behavior: A review and meta-analysis. *Applied Psychology*, 42, 139–152. <http://dx.doi.org/10.1111/j.1464-0597.1993.tb00728.x>
- Sansom, D., & Rachman, S. (1989). The effect of induced mood on fear reduction. *British Journal of Clinical Psychology*, 28, 227–238. <http://dx.doi.org/10.1111/j.2044-8260.1989.tb01372.x>
- Schutte, N. S. (2014). The broaden and build process: Positive affect, ratio of positive to negative affect and general self-efficacy. *The Journal of Positive Psychology*, 9, 66–74. <http://dx.doi.org/10.1080/17439760.2013.841280>
- Sedlmeier, P., Eberth, J., Schwarz, M., Zimmermann, D., Haarig, F., Jaeger, S., & Kunze, S. (2012). The psychological effects of meditation: A meta-analysis. *Psychological Bulletin*, 138, 1139–1171. <http://dx.doi.org/10.1037/a0028168>
- Snippe, E., Nyklíček, I., Schroevers, M. J., & Bos, E. H. (2015). The temporal order of change in daily mindfulness and affect during mindfulness-based stress reduction. *Journal of Counseling Psychology*, 62, 106–114. <http://dx.doi.org/10.1037/cou0000057>
- Stajkovic, A. D., & Luthans, F. (1998). Self-efficacy and work-related performance: A meta-analysis. *Psychological Bulletin*, 124, 240–261. <http://dx.doi.org/10.1037/0033-2909.124.2.240>
- Ussher, M., Spatz, A., Copland, C., Nicolaou, A., Cargill, A., Amini-Tabrizi, N., & McCracken, L. M. (2014). Immediate effects of a brief mindfulness-based body scan on patients with chronic pain. *Journal of Behavioral Medicine*, 37, 127–134. <http://dx.doi.org/10.1007/s10865-012-9466-5>
- Verdorfer, A. P. (2016). Examining mindfulness and its relations to humility, motivation to lead, and actual servant leadership behaviors. *Mindfulness*, 7, 950–961. <http://dx.doi.org/10.1007/s12671-016-0534-8>
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54, 1063–1070. <http://dx.doi.org/10.1037/0022-3514.54.6.1063>
- Widdicombe, L. (2015, July 6). The higher life. *The New Yorker*. Retrieved from <http://www.newyorker.com/magazine/2015/07/06/the-higher-life>
- Wong, S. Y. S., Chan, F. W. K., Wong, R. L. P., Chu, M. C., Kitty Lam, Y. Y., Mercer, S. W., & Ma, S. H. (2011). Comparing the effectiveness of mindfulness-based stress reduction and multidisciplinary intervention programs for chronic pain: A randomized comparative trial. *The Clinical Journal of Pain*, 27, 724–734. <http://dx.doi.org/10.1097/AJP.0b013e3182183c6e>
- Wright, J., & Mischel, W. (1982). Influence of affect on cognitive social learning person variables. *Journal of Personality and Social Psychology*, 43, 901–914. <http://dx.doi.org/10.1037/0022-3514.43.5.901>

Received September 25, 2017

Revision received May 9, 2018

Accepted May 13, 2018 ■