

Maintaining An Even Keel: An Affect-Mediated Model of Mindfulness and Hostile Work Behavior

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Mindfulness, defined in terms of greater attention to and awareness of the present moment, may benefit equanimity both outside and inside the workplace. Two studies (total $N = 224$) of part-time employees supported this idea. Employees who were higher in dispositional mindfulness were less Machiavellian (Study 1), and they engaged in fewer counterproductive work behaviors (CWBs; Study 2). Furthermore, and consistent with an emotion-related theory of mindfulness, these inverse relationships were mediated by hostile feelings such as irritation and anger. That is, mindful people were less hostile in their behaviors in part because they were less prone to hostile feelings. The results suggest that mindfulness may be an efficacious state in reducing hostile feelings and behaviors at work. More generally, they contribute to an emotion-related perspective of mindfulness and some of its behavioral consequences.

Keywords: mindfulness, emotion, Machiavellianism, counterproductive work behavior

Mindfulness is both a very old and fairly new construct. Its description can be traced back 2,500 years to the Buddhist Pali texts (Kabat-Zinn, 1982), but its earnest empirical examination has occurred in the last 15 years or so (Brown & Ryan, 2004). Mindfulness can be defined as a state in which there is receptive and open attention to present-moment experience (Bishop et al., 2004). The percentage of time spent in this state can be increased by meditation practice (Grossman, Niemann, Schmidt, & Walach, 2004), but also naturally varies in a dispositional manner (Baer, Smith, & Allen, 2004). That is, some people are naturally more mindful than others (Brown & Ryan, 2003). In support of this dispositional approach to mindfulness, the correlates of this trait overlap with the effects of meditation experience (Brown, Ryan, & Creswell, 2007; Goodman, Quaglia, & Brown, in press) and mindfulness-based interventions appear to work in part because they increase dispositional mindfulness (Carmody & Baer, 2008; Shapiro, Oman, Thoresen, Plante, & Flinders, 2008).

From one perspective, perceiving and attending to what is currently happening seems a relatively modest achievement. Yet, it is one that has been linked to a number of beneficial outcomes. Mindfulness has been linked to higher levels of subjective well-being (Brown et al., 2007) and to greater authenticity (Kernis & Goldman, 2006). Self-related benefits appear to include self-esteem (Goldin, Ramel, & Gross, 2009), self-compassion (Leary, Tate, Adams, Batts Allen, & Hancock, 2007), and self-control (Barnes, Brown, Krusemark, Campbell, & Rogge, 2007). Mind-

ful people are viewed as less defensive (Kernis & Goldman, 2006), and there is evidence for this point in relation to terrorism management processes (Niemiec et al., 2010). Of clinical relevance, mindfulness predicts treatment adherence (Heppner, Adams, Vidrine, & Wetter, in press), and it is inversely predictive of anxiety and depression symptoms (Desrosiers, Vine, Klemanski, & Nolen-Hoeksema, 2013). As a result, mindfulness is the target of a number of clinical interventions (Gratz & Tull, 2010), which in fact have been shown to be helpful (Hölzel et al., 2011; Roemer & Orsillo, 2003).

Why is mindfulness generally beneficial? A potentially compelling idea is that the equanimity (Kabat-Zinn, 2005) of the mindful state reduces emotional reactivity (Baer, 2003), which in turn accounts for many of the benefits of mindfulness. There is evidence consistent with this account. Arch and Craske (2010) found that people higher in dispositional mindfulness experienced less anxiety in response to a physiological challenge (also see Bullis, Bøe, Asnaani, & Hofmann, 2014). Mindfulness has additionally been shown to buffer reactivity to social challenges such as existential threats (Niemiec et al., 2010) or negative feedback (Leary et al., 2007). This buffering appears to extend to physiological outcomes in that Brown, Weinstein, and Creswell (2012) found lesser cortisol reactivity in a Trier stress test among participants higher in dispositional mindfulness (with similar results for interventions; Carlson, Speca, Faris, & Patel, 2007). In neural terms, Taren, Creswell, and Gianaros (2013) reported a negative correlation between trait mindfulness and gray matter volume in the amygdala, and Goldin and Gross (2010) observed lesser amygdala activity following a mindfulness intervention. Even within half a second of stimulus exposure, there is evidence for reduced emotional reactivity as a function of higher levels of mindfulness (Brown, Goodman, & Inzlicht, 2013).

An emerging body of work, then, links higher levels of mindfulness to lower levels of negative emotion (Heppner et al., in press). Less examined is the possibility that this emotional path-

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way may actually explain or account for a number of the benefits of mindfulness. For example, mindfulness may promote subjective well-being (Brown et al., 2007) because it reduces negative emotion, which undermines subjective well-being (Diener, Suh, Lucas, & Smith, 1999). More formally, we offer an *affect-mediation* model of at least some mindfulness-outcome relationships: Emotional experiences may transmit or mediate some of the beneficial effects of higher levels of mindfulness. Thus far, evidence of this type has primarily come from the addiction literature, in which it has been shown that mindful people smoke less (Black, Sussman, Johnson, & Milam, 2012) or achieve abstinence (Heppner et al., in press) in part because of the inverse relationship between mindfulness and negative affect. Whether an affect-mediational model can explain some other benefits of mindfulness is largely unknown.

In the clinical literature, mindfulness-based interventions typically target symptoms of anxiety and depression (Gratz & Tull, 2010). Yet, and as noted by Wright, Day, and Howells (2009), mindfulness may be particularly suited to mitigate tendencies toward anger and aggression. The “being” aspect of mindfulness (Williams, 2010) should counteract unmitigated approach strivings, which are thought to underlie some forms of anger and aggression (Carver & Harmon-Jones, 2009). The open receptivity attributed to mindfulness (Bishop et al., 2004) would seem inconsistent with very strong reactions to frustration or provocation, which are core to the emotional aggression construct (Berkowitz, 1993). Egoism has been identified as a contributor to some forms of aggression (Bushman & Baumeister, 1998), and mindfulness is thought to quiet the ego (Leary et al., 2007; Wayment, Wiist, Sullivan, & Warren, 2011). Finally, mindfulness involves continually turning toward the present (Brown & Ryan, 2004), which should lessen anger and aggression by lessening anger-ruminative processes (Borders, Earleywine, & Jajodia, 2010). Consistent with these ideas, Singh et al. (2007) found that mindfulness-based exercises reduced aggressive behaviors among psychiatric patients, and Heppner et al. (2008) found that mindfulness buffered the impact of social rejection on a laboratory aggression measure.

In addition to the above foci, we sought to link dispositional mindfulness to outcomes possessing organizational significance. The organizational literature has theorized that mindfulness may be beneficial at work, and mindfulness training programs are reasonably common in corporate and university settings, but there is a lack of relevant basic research (Dane, 2011; Jordan, Messner, & Becker, 2009). Nonetheless, general models of emotion (e.g., Lazarus, 1991) and of anger and aggression (e.g., Berkowitz, 1993) have been successfully applied in understanding employee behaviors (Organ, 1988; Spector, 2011), and individual differences in hostile work behavior are also pronounced (Robinson & Bennett, 1995; Spain, Harms, & LeBreton, 2014). The organizational literature, like the aggression literature more generally, has tended to concentrate on personality factors that exacerbate hostile tendencies (Spector, 2011), but mindfulness may be an important factor that mitigates them (Meier & Wilkowski, 2013). We sought to examine this possibility, beginning with the hostile or “dark” behaviors captured by Machiavellianism (Wu & LeBreton, 2011).

Machiavellianism and Counterproductive Work Behaviors

Christie and Geis (1970) drew attention to Machiavellianism (sometimes Mach) as a dispositional construct and proposed that it consists of several traits or tendencies. Befitting its “dark” designation, Machiavellian people are thought to have a hostile, cynical view of other people and the world (Hunter, Gerbing, & Boster, 1982). Perhaps because of this, they endorse competitive, self-interested behavior (Wilson, Near, & Miller, 1996). In terms of personality features, Machiavellian people (or those higher on the dimension of Machiavellianism) are disagreeable (Paulhus & Williams, 2002), mistrusting (Sakalaki, Richardson, & Thepaut, 2007), and exploitative (Lee et al., 2013). Behaviorally, higher levels of Mach have been linked to defection in trust games (Gunthorsdottir, McCabe, & Smith, 2002), to intimidation tactics (Whitaker & Dahling, 2013), and to the unholy triumvirate of lying (Vleeming, 1979), cheating (Christie & Geis, 1970), and stealing (Harrell & Hartnagel, 1976).

Given this array of unfavorable characteristics, it is not surprising that Machiavellianism has garnered considerable interest in the organizational literature (Wu & LeBreton, 2011). Mach has been linked to the endorsement of unethical business practices (Mudrack, Bloodgood, & Turnley, 2012) and to job dissatisfaction (Bruk-Lee, Khoury, Nixon, Goh, & Spector, 2009). Of even more pertinence, Mach is a robust predictor of counterproductive work behaviors (CWBs)—that is, intentional behaviors that harm an organization and individuals within it (Bennett & Robinson, 2000). O’Boyle, Forsyth, Banks, and McDaniel (2012) recently established this relationship in meta-analytic terms and showed that it was evident across levels of job authority and cultures. Machiavellianism is thus a known risk factor for hostile work behaviors, one that is important to better understand.

Following Christie and Geis (1970), Machiavellians are sometimes depicted as long-term strategists. However, this may not be how Machiavellianism functions. Rather, Mach overlaps considerably with psychopathy (McHoskey, Worzel, & Szyarto, 1998; O’Boyle et al., 2012), and what is shared by both dispositions is a tendency toward reactive forms of antisocial behavior (McHoskey et al., 1998; Wilson et al., 1996). This analysis comports with models of reactive aggression emphasizing the triggering role of hostile thoughts (Berkowitz, 1993; Spector, 2011), which are prevalent among Machiavellians (Fehr, Samson, & Paulhus, 1992), and it is consistent with evidence for the impulsive nature of Machiavellian behaviors (Jonason, Li, Webster, & Schmitt, 2009; Wilson et al., 1996). Indeed, the CWBs that Machiavellians engage in (Wu & LeBreton, 2011) tend to be impulsively hostile (Spector, 2011). Factors incompatible with impulsive hostility might therefore be expected to protect against both Machiavellian tendencies and CWBs. For the reasons articulated above, we suggest that mindfulness may be one such factor.

Hypothesis 1: Mindfulness will inversely predict Machiavellian tendencies (Study 1).

Whereas Study 1 focuses on Machiavellian tendencies, Study 2 focuses on CWBs themselves. When so motivated, there are a number of ways that employees can “get back” at their employers and coworkers. Factor analyses have revealed that these behaviors fall into five categories: abuse, production deviance (e.g., deliber-

ately missing a deadline to frustrate others), sabotage, theft, and withdrawal (e.g., calling in sick when one is not sick) (Spector et al., 2006). Machiavellian people engage in these behaviors (O'Boyle et al., 2012; Spain et al., 2014), and they tend to do so when they are dissatisfied with their employer or with their work conditions (Skarlicki & Folger, 1997; Spector & Fox, 2002). In the same way that mindfulness should be protective against Machiavellian tendencies, we reasoned that it should be protective against taking rash actions that harm the company. In other words, we also hypothesized an inverse relationship between dispositional mindfulness and CWBs.

Hypothesis 2: Mindful people will engage in fewer CWBs (Study 2).

To provide a general theoretical context for the present research, we introduced an emotion-mediation model of mindfulness benefits. That is, we proposed that many of the benefits of mindfulness may follow from lower levels of negative emotionality. We also suggested that mindfulness may be particularly protective against hostile feelings like irritation and anger (Wright et al., 2009) and noted that hostile feelings play a prominent role in CWBs (Spector & Fox, 2002). Accordingly, the present studies tested an emotion-mediation model in which hostile feelings were proposed to mediate the relationship between mindfulness and both Machiavellian tendencies (Study 1) and CWBs (Study 2). The nonmindful employee, in other words, should be more prone to anger experiences at work, and they should be more prone to hostile work behaviors for this reason (see the top panel of Figure 1). Such considerations led to several hypotheses which, if supported, would contribute to

the dispositional mindfulness, emotion, and organizational literatures:

Hypothesis 3: Hostile affect will positively predict Machiavellian tendencies (Study 1).

Hypothesis 4: Hostile job affect will positively predict CWBs (Study 2).

Hypothesis 5: People higher in mindfulness will have less intense hostile feelings (both studies).

Hypothesis 6: Hostile affect will mediate relations between mindfulness and Machiavellian tendencies (Study 1).

Hypothesis 7: Hostile affect will mediate relations between mindfulness and CWBs (Study 2).

Overview of Studies

The benefits of mindfulness at work may include lesser tendencies toward hostile behavior. Study 1 examines this idea in the context of Machiavellianism, a major predictor of CWBs (O'Boyle et al., 2012). Study 2 then examines this idea in the context of actual CWBs. To boost sample sizes, and given the generalizability results of Fox, Spector, and Miles (2001), student employee samples were used. Individual differences were of major interest, and therefore, mindfulness was assessed in dispositional terms using the Mindful Attention and Awareness Scale (Brown & Ryan, 2003). This scale is unifactorial and assesses the core theoretical component of mindfulness—namely, greater awareness concerning momentary behaviors and experiences (Brown & Ryan, 2004). The scale does not ask about hostile feelings or behaviors and therefore relations would not be due to item overlap issues. Given the proposed mediating role of hostile affect, it was assessed either in general, state-related terms (Study 1) or in terms of hostile feelings on the job (Study 2). The results were expected to provide novel insights into hostility at work.

Study 1: Mindfulness and Machiavellian Tendencies

Theoretically, Mach encompasses individual differences in hostility, manipulation, and unethical behavior (McHoskey et al., 1998). Operationally, it is sometimes assessed by the Mach IV scale (Christie & Geis, 1970), but the Mach IV possesses some problems related to reliability and factor structure (Fehr et al., 1992; Vleeming, 1979). For these reasons, Study 1 instead assessed Machiavellianism using the improved measure of Dahling, Whitaker, and Levy (2008). In addition to improved reliabilities and an improved factor structure, Dahling et al. (2008) found that higher scores were predictive of higher levels of job stress, lower levels of job satisfaction, and higher levels of CWB. In Study 1, such Machiavellian tendencies were hypothesized to vary inversely with mindfulness.

Participants and Procedures

Data were collected in the context of an extra credit option for undergraduate students in a large college of business survey course at a midsized Midwestern university. Of the 181 completers, we retained 133 (54% female; 86% Caucasian; *M* age = 21.7) who

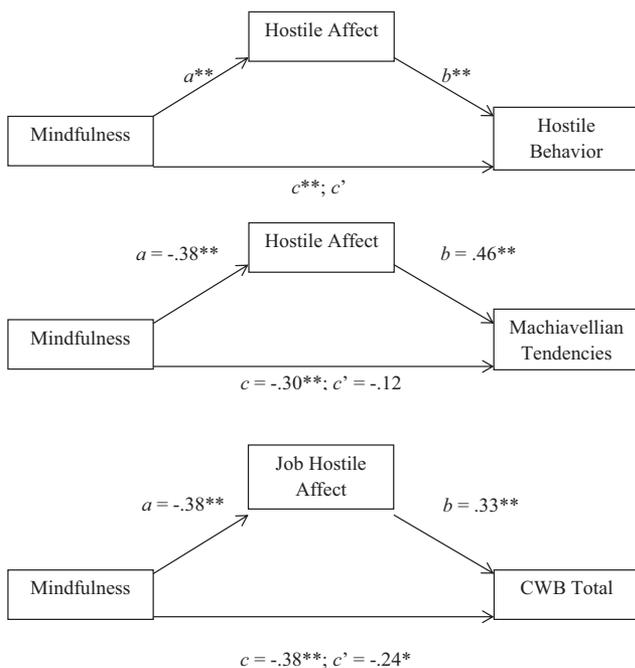


Figure 1. Hostile affect as a mediator of relations between mindfulness and hostile behavior, proposed model (top panel), Study 1 results (middle panel), and Study 2 results (bottom panel). * *p* < .05. ** *p* < .01.

were currently working at least part time. They averaged 22 hr of work per week ($SD = 9.8$) and had been at their current places of employment for an average of 16.5 months (range = 1–120). Areas of employment included accounting, customer service, health care, manufacturing, office management, retail, and sales.

To further characterize the sample and jobs, we administered a factual autonomy scale (FAS; Spector & Fox, 2003). The mean score was 3.69 ($SD = 0.82$) along a 1 to 5 scale, a number comparable with full-time employees from a norming sample (Spector & Fox, 2003) and indicative of some degree of latitude in determining day-to-day job activities. Data were collected online using a secure server and participant codes. Dispositional variations in mindfulness were assessed 10 days prior to the hostility-related outcomes.

Assessments

Dispositional mindfulness. People differ in present-focused awareness independent of meditation practice, and the Mindful Attention and Awareness Scale (MAAS; Brown & Ryan, 2003) was designed to capture such naturally occurring individual differences. It consists of 15 items (e.g., “I break or spill things because of carelessness, not paying attention, or thinking of something else” and “I do jobs or tasks automatically without being aware of what I’m doing,” both reverse-scored) that are rated in terms of how frequently they occur to the self (1 = *almost never*; 6 = *almost always*). The MAAS has a single factor that tracks and mediates the benefits of mindfulness-based interventions (Shapiro et al., 2008), covaries with mindfulness in daily life (Brown & Ryan, 2003), and predicts a wide range of neural and psychological outcomes in a valid, theory-consistent manner (Brown & Ryan, 2004; Brown et al., 2007; Goodman et al., in press). An average MAAS score was computed ($M = 3.86$; $SD = 0.87$; $\alpha = .89$).

Hostile affect. Watson and Clark (1994) extended the original Positive Affect Negative Affect Schedule (PANAS) scales (Watson, Clark, & Tellegen, 1988) to assess specific forms of positive and negative affect. The 5-item hostile affect scale assesses experiences of hostility, anger, and related feelings (e.g., “angry,” “hostile,” and “irritable”) and displays discriminant validity relative to more general measures of negative affect (Watson & Clark, 1994). Study 1 assessed the extent to which (1 = *very slightly or not at all*; 5 = *extremely*) participants tend to have these feelings in their daily lives ($M = 1.66$; $SD = 0.68$; $\alpha = .84$). The time frame chosen was the last 3 days, a time frame that avoids undue retrospection while possessing dispositional properties (Watson, 2000).

Machiavellian tendencies. Machiavellian tendencies can be characterized as hostile (Jones & Paulhus, 2011), and they are problematic in organizational settings (Wu & LeBreton, 2011), rendering such tendencies a useful initial focus. Participants completed the Machiavellian Personality Scale (MPS; Dahling et al., 2008), which asks individuals the extent to which (1 = *strongly disagree*; 7 = *strongly agree*) 16 items of a Machiavellian type are true of the self. For primary purposes, we computed a total score ($M = 2.35$; $SD = 1.09$; $\alpha = .87$), and for supplementary purposes also computed separate subscale scores for amoral manipulation (e.g., “I believe that lying is necessary to maintain a competitive advantage over others”), distrust (e.g., “Team members backstab

each other all the time to get ahead”), desire for control (e.g., “I enjoy having control over other people”), and desire for status (e.g., “I want to be rich and powerful someday”). Subscales were moderately intercorrelated (r values from .34 to .46), but mindfulness may be particularly protective against tendencies that are seemingly more (e.g., amoral behavior) relative to less (e.g., desire for control) hostile.

Results

Bivariate correlations are reported in Table 1. Hypothesis 5 was supported in an inverse relationship between mindfulness and hostile affect. Mindful people were also lower in Machiavellian tendencies, supporting hypothesis 1. Hostile feelings were hypothesized to contribute to, or at least predict, Machiavellian tendencies, and hypothesis 3 was supported by the positive correlation between hostile feelings and Mach scores. In sum, zero-order relations among the variables indicate that people who are mindful feel less hostile, and feeling less hostile is, in turn, predictive of lesser Machiavellian tendencies.

Going further, mindfulness should reduce Machiavellian tendencies *because* it reduces the occurrence of hostile affect (hypothesis 6). This mediation hypothesis was examined using the PROCESS macro of Hayes (2013) and consisted of three regression models, the results of which are reported in Table 2. Model 1 found an inverse relationship between mindfulness and hostile affect, the proposed mediator. This pathway is designated as *a* in the middle panel of Figure 1. Model 2 predicted Machiavellian tendencies on the basis of both mindfulness and hostile affect. In this model, hostile affect was a significant predictor (pathway *b* in the middle panel of Figure 1), and mindfulness was not a significant predictor (coefficient *c*). On the other hand, Model 3 indicates that mindfulness was a significant predictor of Machiavellian tendencies when hostile affect was not controlled (coefficient *c* in the middle panel of Figure 1).

There thus appears to be an indirect (mediation) effect of mindfulness on Machiavellian tendencies through (lesser) hostile affect. The significance of this indirect path was examined using the PROCESS macro of Hayes (2013). More specifically, a 95% bias-corrected confidence interval (BCCI) for the mediation-related *ab* pathway (see Figure 1) was calculated on the basis of 10,000 bootstrap samples. The mean indirect effect was $-.17$, and the 95% BCCI was $-.30$ to $-.08$. Because the BCCI excludes 0, the indirect effect is significant (MacKinnon & Fairchild, 2009). Hostile affect, that is, mediated the effect of mindfulness on Machiavellian tendencies. This was equally true of men and women in that participant sex did not moderate the relationship between mindfulness and hostile affect ($\beta = .12$, $t = 1.26$, $p = .21$). Finally, a comparison of the *ab* and *c* pathways (Hayes, 2013)

Table 1
Correlations Among Variables, Study 1

Variable	<i>M</i>	<i>SD</i>	1	2	3
1. Mindfulness	3.86	0.87	(.89)		
2. Hostile affect	1.66	0.68	-.38**	(.84)	
3. Machiavellianism	3.47	0.86	-.30**	.51**	(.87)

** $p < .01$.

Table 2
Regression Results, Study 1

Model	Predictor	β	SE	<i>t</i>	<i>p</i>
Model 1					
Outcome = Host.	Mind.	-.38	.08	-4.36	.00
Model 2					
Outcome = Mach.	Host.	.46	.08	5.78	.00
	Mind.	-.12	.08	-1.59	.11
Model 3					
Outcome = Mach.	Mind.	-.30	.08	-3.64	.00

Note. Mind. = mindfulness; Host. = hostile affect; Mach. = Machiavellian tendencies. Model 1: $R^2 = .14$, $F = 21.47$, $df = 1, 131$, $p < .00$. Model 2: $R^2 = .28$, $F = 24.94$, $df = 2, 130$, $p < .00$. Model 3: $R^2 = .09$, $F = 13.24$, $df = 1, 131$, $p < .00$.

indicated that 58% of the effect of mindfulness on Machiavellian tendencies, relative to the total effect, was mediated by hostile affect.

As another way of examining mediation hypothesis 6, we turned to the Mach subscales. Mindfulness should be an inverse predictor of Machiavellian tendencies to the extent that those tendencies are driven by, or at least predicted by, hostile affect. Hostile affect predicted more variance in amoral manipulation, $r = .49$, $p < .01$, and distrust, $r = .44$, $p < .01$, than desire for control, $r = .27$, $p < .01$, and desire for status, $r = .27$, $p < .01$. The mediation path (*ab*) should therefore be stronger for the former two subscales than the latter two. As shown in Table 3 (left columns), this reasoning was supported, though significant mediation (as indicated by the BCCI ranges) was obtained for all four Mach subscales. Mindfulness is therefore generally protective against Machiavellian tendencies.

Study 2: Mindfulness and CWB

Machiavellian tendencies are problematic at work (Dahling et al., 2008), and Study 1 showed that such tendencies were less pronounced at higher levels of mindfulness. Furthermore, a mediating role for hostile affect was found, providing further insights into both mindfulness and Machiavellianism. Nonetheless, we recognize that the affect measure was not work-specific and that Machiavellian tendencies can be exhibited outside as well as inside the context of work. Furthermore, and although Machiavellianism is a robust predictor of CWB (O’Boyle et al., 2012), it would be useful to more directly assess these behaviors. Study 2 did so using the Spector et al. (2006) checklist. We hypothesized an inverse relationship between mindfulness and CWB and further hypothesized that individual differences in hostile affect on the job would mediate this relationship.

Participants and Procedures

The Study 2 sample consisted of 91 (53% female; 86% Caucasian; *M* age = 21.1) psychology undergraduates at a midsized Midwestern university seeking to fulfill a course requirement. They had to be working at least 20 hr per week at a single job to participate. Types of employment (e.g., customer service) overlapped substantially with those of Study 1, and the average job tenure was 15.4 months (range = 1–108). The mean factual autonomy score was 3.57 (*SD* = 0.89), a level of autonomy

comparable with full-time employees (Spector & Fox, 2003). Procedures involved online data collection.

Assessments

Dispositional mindfulness. Dispositional variations in mindfulness were again assessed with the MAAS (*M* = 2.95; *SD* = 0.99; $\alpha = .94$).

Job hostile affect. Study 2 sought to assess hostile feelings on the job rather than more generally. Toward this end, we identified the hostility markers (Watson & Clark, 1994) of the Job Affective Well-Being Scale (JAWS; Van Katwyk, Fox, Spector, & Kelloway, 2000) and used these to quantify job hostile affect within the JAWS architecture. Participants were asked how often (1 = *never*; 5 = *always*) they experienced three hostile feelings (“angry,” “disgusted,” and “furious”) at work during the course of the previous 30 days, and an average score was computed (*M* = 2.40; *SD* = 1.01; $\alpha = .84$).

CWBs. CWBs are behaviors that detract from workplace productivity, civility, and company effectiveness (Jermier, Knights, & Nord, 1994). They are conceptualized as intentional rather than accidental yet often appear impulsively hostile (Skarlicki & Folger, 1997). We sought to assess CWBs in a comprehensive manner and did so in terms of a well-validated 32-item checklist (Spector et al., 2006). The checklist encompasses behaviors related to abuse (e.g., “hit or pushed someone at work”), production deviance (e.g., “purposely worked slowly when things needed to get done”), and sabotage (e.g., “purposely damaged a piece of equipment or property”) as well as theft (e.g., “stole something belonging to your employer”) and withdrawal (e.g., “came to work late without permission”). Participants indicated the frequency (1 = *never*; 5 = *every day*) with which they performed these behaviors at work. The key outcome was a total CWB score (*M* = 1.40; *SD* = 0.63; $\alpha = .98$), but CWB subtypes will also be examined in follow-up analyses.

Results

Correlations among the mindfulness, job hostile affect, and CWB variables were computed, and these results are displayed in Table 4. There was a fairly sizable inverse relationship between mindfulness and CWB, a result of both theoretical and applied significance. The other correlations indicate a possible role for job hostile affect in understanding this inverse relationship in that (a) mindfulness was a negative predictor of job hostile affect, and (b) job hostile affect was a positive predictor of CWB frequencies.

Table 3
Mediation Results for Machiavellian Tendency Subscales, Study 1

Outcome	<i>ab</i>	95% BCCI	<i>c'</i>	95% BCCI
Amoral manipulation	-.17	-.31 to -.07	-.12	-.28 to .04
Distrust	-.14	-.25 to -.06	-.18	-.35 to -.02
Desire for control	-.10	-.20 to -.04	-.02	-.19 to .16
Desire for status	-.09	-.19 to -.04	-.02	-.20 to .16

Note. The *ab* coefficient represents the indirect path of mindfulness through hostile affect, and the *c'* coefficient captures the influences of mindfulness that are unmediated by hostile affect. BCCI = bias-corrected confidence interval.

Table 4
Correlations Among Variables, Study 2

Variable	<i>M</i>	<i>SD</i>	1	2	3
1. Mindfulness	2.95	0.99	(.94)		
2. Job hostile affect	2.40	1.01	-.38**	(.84)	
3. CWB total score	1.40	0.63	-.36**	.42**	(.98)

Note. CWB = counterproductive work behavior.
** $p < .01$.

To more formally examine the possibility of hostile affect mediation (hypothesis 7), the PROCESS macro and procedures of Hayes (2013) were used. Three regressions were conducted, the results of which are displayed in Table 5 and in the bottom panel of Figure 1. Model 1 indicated a significant path (*a* in the bottom panel of Figure 1) between mindfulness and job hostile affect. Model 2 further established a role for job hostile affect in predicting CWBs (pathway *b*) along with a nonmediated role for mindfulness (coefficient *c'*). Model 3, finally, established that mindfulness is a zero-order predictor of CWBs (coefficient *c*).

Whether significant mediation occurred was assessed using bootstrapping procedures parallel to Study 1 (and following Hayes, 2013). The mediation pathway from mindfulness to CWB (pathway *ab* in the bottom panel of Figure 1) had a mean of $-.12$ and a 95% BCCI of $-.25$ to $-.05$. As the confidence interval excluded 0, significant mediation was found. Because participant sex did not moderate the relationship between mindfulness and job hostile affect ($\beta = .12, t = 1.14, p = .26$), the mediation model characterizes men and women equally well. On the other hand, 34% of the variance of the total effect of mindfulness on CWB could be explained by hostile affect, meaning that there were also other reasons why mindfulness was protective against CWB.

Certain forms of CWB (e.g., abuse) seem more hostile than others (e.g., withdrawal). Consistent with this idea, job hostile affect predicted more variance in abuse, $r = .44, p < .01$, production deviance, $r = .43, p < .01$, and sabotage, $r = .40, p < .01$, than theft, $r = .28, p < .01$, and withdrawal, $r = .27, p < .01$. Furthermore, bootstrapping means for the *ab* pathway were numerically higher for abuse, production deviance, and sabotage than theft and withdrawal, as indicated in the left columns of Table 6. These additional findings further converge on a role for job hostile affect in understanding the mindfulness/CWB relationship.

Table 5
Regression Results, Study 2

Model	Predictor	β	<i>SE</i>	<i>t</i>	<i>p</i>
Model 1					
Outcome = J. Host.	Mind.	-.38	.10	-3.85	.00
Model 2					
Outcome = CWB	J. Host.	.33	.10	3.25	.00
	Mind.	-.24	.10	-2.33	.02
Model 3					
Outcome = CWB	Mind.	-.36	.09	-3.65	.00

Note. Mind. = mindfulness; J. Host. = job hostile affect; CWB = counterproductive work behavior (total score). Model 1: $R^2 = .14, F = 14.77, df = 1, 90, p < .00$. Model 2: $R^2 = .22, F = 12.62, df = 2, 89, p < .00$. Model 3: $R^2 = .13, F = 13.29, df = 1, 90, p < .00$.

Table 6
Mediation Results for Different Forms of CWB, Study 2

Outcome	<i>ab</i>	95% BCCI	<i>c'</i>	95% BCCI
Abuse	-.14	-.27 to -.06	-.20	-.39 to .00
Production deviance	-.14	-.25 to -.06	-.23	-.43 to -.03
Sabotage	-.11	-.25 to -.03	-.27	-.47 to -.07
Theft	-.07	-.19 to -.04	-.26	-.47 to -.05
Withdrawal	-.07	-.17 to .00	-.23	-.45 to -.02

Note. The *ab* coefficient represents the indirect path of mindfulness through job hostile affect, and the *c'* coefficient captures the influences of mindfulness on CWBs that are unmediated by job hostile affect. BCCI = bias-corrected confidence interval.

Discussion

One of the benefits of the Study 2 design was that the outcomes were operationalized in a manner specific to the employment context. Because mindfulness was negatively related to both job hostile affect and CWBs, the Study 2 findings further the case for mindfulness as a protective factor in organizations. Indeed, although Machiavellian tendencies may occasionally be beneficial for some jobs (e.g., sales), the same cannot be said for CWBs (Jermier et al., 1994). Such considerations may help to explain why mindfulness continued to predict CWBs after levels of job hostile affect were controlled. Specifically, given the more obviously problematic nature of CWBs relative to the Study 1 outcomes, mindful people may avoid engaging in them for nonaffective as well as affective reasons. It is also possible that mindfulness may be particularly protective against CWBs due to their typically impulsive nature (Spector, 2011). If so, it would be useful to compare more and less impulsive hostile behaviors in future studies of mindfulness and its regulatory benefits.

General Discussion

With hostile feelings like anger, one can get caught up in motivations, actions, and reactions that are hurtful to others, impulsive, and self-defeating in the long term (Berkowitz, 1993; Wright et al., 2009). Mindfulness, through its core of attention and awareness, may create opportunities for a person to regulate such cycles of hostility in a manner not available to a less mindful person (Robertson, Daffern, & Bucks, 2012). Such ideas were pursued in the context of hostile work behaviors, which represent a major problem for organizational functioning (Jermier et al., 1994; LeBlanc & Kelloway, 2002). As hypothesized, people higher in mindfulness were less Machiavellian (Study 1), and they engaged in fewer CWBs (Study 2). These are important results, but we were also able to provide insight into the processes involved. Once anger has arisen, it can be difficult to control (Anderson & Bushman, 2002; Berkowitz, 1993). Mindfulness may work by circumventing such strong feelings before they occur (Teper, Segal, & Inzlicht, 2013). Consistent with these ideas, (a) mindfulness was negatively predictive of hostile feelings, (b) hostile feelings were positively predictive of hostile behaviors, and (c) lesser hostile feelings mediated mindfulness/hostile behavior relations. These mediation-based results provide nice support for emotion-related perspectives on mindfulness while extending the scope of mindfulness research to organization-relevant outcomes.

Implications, Questions, Limitations, and Future Directions

There are pronounced individual differences in CWBs (Spain et al., 2014), rendering it important to understand their dispositional basis. Given the modest predictive success of broad traits in this realm (Hastings & O'Neill, 2009), organizational scholars have encouraged the field to examine predictors that have a more targeted scope (Spector, 2011). One approach in doing so is to focus on constructs, such as Machiavellianism, that should predispose one toward, or exacerbate, hostile work behaviors (Wu & LeBreton, 2011). It may be equally useful, however, to focus on other factors that should protect against, or mitigate, these same tendencies. Just like aggression in general (Wilkowski & Robinson, 2010), that is, there are likely to be consequential regulatory influences on the extent to which one engages in CWBs. We suggest that mindfulness, which discourages acting impulsively (Brown & Ryan, 2004), is a key mitigating factor of this type.

Moreover, mindfulness is likely to be beneficial for other reasons as well. To be mindful means to be attentive to and aware of what one is currently doing (Brown & Ryan, 2004). This greater awareness may not speed performance, but it should reduce costly work-related errors (Reason, 1990). In addition, data are fairly strong in support of a positive relationship between mindfulness and subjective well-being (Brown & Ryan, 2003; Carmody & Baer, 2008). Given this general relationship, it seems likely that mindful people would be more satisfied with their jobs, which would in turn have some organizational benefits (Williams & Anderson, 1991). Other data suggest that mindfulness is helpful in coping with stressors (Arch & Craske, 2010; Brown et al., 2007), and this is likely to translate to how well people cope with the myriad obstacles that can occur when trying to solve instrumental tasks (Spector & Fox, 2002). In addition, our results support emotion-related perspectives of mindfulness (Heppner et al., *in press*) and organizational behavior (Barsade & Gibson, 2007), while providing some of the first evidence for the benefits of being a mindful employee (Dane, 2011).

It is not always clear why mindfulness has the benefits that it does (Hölzel et al., 2011; Roemer & Orsillo, 2003). In this connection, we suggest that an emotion-mediation framework, which appears explanatory for some addictive processes (Heppner et al., *in press*), may have more general utility. Our results were supportive of this idea in the context of lesser experiences of hostile affect (i.e., feelings of frustration and anger). As to why there is an inverse relationship between mindfulness and hostile affect, it is probably best to emphasize a cascade of relevant processes (also see Wright et al., 2009). Brown et al. (2013) suggest that mindfulness has a receptivity to it that very quickly (<1 s) robs unpleasant events of some of their sting. Teper et al. (2013) emphasize the role that awareness (and thus mindfulness) plays in allowing people to regulate problematic emotions before they become intense. Borders et al. (2010), finally, note that a recurrent focus on the present should reduce the anger rumination processes known to intensify these feelings and their resultant aggressive consequences (e.g., Bushman, Bonacci, Pedersen, Vasquez, & Miller, 2005). All told, then, there are multiple reasons why mindful people should typically experience less hostility.

Given this analysis, it would be informative to assess job events or conditions in future research. Data suggest that mindfulness

buffers reactivity to negative events (Arch & Craske, 2006; Heppner et al., 2008), and models of this buffering type are broadly endorsed (Baer, 2003; Brown et al., 2007). Correspondingly, one might expect mindfulness to become a more consequential predictor, for example of CWBs, as jobs become more stressful or onerous (Spector, 2011). Mindfulness is similarly likely to moderate the influence of problematic traits such as neuroticism (Feltman, Robinson, & Ode, 2009).

Mindfulness was assessed in terms of core features—namely, attention to and awareness of the present moment (Brown & Ryan, 2003). This greater attention and awareness is thought to be foundational to more downstream manifestations of mindfulness such as acceptance and nonreactivity (Williams, 2010). In addition, it is theoretically useful to protect the construct of mindfulness from becoming a heterogeneous collection of skills, some of which are better viewed as consequences of mindfulness rather than mindfulness itself (Brown & Ryan, 2004). Nonetheless, there are a few multidimensional assessments of mindfulness (e.g., Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006) that can be used in future studies.

Mindfulness, we think, should be particularly relevant in understanding hostile behaviors that occur in the context of hostile feelings. As Study 1 shows, this analysis does not preclude a focus on Machiavellianism but rather emphasizes the hostile nature of this construct and its operations (Hunter et al., 1982; McHoskey et al., 1998). In addition, the Study 2 results reinforce the idea that CWBs may frequently be driven by hostile feelings (Skarlicki & Folger, 1997; Spector, 2011). By contrast, to the extent that one could isolate hostile behaviors that are truly cold and calculating, our sense is that mindfulness may be less predictive of such behaviors. Subscale-level results from both studies point in this direction.

Both studies involved student samples, and this can be considered a limitation or at least an opportunity for future research. Even so, employees averaged over 20 hr of work per week, had jobs that had been held for over a year (on average), and had factual autonomy scores comparable with full-time employees (Spector & Fox, 2003). Furthermore, relations between job affect and CWBs, at least, have been shown to be quite comparable across student and nonstudent employee samples (Fox et al., 2001). As to whether the findings might vary by culture, this is an interesting possibility, but O'Boyle et al. (2012) found no moderating role for culture in understanding the personality/CWB relationship. The relations presently observed might therefore be expected to hold across cultures.

Although the posited ordering of variables is consistent with theory and evidence (Brown et al., 2007; Spector & Fox, 2005), replication with more longitudinal designs would constitute a valuable extension, particularly in understanding how changes in mindfulness might predict changes in hostile feelings and behaviors (MacKinnon & Fairchild, 2009). Furthermore, the results, in combination with previous research (Carmody & Baer, 2008; Shapiro et al., 2008), suggest that interventions designed to increase mindfulness in the workplace may be advocated, at least with respect to the outcomes examined. From a research standpoint though, it can be tricky to isolate mindfulness effects in such interventions (Brown et al., 2007), and our primary interest was dispositional rather than experimental.

Somewhat more broadly, we have suggested that reduced negative emotionality may transmit many of the benefits of mindfulness. This is a concrete proposal about mechanism that deserves further systematic research. For example, mindfulness appears beneficial in personal relationships (Barnes et al., 2007), and this may be because: (a) mindfulness reduces experiences of hostility (present studies), which (b) tend to be detrimental to personal relationships (Anderson & Bushman, 2002). Similarly, mindfulness may counteract tendencies toward violence (Wright et al., 2009) because it mitigates precipitating experiences (DeWall, Anderson, & Bushman, 2011) of anger and arousal. Indeed, our results suggest that mindfulness will be beneficial precisely when and if the relevant outcomes have a basis in negative emotional experiences. This would include physiological outcomes such as cortisol reactivity, clinical outcomes such as self-harming, and everyday behaviors such as stress-related eating. That is, an emotion-mediation framework can help us identify outcomes likely to vary by mindfulness while providing a mechanism-related account of why such relationships would be expected. As such, the framework has the potential to unify diverse streams of mindfulness-based research.

The present work also has implications for how we think about emotion. When the right circumstances occur, it is thought, people almost necessarily react in an emotional manner (Smith & Lazarus, 2001). Mindfulness, as a curious and welcoming metacognitive state (Bishop et al., 2004), appears to short-circuit the automaticity of these reactions (Brown et al., 2013). Interestingly, it may not primarily do so through the use of effortful or strategic emotion regulation strategies (Chambers, Gullone, & Allen, 2009). Rather, the awareness of the mindful state seems to accomplish emotion regulation without emotion regulation being the goal of the individual (Baer, 2003; Hölzel et al., 2011). Instead, emotion regulation may occur through lesser ego attachment (Leary et al., 2007), through nonconceptual processing (Williams, 2010), or through accepting circumstances as they are without the immediate desire to change them (Roemer & Orsillo, 2003). In any case, conventional views of emotional reactivity and regulation may need to be modified as we learn more about the mindfulness-emotion interface (Heppner et al., in press; Williams, 2010). The present findings contribute to this effort.

Finally, the practical significance of the findings can be highlighted. Hostile and CWBs, a major source of losses for companies (LeBlanc & Kelloway, 2002), vary substantially as a function of individual differences (Spector, 2011). Because mindfulness predicts such behaviors, formal or informal assessments of it can aid in the personnel selection process. Mindfulness seems particularly useful here in that assessments of it do not require asking people about socially undesirable behaviors (e.g., aggression or theft), behaviors that people are frequently reluctant to admit (Spain et al., 2014). Moreover, it should be emphasized that mindfulness differs from many other individual difference factors in its emphasis on skills that can be learned (Brown et al., 2007). That is, people can learn to become more attentive to their present-moment experiences and behaviors. Because mindfulness functions this way, there are many opportunities for managers to foster greater levels of mindfulness among employees (Jordan et al., 2009), and well-validated mindfulness training programs exist (Grossman et al., 2004; Shapiro et al., 2008). Research of the present type can provide an empirical justification for efforts along these lines.

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