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Abstract

By and large, research in organizational behavior and psychology has emphasized that mindfulness should have positive implications for employee well-being and performance, largely through benefits to self-control. Although some have noted that mindfulness could also have a “dark side,” researchers have yet to examine the potential costs of being mindful at work. Building on prior studies that have found that mindfulness leads to lower levels of surface acting, we investigate the possibility that when mindful employees engage in surface acting, it may contribute to greater self-control depletion, which in turn, results in undesirable performance outcomes. Using six field studies, we collected data at multiple points in time from both employees and their supervisors to test our theoretical model. In two Study 1 samples, we found that mindfulness moderated the relationship between surface acting and self-control depletion, such that this relationship was stronger for more mindful individuals. In four Study 2 samples, we replicated our Study 1 results and found that the mediated relationship between surface acting and five dimensions of employee performance via self-control depletion is moderated by mindfulness at the first stage, such that this mediated relationship is stronger for more mindful individuals. We discuss the implications of this work for future investigations of mindfulness, self-control, emotional labor, and performance outcomes.

Keywords: Mindfulness, surface acting, self-control depletion, job performance, replication

Mindfulness has increasingly been described as a beneficial quality for individuals at work (see Good et al., 2016 for a review). Trait mindfulness (referred to hereafter as *mindfulness*), is an individual's propensity to be aware and attentive when doing things, rather than automatically running through their activities and tasks (Brown & Ryan, 2003). Studies indicate that mindfulness is associated with effective emotional and behavioral self-control which, in turn, has the potential to bolster workplace well-being, relationships, and performance (Good et al., 2016). These benefits have sparked interest in mindfulness-enhancing practices and interventions among employees and employers, with numerous *Fortune 500* companies now offering mindfulness training (Glomb et al., 2011). In sum, there is growing evidence that mindfulness has many benefits for both individuals and organizations alike.¹

Mindfulness may be especially important in understanding the effects of emotional labor on job performance (Hülsheger et al., 2013). Emotional labor is the effortful management of workplace emotions used to reach organizational objectives (Grandey, 2000); thus, emotional labor occurs when employees regulate emotions to correspond with organizational requirements and norms in interactions with others (e.g., clients, coworkers). One harmful type of emotional labor is *surface acting*, in which employees hide their true feelings or pretend to have emotions they do not really have. This contrasts with *deep acting*, in which employees proactively change their internal feelings to align with the organization's desired emotions (i.e., rather than suppressing their emotions through surface acting). Unlike deep acting, surface acting is resource-depleting and associated with negative outcomes, including increased emotional exhaustion and psychological strain, and decreased job satisfaction and organizational attachment (Hülsheger & Schewe, 2011). Hülsheger et al. (2013) found that mindful employees

¹ Appendix A provides details regarding the implications of mindfulness at work and growing interest in practices that promote mindfulness at work.

are less likely to engage in surface acting, which in turn, reduces emotional exhaustion and increases job satisfaction. Similarly, Liang et al. (2018) found that mindfulness, through reduced surface acting, was associated with lower levels of supervisor-directed hostility and deviance. Taken together, this line of work suggests that engaging in surface acting is resource depleting because it involves displaying emotions that are not genuinely felt and that mindful employees tend to be more in touch with their feelings, which reduces their reliance on surface acting.

Although mindfulness clearly has many benefits, it could also have costs. Theoretically, mindfulness has been linked to depleting personal resources (e.g., attention) that are essential for performance (Dane, 2011; Levinthal & Rerup, 2006). Consistent with this idea, Sutcliffe et al. (2016, p. 70) note there are empirical laboratory findings which suggest that “mindfulness is not categorically beneficial—a point worth considering as research trumpeting the merits of mindfulness continues to blossom.” Similarly, Hülshager et al. (2013, p. 322) suggest that researchers should determine “whether there is not only a bright but also a dark side to mindfulness.” The purpose of this paper, then, is to explore the possibility that mindfulness may indeed have costs. Specifically, as depicted in Figure 1, we hypothesize that the indirect effect of surface acting on employee performance through self-control depletion will be stronger for more mindful employees (i.e., first stage moderated-mediation). By examining the “dark side” of mindfulness through a series of field studies, we make three noteworthy contributions.

***** Insert Figure 1 About Here *****

First, without considering both the costs and benefits of mindfulness, our current theoretical understanding of mindfulness and its implications is incomplete. Therefore, whereas previous research has emphasized the benefits of mindfulness through self-control, we develop and test a theoretical model that highlights the costs of being mindful. Second, prior studies have

found that mindfulness leads to lower levels of surface acting (Hülshager et al., 2013; Liang et al., 2018); however, we change the conversation by demonstrating that when mindful employees *do* engage in surface acting, it contributes to greater self-control depletion, which in turn, results in undesirable performance outcomes. Third, we build on prior research on emotional labor to show how self-control depletion from surface acting, which is increased by mindfulness, can undermine different aspects of employee performance, which are critical for organizational success. As noted earlier, prior studies have found that surface acting is negatively associated with job attitudes (Hülshager & Schewe, 2011), but relatively few studies have examined how this type of emotional labor affects employees' job performance in a comprehensive way. By doing so, we answer Grandey and Gabriel's (2015, p. 340) call for investigations of emotional labor that "expand the performance criterion."

The Depleting Effect of Surface Acting

Self-control describes the "ability to override or change one's inner responses, as well as to interrupt undesired behavioral tendencies (such as impulses) and refrain from acting on them" (Tangney et al., 2004, p. 274). Self-control resources are especially important in work contexts because they enable employees to behave in ways that are consistent with organizational norms and goals (Lian et al., 2017; Mead et al., 2009). As described by Lian et al. (2017), surface acting depletes employees' self-control resources because such behavior requires employees to either effortfully suppress their true emotions or to display fake emotions, and a number of studies have found a positive correlation between surface acting and self-control depletion (e.g., Trougakos et al., 2015; Yam et al., 2016). Thus, as noted by Uy et al. (2017, p. 1442), the "resource-depleting effect of surface acting is well established." Accordingly, consistent with ego depletion theory

(Baumeister et al., 1998) and this prior work, we propose that employees who engage in surface acting will experience self-control depletion.

Hypothesis 1: *Surface acting is positively associated with employees' self-control depletion.*

The Moderating Effect of Mindfulness

As described earlier, mindful employees are attentive and actively aware of themselves and of the events they are experiencing in the moment. As a result, they are less likely to react to events in the workplace without paying attention, and they are less likely to behave as if they were “running on automatic” or on “automatic pilot” (Brown & Ryan, 2003). For this reason, it is not too surprising that mindfulness is negatively related to surface acting (Hülshager et al., 2013; Liang et al., 2018), a form of emotional labor that has been described as “going through the motions” (Diefendorff et al., 2005, p. 340). Nevertheless, even more mindful employees will sometimes find it necessary to engage in surface acting while at work. Therefore, we argue that mindfulness as a *moderator* will have different implications for self-control when interacting with, rather than being a direct predictor of, surface acting.

Emotional labor research suggests that surface acting involves the unpleasant and effortful management of the dissonance between felt and expressed emotions, thereby drawing upon a limited pool of mental resources that enable self-control (Grandey, 2000; Grandey & Melloy, 2017). In other words, surface acting is laborious and depleting because employees must use greater control and skill to act out emotions they are not actually experiencing (Morris & Feldman, 1997). When employees are mindful, it is likely to intensify employees' awareness of their ongoing but often-hidden efforts involved in surface acting (Ashforth & Humphrey, 1993). Specifically, because mindful employees, relative to those who are less mindful, will be more acutely aware that they are acting out feelings that are not genuine, they are likely to experience

greater emotional dissonance and greater depletion of self-control resources (Hochschild, 1983; Morris & Feldman, 1997). Thus, surface acting by more mindful employees will produce more self-control depletion than surface acting by employees who are less mindful.

Hypothesis 2: *The relationship between surface acting and self-control depletion is moderated by mindfulness, such that the relationship is stronger among more mindful employees.*

Implications for Employee Performance

Most early investigations of the consequences of emotional labor focused on its effects on employee well-being and job attitudes (Grandey & Gabriel, 2015; Hülshager & Schewe, 2011). More recently, researchers have started to explore how emotional labor may influence different aspects of employee performance, especially customer service performance (e.g., Chi et al., 2011; Grandey, 2003; Groth et al., 2009). As noted by Lian et al. (2017), though, self-control depletion also has potential implications for multiple aspects of performance; furthermore, a broad examination of employee performance is consistent with Grandey and Gabriel's (2015) recommendation to expand the criterion in this line of work. According to Rotundo and Sackett (2002), employee performance comprises three performance components: task performance, citizenship performance, and counterproductive performance. Below, then, we discuss how surface acting, through self-control depletion, will affect task performance, OCB that benefits other individuals (OCBI), OCB that benefits the organization (OCBO), CWB that harms other individuals (CWBI), and CWB that harms the organization (CWBO).

In their meta-analysis of emotional labor, Hülshager and Schewe (2011) only found a small negative correlation between surface acting and task performance, which may suggest that the effects of surface acting on task performance are more indirect than direct. Furthermore, prior research indicates that personal resources are essential for successful task accomplishment (Beal et al., 2005), so when employees' self-control resources are depleted by surface acting they may

not only lack the necessary resources to perform well, but also may be more distracted and less focused on the careful execution of their required in-role duties and responsibilities (Lian et al., 2017). For instance, although they did not look at surface acting as an initial cause, Lin and Johnson (2015) found that employees who were depleted exhibited lower levels of task performance. For this reason, we expect that surface acting will negatively influence task performance through self-control depletion.

Employees who engage in surface acting will also lack the self-control resources to engage in extra-role behaviors, like helping others (OCBI) or the larger organization (OCBO). As Bergeron (2007) explained, engaging in OCB is a resource-consuming activity, and employees whose self-control resources are drained may naturally begin to cut back on behaviors that are more discretionary in order to conserve resources (Bolino et al., 2015). Consistent with this idea, Trougakos et al. (2015) found that employees who engaged in surface acting at work experienced greater exhaustion, which contributed to reduced levels of OCBI. Further, in a study by Fehr et al. (2017), air pollution appraisals reduced employees' self-control resources, thereby resulting in lower levels of OCB and higher levels of CWB.

Yam et al.'s (2016) findings suggest that self-control depletion resulting from surface acting may also increase behavior that undermines others or harms the organization. Indeed, studies have found that self-control depletion, which reduces employees' ability to control their impulses, has been positively associated with a variety of selfish, antisocial, and harmful behaviors, including unethical behavior (Gino et al., 2011), deviance (Klotz et al., 2018), abusive supervision (Mawritz et al., 2016), and incivility (Rosen et al., 2016). Therefore, we predict that surface acting will be associated with lower levels of task performance and OCB, and higher levels of CWB, and that these relationships will be mediated by depleted self-control.

Hypothesis 3: *Self-control depletion mediates the negative relationship between surface acting and (a) task performance, (b) OCBI, and (c) OCBO, and the positive relationship between surface acting and (d) CWBI and (e) CWBO.*

Finally, combining our arguments regarding the moderating role of mindfulness and the mediating role of self-control depletion (i.e., moderated mediation), we hypothesize that surface acting by those who are more mindful will not only lead to greater self-control depletion than among those who are less mindful, but diminished employee performance as well.

Hypothesis 4: *The indirect effect of surface acting on (a) task performance, (b) OCBI, (c) OCBO, (d) CWBI, and (e) CWBO via self-control depletion will be moderated by mindfulness, such that these relationships are stronger among more mindful employees.*

Overview of Studies

In Study 1, we collected data at two points in time, from two organizational samples (Samples 1 and 2), to test our first two hypotheses to determine if the positive relationship between surface acting and self-control depletion (Hypothesis 1) is moderated by mindfulness, such that the relationship is stronger among more mindful employees (Hypothesis 2). In Study 2, we collected multi-source data, at three points in time, from four organizational samples (Samples 3-6), to not only test Hypotheses 1 and 2, but also to examine the full theoretical model depicted in Figure 1 by determining if the relationship between surface acting and employee performance is mediated by self-control depletion (Hypothesis 3), and if mindfulness moderates the indirect effect of surface acting on performance via self-control depletion, such that the relationship is stronger among more mindful employees (Hypothesis 4).

Study 1 Method

Samples and Procedures

Our samples consisted of employee-supervisor dyads from property management (Sample 1, $N = 209$: 81% response rate, 46% female, average age was 34; respondents held sales,

service, and administrative positions) and management consulting (Sample 2, $N = 397$: 85% response rate, 50% female, average age was 35; respondents held consulting, administrative support, sales, marketing, and analytical positions) organizations located in the Midwest region of the United States. Participants were assured of confidentiality (data collection for both studies was approved by the Virginia Tech institutional review board, protocol number 20-096, "How trait mindfulness and psychological constructs influence employees' OCB performance." This is the first publication from this broader data collection effort). All employees of both organizations in Study 1 were invited to participate. To reduce common method bias, we separated the measurement of the independent and dependent variables (P. M. Podsakoff et al., 2003; P. M. Podsakoff et al., 2012). Specifically, at Time 1, we collected trait mindfulness and surface acting. At Time 2, six weeks later, we collected self-control depletion.

Measures

Participants responded to all survey items using a 5-point, Likert-type scale with anchors ranging from *strongly disagree* (1) to *strongly agree* (5).

Trait mindfulness. To measure trait mindfulness, we used an abbreviated 5-item version of the Mindful Attention Awareness Scale (Brown & Ryan, 2003; Van Dam et al., 2010), which measures the propensity for present-moment attention and awareness (Sample reverse-scored item: "I rush through activities without being really attentive to them").

Surface acting. We used Brotheridge and Lee's (2002) 3-item surface acting scale (Sample item: "I hide my true feelings about a situation").

Self-control depletion. We used Ciarocco et al.'s (2007) 10-item self-control depletion scale (Sample item: "I feel like my willpower is gone"). This scale was chosen because it has

been linked to both predictor (e.g., surface acting) and outcome variables (e.g., job performance) in our model (Lian et al., 2017).

Study 1 Results

Given that our research challenges the current research paradigm, which has emphasized the “bright side” of mindfulness, it is important to first demonstrate that our findings are still consistent with key findings from previous studies. Most notably, as discussed earlier, prior research has found that mindfulness is negatively related to surface acting (Hülshager et al., 2013; Liang et al., 2018). As shown in Table 1, mindfulness and surface acting are inversely related in both Sample 1 ($r = -.47, p < .01$) and Sample 2 ($r = -.50, p < .01$). Again, this suggests that more mindful employees are less likely to engage in surface acting, but our focus is on understanding what happens when more mindful employees *do* engage in surface acting (i.e., in terms of their self-control depletion and performance).²

We used moderated multiple regression (Cohen et al., 2003) and simple slopes analyses (Aiken & West, 1991) to test Hypotheses 1 and 2. We found support for Hypothesis 1 in both samples, as surface acting was positively related to self-control depletion (Sample 1: $\beta = .58, B = .47, S.E. = .05, R^2 = .33, \Delta R^2 = .33, p < .01$; Sample 2: $\beta = .50, B = .39, S.E. = .03, R^2 = .25, \Delta R^2 = .25, p < .01$). Next, we examined Hypothesis 2, which predicted that the relationship between surface acting and self-control depletion would be moderated by mindfulness, such that the relationship is stronger among employees with higher levels of mindfulness. The interaction of surface acting and mindfulness predicted self-control depletion in both samples (see Table 2). Further, simple slopes analyses revealed that the surface acting and self-control relationship was

² Prior to hypothesis testing, we assessed model fit by performing confirmatory factor analyses (CFA) of our hypothesized three-factor model (surface acting, mindfulness, & self-control depletion). We found acceptable model fit (e.g., Hair et al., 2015). Please see Appendix B for more details.

stronger for employees with higher levels (Sample 1: $B = .41$, $S.E. = .06$, $p < .01$; Sample 2: $B = .27$, $S.E. = .05$, $p < .01$) than lower levels (Sample 1: $B = .17$, $S.E. = .09$, *ns*; Sample 2: $B = .12$, $S.E. = .05$, $p < .05$) of mindfulness (see Table 3 and Figures 2-3). Thus, Hypothesis 2 was supported in both Samples 1 and 2.

***** Insert Tables 1-3 and Figures 2-3 about here *****

Study 1 Discussion

In two samples, we found that surface acting is associated with self-control depletion and that this relationship is moderated by mindfulness, such that the relationship is stronger among more mindful employees. Furthermore, we also found evidence that our findings are consistent with prior research in other respects (e.g., by showing that mindfulness is negatively related to surface acting), which reduces the likelihood that they are due to methodological artifacts.

Study 2 Methods

Sample and Procedures

In Study 2, we tested our hypotheses in four samples consisting of employee-supervisor dyads from emergency room (e.g., physicians, nurses; Sample 3, $N = 196$: 54% response rate, 50% female, average age was 38), non-emergency room hospital (e.g., physicians, nurses, social workers, administrative personnel; Sample 4, $N = 409$: 58% response rate, 52% female, average age was 37), financial services (customer service representatives, salespersons; Sample 5, $N = 290$: 71% response rate, 49% female, average age was 33), and leadership consulting (consultants, analysts, administrative staff; Sample 6, $N = 180$: 73% response rate, 49% female, average age was 34 years old) organizations in the Midwestern United States. Participants were assured of confidentiality (data collection was under the same protocol listed in Study 1). All employees of the four organizations in Study 2 (Samples 3-6) were invited to participate. To

reduce method bias concerns, we again collected data in three waves spaced with 6-week time lags to separate the independent, mediator, and dependent variables. At Time 1, we collected trait mindfulness and surface acting. At Time 2, we collected self-control depletion. At Time 3, we collected task and citizenship performance ratings from direct supervisors and counterproductive performance ratings from respondents.

Measures

Participants responded to all survey items using a 5-point Likert-type scale with anchors ranging from *strongly disagree* (1) to *strongly agree* (5), unless otherwise noted. All scales were self-reported, except for task performance, OCBI, and OCBO, which were assessed by supervisors. We used the same scales used in Study 1 to measure trait mindfulness, surface acting, and self-control depletion.

Employee performance. Supervisors rated desirable aspects of employee performance using Williams and Anderson's (1991) three-dimension, 21-item scale consisting of *task performance* (Sample item: "Fulfills responsibility specified in job description"), *OCBI* (Sample item: "Helps others who have heavy workloads"), and *OCBO* (Sample item: "Adheres to informal rules devised to maintain order"). For undesirable employee performance, respondents completed Bennett and Robinson's (2000) two-dimension, 19-item scale consisting of *CWBI* (Sample item: "Acted rudely toward someone at work") and *CWBO* (Sample item: "Taken property from work without permission").

Study 2 Results

Consistent with prior research, we again found an inverse relationship between mindfulness and surface acting. As shown in Tables 4 and 5, mindfulness and surface acting are inversely related in Sample 3 ($r = -.47, p < .01$), Sample 4 ($r = -.46, p < .01$), Sample 5 ($r = -.65,$

$p < .01$), and Sample 6 ($r = -.57, p < .01$). In addition, consistent with the idea that mindfulness may have beneficial direct effects on employee performance (Good et al., 2016), mindfulness is positively correlated with task performance, OCBI, and OCBO across all four samples (average correlation $r = .36, p < .01$, cf. Tables 4 and 5); additionally, mindfulness is negatively related to CWBI and CWBO across all four samples (average correlation $r = -.49, p < .01$, cf. Tables 4 and 5). Again, whereas mindfulness has a positive direct effect on task performance and OCB, and a negative direct effect on CWB, we expect that mindfulness will strengthen the indirect effect of surface acting on employee performance via self-control depletion.³

Replication of Study 1 Findings Regarding Hypotheses 1 and 2

We again used moderated multiple regression and simple slopes analyses to replicate our results from Study 1. We found support for Hypothesis 1, as surface acting was positively related to self-control depletion (Sample 3: $\beta = .51, B = .45, S.E. = .05, R^2 = .26, \Delta R^2 = .26, p < .01$; Sample 4: $\beta = .58, B = .47, S.E. = .03, R^2 = .34, \Delta R^2 = .34, p < .01$; Sample 5: $\beta = .71, B = .58, S.E. = .03, R^2 = .51, \Delta R^2 = .51, p < .01$; Sample 6: $\beta = .64, B = .53, S.E. = .05, R^2 = .42, \Delta R^2 = .42, p < .01$). We also found support for Hypothesis 2 in Samples 3-6, as the interaction of surface acting and mindfulness again predicted self-control depletion (see Table 2), such that this relationship was stronger for employees with higher levels (Sample 3: $B = .45, S.E. = .08, p < .01$; Sample 4: $B = .43, S.E. = .05, p < .01$; Sample 5: $B = .35, S.E. = .04, p < .01$; Sample 6: $B = .57, S.E. = .07, p < .01$) than lower levels (Sample 3: $B = -.08, S.E. = .09, ns$; Sample 4: $B = .21, S.E. = .05, p < .01$; Sample 5: $B = .22, S.E. = .06, p < .01$; Sample 6: $B = -.02, S.E. = .10, ns$; see Table 3 and Figures 4-7) of mindfulness.

***** Insert Tables 4-6 and Figures 4-7 about here *****

³ Prior to hypothesis testing, we again assessed model fit by performing CFA and nesting effect analyses. We found acceptable model fit and evidence that our data were not influenced by nonindependence biases. Please see Appendix B for more details.

Hypotheses Testing: Moderated Mediation

To test our mediation and moderated-mediation hypotheses (Hypotheses 3a-e and 4a-e), we first conducted simple mediation analyses using the procedures from Preacher and Hayes (2004, 2008). We estimated the indirect effect using unstandardized coefficients and bootstrapping procedures with 10,000 resamples, confirming evidence of mediation if the 95% confidence intervals (CI) exclude zero. As shown in Table 6, we found that self-control depletion mediated the relationship between surface acting and all five dimensions of employee performance in all four Study 2 samples. Thus, all parts of Hypothesis 3 were supported.

To test Hypothesis 4a-e, we used 10,000 resamples to estimate the indirect effect and confidence intervals via Hayes' (2020) PROCESS SPSS macro (Model 7 = first stage moderated-mediation). We calculated the index of moderated-mediation (mod-med) coefficients (Hayes, 2015) to determine if the indirect effect at high versus low levels of mindfulness is significantly different (Hayes, 2015). As shown in Table 6, the significant mod-med coefficients indicate that the mediated effect of self-control depletion on all five surface acting-employee performance relationships examined in all four Study 2 samples is stronger for those with higher levels of mindfulness. Thus, all parts of Hypothesis 4 were supported.⁴

Study 2 Discussion

In Study 2, we again found that surface acting was positively related to self-control resource depletion (Hypothesis 1) and that this relationship was moderated by mindfulness

⁴ In a separate set of analyses, we tested all of our hypotheses (in all samples) with five control variables [employee gender, organizational tenure, negative affectivity (Watson et al., 1988), sleep quantity (Lanaj et al., 2014), and employee workload (Spector & Jex, 1998)] and our results were consistent, regardless of the analytic technique (e.g., SEM, PROCESS) used. The findings are reported in Appendix B. In Appendix C, we report additional findings which demonstrate that our results are consistent with prior research in some important ways.

(Hypothesis 2). Furthermore, we found that the relationship between surface acting and employee performance was mediated by self-control depletion (Hypothesis 3) and that mindfulness moderated the indirect effect of surface acting on performance via self-control depletion, such that the relationship was stronger among more mindful employees (Hypothesis 4). Overall, our theoretical model and hypotheses were fully supported.

General Discussion

Advocates of mindfulness at work have fueled a growing industry by accumulating evidence attesting to its benefits (e.g., Good et al., 2016). This movement continues to grow despite potential concerns that mindfulness at work may not always serve as an asset, but sometimes might instead act as a liability (Dane, 2011; Hafenbrack & Vohs, 2018; Weick & Putnam, 2006). Our two studies explored this possibility, revealing that mindfulness strengthens the relationship between surface acting and self-control depletion. Furthermore, our results suggest that the harmful effects of surface acting on various types of employee performance through self-control depletion are stronger among more mindful employees, thereby increasing our understanding of the broader performance implications of this particular type of emotional labor, as recommended in prior research (Grandey & Gabriel, 2015).

While our results run counter to the idea that mindfulness is always positive, they are consistent with recent speculation (e.g., Hülshager et al., 2013; Sutcliffe et al., 2016) that mindfulness could have both a “bright side” and a “dark side,” and Fineman’s (2006) admonition to consider negative aspects of ostensibly positive constructs. Furthermore, whereas our finding that mindfulness strengthens the positive relationship between surface acting and self-control depletion is novel, we also provided evidence that, reflecting prior research (Hülshager et al., 2013; Liang et al., 2018), mindful employees are generally less likely to engage in surface

acting. Thus, although more mindful employees use surface acting less, when they do, it is more depleting of their self-control. To our knowledge, this is the first evidence that mindfulness has costs for self-control, and that this is detrimental to job performance. Taken together, our findings not only contribute to our understanding of mindfulness and the literature on emotional labor and surface acting, but also have important implications for future research and practice.

Directions for Future Research

Although mindfulness has been extensively theorized to *buffer* individuals against aversive experiences (Long & Christian, 2015), our findings suggest that mindfulness can also *amplify* negative responses to aversive experiences. It is still unclear, though, exactly what underlying processes explain these very different effects. Therefore, it is important for future research to more closely examine the process by which mindfulness alters individuals' responses to different experiences and what kinds of aversive experiences may elicit more positive or negative reactions; for instance, mindfulness may play a different role in the context of reactions to abusive supervision versus receiving negative feedback. Further, although we focused on a negative experience, mindfulness could strengthen responses to pleasant experiences. For example, the desirable outcomes resulting from taking a break (Marzuq & Drach-Zahavy, 2012), helping others, acting compassionately, or performing meaningful tasks (Grant & Ashford, 2008) may be amplified among more mindful individuals. Finally, both processes of buffering and amplifying may play out simultaneously; being more aware may intensify both positive and negative experiences, informing future job crafting research (Bruning & Campion, 2018).⁵

Our findings are the first empirical validation of theories that mindfulness provides contingent value for employee performance (Dane, 2011; Levinthal & Rerup, 2006). Consistent

⁵ We thank an anonymous reviewer for suggesting this potential connection.

with prior theory, the impact of mindfulness on employee performance depended on contingencies, and its effect was mediated through a scarce personal resource. However, our research also extends prior research. Most notably, in contrast to Dane (2011), we found that self-control (rather than attention) can function as the scarce personal resource influenced by mindfulness that mediates between the environment and performance. Given the prominence of self-control in both the mindfulness and performance literatures (Glomb et al., 2011; Lian et al., 2017), this seems like a particularly fruitful mechanism to consider in future research linking mindfulness and employee performance. We also demonstrated that other variables, beyond those suggested by Dane (2011), can act as contingencies and outcomes, including surface acting, citizenship behavior, and counterproductive work behavior. More generally, our findings suggest that future studies should continue adopting a contingency perspective.

Limitations

Our research has noteworthy strengths, including the use of multiple studies, data collected at multiple points in time, and supervisor-ratings of employee task and citizenship performance. Nevertheless, there are also some limitations that should be addressed in future studies. First, although we collected data across multiple waves, we are still unable to conclusively demonstrate causality. Therefore, to strengthen causal claims, future studies should employ laboratory or interventional approaches to increase confidence in the hypothesized relationships. Second, although we used the most robustly validated instrument for assessing mindfulness (Brown & Ryan, 2003; Park et al., 2013), there may also be value in employing alternative measures. There is an ongoing debate on whether to operationalize mindfulness as a unitary construct or as one with multiple facets (e.g., awareness and acceptance; Liang et al., 2018). Whereas prior research has consistently identified the presence facet that was used in this

study as having superior predictive validity (Brown & Ryan, 2003, 2004; Liang et al., 2018), the facet of acceptance could also be relevant for understanding the relationship between surface acting and self-control depletion directly, or through mediating factors like rumination (e.g., Liang et al., 2018). Thus, future studies should explore the potential impact of these alternative measures and their broader implications for understanding the costs and benefits of mindfulness.

Practical Implications

Our findings also have some implications for practice, showing that being mindful at work may pose hidden and largely unexplored challenges (e.g., Lyddy & Good, 2017). Most broadly, while there appear to be significant and diverse benefits of mindfulness for workplace functioning (see Appendix A), our results indicate that mindfulness may not always be helpful. Furthermore, they suggest that the value of trait mindfulness – and potentially mindfulness training – may be greatest in contexts with low surface acting. With elevated self-control, more mindful employees should perform more effectively; however, in contexts that frequently demand surface acting, employees who are more mindful may become increasingly taxed and exhibit diminished task/citizenship performance and increased counterproductive performance. As such, there may be limits to the performance benefits of mindfulness in such environments.

Conclusion

Mindfulness in the workplace is a topic that is receiving increasing attention from both organizational scholars and practitioners. In general, past research has highlighted the “bright side” of mindfulness, emphasizing its positive effects on employee well-being and performance through self-control. Although it has been acknowledged that mindfulness could have a “dark side,” the potential negative effects of mindfulness have yet to be empirically examined in the field. In this study, we found that more mindful employees who engaged in surface acting

experienced greater self-control depletion; further, the mediated relationship between surface acting and five dimensions of employee performance via self-control depletion was moderated by mindfulness, such that this mediated relationship was stronger for more mindful individuals. Thus, while mindfulness has many benefits, our work indicates that it can also have costs.

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Figures and Tables

Figure 1. Theoretical model of first stage moderated-mediation of surface acting and mindfulness on employee performance via self-control depletion.

Figure 2. Interactive effects of surface acting and mindfulness on self-control depletion (Sample 1, $n = 209$).

Figure 3. Interactive effects of surface acting and mindfulness on self-control depletion (Sample 2, $n = 397$).

Figure 4. Interactive effects of surface acting and mindfulness on self-control depletion (Sample 3, $n = 196$).

Figure 5. Interactive effects of surface acting and mindfulness on self-control depletion (Sample 4, $n = 409$).

Figure 6. Interactive effects of surface acting and mindfulness on self-control depletion (Sample 5, $n = 290$).

Figure 7. Interactive effects of surface acting and mindfulness on self-control depletion (Sample 6, $n = 180$).

Sample 1, $n = 209$

Figure 8. Study 1 structural equation modeling (SEM) results.

Sample 2, $n = 397$

Figure 9. Study 2 structural equation modeling (SEM) results (Samples 3-6).

Table 1

Means, Standard Deviations, Correlations, and Reliabilities (Samples 1 and 2)

	Sample 1 Mean (SD)	Sample 2 Mean (SD)	1	2	3	4	5	6
1. Employee Gender ^a	0.46 (0.50)	0.50 (0.50)	-	.38**	-.06	-.08	.01	.06
2. Supervisor Gender ^a	0.45 (0.50)	0.43 (0.50)	.30**	-	.01	-.10*	-.01	.03
3. Employee Race ^b	0.33 (0.47)	0.27 (0.45)	.07	-.01	-	-.09	-.15**	-.10*
4. Employee Tenure	6.61 (6.28)	6.82 (6.59)	-.02	.05	.09	-	.48**	.00
5. Employee Age	33.62 (10.79)	35.13 (11.75)	-.03	.05	-.05	.51**	-	-.05
6. Sleep Quantity	6.54 (1.49)	6.63 (1.40)	-.13	-.01	-.03	.08	.08	-
7. Negative Affect	2.18 (1.11)	1.80 (0.84)	.09	-.08	.15*	-.06	-.17*	-.10
8. Employee Workload	3.68 (0.87)	3.51 (0.98)	-.05	-.11	.06	-.06	-.14*	-.02
9. Surface Acting	3.10 (1.09)	2.98 (1.16)	.02	-.01	.02	-.05	-.11	-.01
10. Mindfulness	3.38 (1.10)	3.48 (1.07)	.00	-.04	.01	.19**	.31**	.00
11. Self-Control Depletion	2.69 (0.89)	2.46 (0.91)	.09	-.11	.08	-.14**	-.22**	-.09

Note. Sample 1 (below diagonal): N = 209; sample 2 (above diagonal): N = 397; Scale reliabilities are presented in parentheses.

^a 1 = Women, 0 = Men; ^b 1 = non-White employees, 0 = White employees

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

Table 1 (continued)

Means, Standard Deviations, Correlations, and Reliabilities (Samples 1 and 2)

	Sample 1 Mean (SD)	Sample 2 Mean (SD)	7	8	9	10	11
1. Employee Gender ^a	0.46 (0.50)	0.50 (0.50)	.06	.07	.03	.00	.07
2. Supervisor Gender ^a	0.45 (0.50)	0.43 (0.50)	.01	.07	.07	-.08	.07
3. Employee Race ^b	0.33 (0.47)	0.27 (0.45)	-.05	.04	-.08	.10*	-.10
4. Employee Tenure	6.61 (6.28)	6.82 (6.59)	-.16**	.05	-.13*	.17**	-.20**
5. Employee Age	33.62 (10.79)	35.13 (11.75)	-.25**	-.05	-.14**	.26**	-.24**
6. Sleep Quantity	6.54 (1.49)	6.63 (1.40)	-.18**	-.04	-.16**	.12*	-.20**
7. Negative Affect	2.18 (1.11)	1.80 (0.84)	(.96/.94)	.11*	.39**	-.47**	.66**
8. Employee Workload	3.68 (0.87)	3.51 (0.98)	.20**	(.80/.82)	.21**	-.07	.14**
9. Surface Acting	3.10 (1.09)	2.98 (1.16)	.55**	.34**	(.84/.84)	-.50**	.50**
10. Mindfulness	3.38 (1.10)	3.48 (1.07)	-.41**	-.12	-.47**	(.92/.90)	-.61**
11. Self-Control Depletion	2.69 (0.89)	2.46 (0.91)	.71**	.17*	.58**	-.57**	(.89/.91)

Note. Sample 1 (below diagonal): N = 209; sample 2 (above diagonal): N = 397; Scale reliabilities are presented in parentheses.

^a 1 = Women, 0 = Men; ^b 1 = non-White employees, 0 = White employees

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

Table 2

Moderated Regression Analyses of Surface Acting (SA) and Mindfulness on Self-Control Depletion (All Samples)

	Self-Control Depletion	
	β (B, S.E.)	R^2 (ΔR^2)
SAMPLE 1, n = 209		
Surface Acting	.35** (.28, .05)	
Mindfulness	-.41** (-.33, .05)	
SA X Mindfulness	.12* (.09, .04)	.46 (.01*)
SAMPLE 2, N = 397		
Surface Acting	.24** (.19, .04)	
Mindfulness	-.49** (-.41, .04)	
SA X Mindfulness	.08* (.06, .03)	.43 (.01*)
SAMPLE 3, n = 196		
Surface Acting	.29** (.25, .06)	
Mindfulness	-.45** (-.43, .06)	
SA X Mindfulness	.18** (.15, .05)	.41 (.03**)
SAMPLE 4, n = 409		
Surface Acting	.39** (.31, .03)	
Mindfulness	-.38** (-.33, .04)	
SA X Mindfulness	.11** (.09, .03)	.46 (.01**)
SAMPLE 5, n = 290		
Surface Acting	.34** (.28, .04)	
Mindfulness	-.51** (-.42, .04)	
SA X Mindfulness	.08* (.06, .03)	.66 (.01*)
SAMPLE 6, n = 180		
Surface Acting	.39** (.33, .06)	
Mindfulness	-.31** (-.27, .06)	
SA X Mindfulness	.22** (.16, .04)	.49 (.04**)

Notes. Sample 1: $N = 209$; sample 2: $N = 397$; Sample 3: $N = 196$; Sample 4 = 409; Sample 5: $N = 290$; Sample 6: $N = 180$. ^a Women = 1, Men = 0; SA = surface acting; Standardized regression coefficients (β) are reported with unstandardized regression coefficients (B) and standard errors (S.E.) reported in parenthesis.

* $p < .05$

** $p < .01$

Table 3. Simple Slopes for Surface Acting and Mindfulness on Self-Control Depletion (All Samples)

Sample	Dependent Variable: Self-Control Depletion		
	Low Mindfulness	Moderate Mindfulness	High Mindfulness
	(B / S.E.)	(B / S.E.)	(B / S.E.)
1	(.17 / .09)	(.29** / .05)	(.41** / .06)
2	(.12* / .05)	(.20** / .03)	(.27** / .05)
3	(-.08 / .09)	(.30** / .05)	(.45** / .08)
4	(.21** / .05)	(.33** / .03)	(.43** / .05)
5	(.22** / .06)	(.26** / .05)	(.35** / .04)
6	(-.02 / .10)	(.34** / .06)	(.57** / .07)

Notes: Sample 1: $N = 209$; Sample 2: $N = 397$; Sample 3: $N = 196$; Sample 4: $N = 409$; Sample 5: $N = 290$; Sample 6: $N = 180$; Shaded values represent when moderation was achieved because the "low mindfulness" and "high mindfulness" conditions were significantly different; Unstandardized coefficients (B) are reported with standard errors (S.E.).

* $p < .05$

** $p < .01$

Table 4

Means, Standard Deviations, Correlations, and Reliabilities (Samples 3 and 4)

	Sample 3 Mean (SD)	Sample 4 Mean (SD)	1	2	3	4	5	6	7	8
1. Employee Gender ^a	0.50 (0.50)	0.52 (0.50)	-							
2. Supervisor Gender ^a	0.44 (0.50)	0.41 (0.50)	.46**	-						
3. Employee Race ^b	0.24 (0.43)	0.22 (0.41)	-.07	-.06	-					
4. Employee Tenure	7.26 (6.31)	6.36 (5.494)	-.01	-.03	-.17*	-				
5. Employee Age	38.29 (11.87)	36.71 (10.84)	.12	.08	-.27**	.42**	-			
6. Sleep Quantity	6.83 (1.15)	6.70 (1.24)	-.04	-.01	-.12	.00	-.01	-		
7. Negative Affect	1.61 (0.80)	1.66 (0.89)	-.10	-.03	.14*	-.10	-.30**	-.02	(.94/.96)	
8. Employee Workload	3.51 (1.00)	3.39 (1.07)	-.01	.00	-.04	-.03	-.06	-.08	.05	(.81/.80)
9. Surface Acting	2.73 (1.10)	2.76 (1.11)	-.01	.06	.00	.02	-.02	-.07	.43**	.08
10. Mindfulness	3.72 (1.02)	3.60 (1.05)	.09	.07	-.10	.00	.17*	-.03	-.51**	-.15*
11. Self-Control Depletion	2.25 (0.96)	2.24 (0.90)	-.01	.05	.03	.01	-.13	-.01	.56**	.13
12. Task Performance ^c	4.34 (0.68)	4.23 (0.74)	.23**	.11	-.18*	.09	.29**	.00	-.45**	.10
13. OCBI ^c	4.14 (0.74)	4.01 (0.73)	.21**	.09	-.15*	.04	.06	.00	-.36**	.14*
14. OCBO ^c	4.29 (0.71)	4.12 (0.74)	.27**	.12	-.22**	.09	.27**	.02	-.50**	.10
15. CWBI	1.49 (0.72)	1.51 (0.77)	-.29**	-.16*	.16*	-.15*	-.30**	.04	.60**	-.02
16. CWBO	1.65 (0.72)	1.65 (0.75)	-.23**	-.11	.10	-.10	-.24**	.05	.59**	-.09

Note. Sample 3 (below diagonal): $N = 196$; sample 4 (above diagonal): $N = 409$; Scale reliabilities are presented in parentheses. OCBI = organizational citizenship behaviors directed toward individuals; OCBO = organizational citizenship behaviors directed towards the organization; CWBI = counterproductive work behaviors that primarily harm individuals; CWBO = counterproductive work behaviors that primarily harm the organization.

^a 1 = Women, 0 = Men; ^b 1 = non-White employees, 0 = White employees; ^c = Supervisor-rated variable

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

Table 4 (continued)
Means, Standard Deviations, Correlations, and Reliabilities (Samples 3 and 4)

	Sample 3 Mean (SD)	Sample 4 Mean (SD)	9	10	11	12	13	14	15	16
1. Employee Gender ^a	0.50 (0.50)	0.52 (0.50)	.06	-.05	-.05	.15**	.18**	.15**	-.15**	-.11*
2. Supervisor Gender ^a	0.44 (0.50)	0.41 (0.50)	.06	.01	-.02	.05	.03	.07	-.12*	-.06
3. Employee Race ^b	0.24 (0.43)	0.22 (0.41)	-.01	.00	-.04	.00	.02	-.03	.08	.07
4. Employee Tenure	7.26 (6.31)	6.36 (5.494)	-.13**	.19**	-.22**	.11*	.08	.07	-.01	-.07
5. Employee Age	38.29 (11.87)	36.71 (10.84)	-.13**	.24**	-.27**	.24**	.09	.22**	-.15**	-.23**
6. Sleep Quantity	6.83 (1.15)	6.70 (1.24)	-.24**	.09	-.27**	.07	.15**	.05**	-.19**	-.17**
7. Negative Affect	1.61 (0.80)	1.66 (0.89)	.50**	-.42**	.72**	-.45**	-.29**	-.40**	.53**	.58**
8. Employee Workload	3.51 (1.00)	3.39 (1.07)	.12*	-.03	.08	.08	.23**	.09	.11*	.04
9. Surface Acting	2.73 (1.10)	2.76 (1.11)	(.85/.84)	-.46**	.58**	-.21**	-.20**	-.25**	.29**	.38**
10. Mindfulness	3.72 (1.02)	3.60 (1.05)	-.47**	(.90/.91)	-.56**	.32**	.20**	.44**	-.39**	-.45**
11. Self-Control Depletion	2.25 (0.96)	2.24 (0.90)	.51**	-.54**	(.91/.92)	-.44**	-.37**	-.52**	.45**	.51**
12. Task Performance ^c	4.34 (0.68)	4.23 (0.74)	-.28**	.43**	-.35**	(.80/.83)	.54**	.75**	-.45**	-.44**
13. OCBI ^c	4.14 (0.74)	4.01 (0.73)	-.33**	.38**	-.33**	.56**	(.89/.88)	.54**	-.23**	-.31**
14. OCBO ^c	4.29 (0.71)	4.12 (0.74)	-.30**	.49**	-.37**	.76**	.56**	(.84/.84)	-.48**	-.47**
15. CWBI	1.49 (0.72)	1.51 (0.77)	.31**	-.39**	.36**	-.45**	-.23**	-.48**	(.89/.92)	.77**
16. CWBO	1.65 (0.72)	1.65 (0.75)	.35**	-.40**	.35**	-.39**	-.24**	-.45**	.79**	(.91/.92)

Note. Sample 3 (below diagonal): $N = 196$; sample 4 (above diagonal): $N = 409$; Scale reliabilities are presented in parentheses. OCBI = organizational citizenship behaviors directed toward individuals; OCBO = organizational citizenship behaviors directed towards the organization; CWBI = counterproductive work behaviors that primarily harm individuals; CWBO = counterproductive work behaviors that primarily harm the organization.

^a 1 = Women, 0 = Men; ^b 1 = non-White employees, 0 = White employees; ^c = Supervisor-rated variable

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

Table 5
Means, Standard Deviations, Correlations, and Reliabilities (Samples 5 and 6)

	Sample 5 Mean (SD)	Sample 6 Mean (SD)	1	2	3	4	5	6	7	8
1. Employee Gender ^a	0.49 (0.50)	0.49 (0.50)	-	.35**	-.06	-.14	.01	-.05	-.12	.10
2. Supervisor Gender ^a	0.41 (0.50)	0.43 (0.50)	.45**	-	-.04	-.14	.01	.05	-.10	.14
3. Employee Race ^b	0.33 (0.47)	0.34 (0.48)	-.06	-.08	-	-.02	-.17*	-.11	.11	.18*
4. Employee Tenure	7.01 (6.11)	7.11 (6.88)	-.08	.01	-.01	-	.46**	.05	-.04	-.05
5. Employee Age	33.13 (10.53)	34.04 (11.04)	.01	.13*	-.14*	.46**	-	-.05	-.27**	-.14
6. Sleep Quantity	6.53 (1.75)	6.70 (1.59)	-.04	.07	.09	.08	-.10	-	-.10	-.08
7. Negative Affect	2.52 (1.26)	2.12 (1.15)	-.09	-.16**	.05	-.03	-.25**	-.10	(.97/.97)	.17*
8. Employee Workload	3.80 (0.88)	3.56 (1.04)	.01	.08	.03	-.08	-.17**	.03	.22**	(.82/.86)
9. Surface Acting	3.40 (1.11)	3.25 (1.20)	-.02	-.05	-.08	-.01	-.17**	-.06	.62**	.31**
10. Mindfulness	2.91 (1.12)	3.31 (1.13)	.02	.06	-.03	-.02	.21**	.00	-.66**	-.19**
11. Self-Control Depletion	2.88 (0.91)	2.63 (1.00)	-.01	-.11	.01	-.04	-.23**	-.10	.76**	.18**
12. Task Performance ^c	3.93 (0.70)	4.07 (0.75)	.13*	.12*	-.18**	.04	.23**	.00	-.52**	.02
13. OCBI ^c	4.04 (0.71)	4.03 (0.72)	.17**	.19**	-.11	.05	.09	.08	-.02	.30**
14. OCBO ^c	3.74 (0.76)	3.92 (0.79)	.10	.10	-.17**	.06	.31**	-.03	.60**	-.01
15. CWBI	2.37 (1.29)	1.77 (1.08)	-.14*	-.16**	.03	.05	-.29**	-.01	.80**	.22**
16. CWBO	2.46 (1.22)	1.93 (1.04)	-.13*	-.16**	.02	.03	-.29**	-.02	.82**	.20**

Note. Sample 5 (below diagonal): $N = 290$; sample 6 (above diagonal): $N = 180$; Scale reliabilities are presented in parentheses. OCBI = organizational citizenship behaviors directed toward individuals; OCBO = organizational citizenship behaviors directed towards the organization; CWBI = counterproductive work behaviors that primarily harm individuals; CWBO = counterproductive work behaviors that primarily harm the organization.

^a 1 = Women, 0 = Men; ^b 1 = non-White employees, 0 = White employees; ^c = Supervisor-rated variable

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

Table 5 (continued)
Means, Standard Deviations, Correlations, and Reliabilities (Samples 5 and 6)

	Sample 5 Mean (SD)	Sample 6 Mean (SD)	9	10	11	12	13	14	15	16
1. Employee Gender ^a	0.49 (0.50)	0.49 (0.50)	-.05	.12	.04	.12	.14	.19**	-.21**	-.13
2. Supervisor Gender ^a	0.41 (0.50)	0.43 (0.50)	.04	.07	.03	.07	.01	.09	-.20**	-.15**
3. Employee Race ^b	0.33 (0.47)	0.34 (0.48)	.12	-.12	.13	-.20**	-.01	-.11	.11	.15*
4. Employee Tenure	7.01 (6.11)	7.11 (6.88)	-.12	.03	-.10	.06	.05	.07	.15*	.13
5. Employee Age	33.13 (10.53)	34.04 (11.04)	-.21**	.27**	-.26**	.30**	.10	.35**	-.24**	-.23**
6. Sleep Quantity	6.53 (1.75)	6.70 (1.59)	-.09	.04	-.17*	-.02	.10	.00	-.02	-.08
7. Negative Affect	2.52 (1.26)	2.12 (1.15)	.54**	-.58**	.64**	-.50**	-.17**	-.48**	.73**	.77**
8. Employee Workload	3.80 (0.88)	3.56 (1.04)	.24**	-.18*	.19*	.08	.29**	.01	.12	.13
9. Surface Acting	3.40 (1.11)	3.25 (1.20)	(.85/.87)	-.57**	.64**	-.21**	-.21**	-.29**	.38**	.46**
10. Mindfulness	2.91 (1.12)	3.31 (1.13)	-.65**	(.91/.91)	-.52**	.41**	.21**	.53**	-.55**	-.57**
11. Self-Control Depletion	2.88 (0.91)	2.63 (1.00)	.71**	-.75**	(.89/.92)	-.36**	-.27**	-.43**	.43**	.49**
12. Task Performance ^c	3.93 (0.70)	4.07 (0.75)	-.26**	.42**	-.44**	(.75/.79)	.49**	.78**	-.50**	-.51**
13. OCBI ^c	4.04 (0.71)	4.03 (0.72)	.00	.10	-.12	.41**	(.89/.90)	.44**	-.08	-.13
14. OCBO ^c	3.74 (0.76)	3.92 (0.79)	-.38**	.51**	-.54**	.80**	.36**	(.76/.79)	-.54**	-.54**
15. CWBI	2.37 (1.29)	1.77 (1.08)	.52**	-.59**	.65**	-.59**	-.06	-.69**	(.97/.96)	.90**
16. CWBO	2.46 (1.22)	1.93 (1.04)	.55**	-.63**	.68**	-.57**	-.08	-.67**	.95**	(.97/.95)

Note. Sample 5 (below diagonal): $N = 290$; sample 6 (above diagonal): $N = 180$; Scale reliabilities are presented in parentheses. OCBI = organizational citizenship behaviors directed toward individuals; OCBO = organizational citizenship behaviors directed towards the organization; CWBI = counterproductive work behaviors that primarily harm individuals; CWBO = counterproductive work behaviors that primarily harm the organization.

^a 1 = Women, 0 = Men; ^b 1 = non-White employees, 0 = White employees; ^c = Supervisor-rated variable

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

Table 6.

Simple and Conditional (Mindfulness) Indirect Effects of Surface Acting on Five Employee Performance Dimensions through Self-Control Depletion

Dependent Variable	Indirect Effect (Simple Mediation; 95% CI)	Indirect Effect by High/Low Levels of Mindfulness		Index of Moderated-Mediation (95% CI)
Sample 3, <i>n</i> = 196				
Task Performance ^a	-.09* (-.14, -.04; S.E.=.03); Direct R.E. = -.09	Low Mind	-.02 (-.06, .03; S.E.=.02)	-.03* (-.06, -.003; S.E.=.01)
		Moderate Mind	-.06* (-.10, -.02; S.E.=.02)	
		High Mind	-.09* (-.15, -.03; S.E.=.03)	
OCBI ^a	-.08* (-.14, -.02; S.E.=.03); Direct R.E. = -.14*	Low Mind	-.01 (-.06, .02; S.E.=.02)	-.03* (-.06, -.001; S.E.=.01)
		Moderate Mind	-.05* (-.09, -.01; S.E.=.02)	
		High Mind	-.08* (-.14, -.02; S.E.=.03)	
OCBO ^a	-.10* (-.15, -.05; S.E.=.03); Direct R.E. = -.10*	Low Mind	-.02 (-.07, .03; S.E.=.02)	-.03* (-.06, -.003; S.E.=.02)
		Moderate Mind	-.06* (-.10, -.03; S.E.=.02)	
		High Mind	-.10* (-.15, -.04; S.E.=.03)	
CWBI	.09* (.03, .16; S.E.=.03); Direct R.E. = .11*	Low Mind	.02 (-.03, .07; S.E.=.02)	.03* (.003, .06; S.E.=.02)
		Moderate Mind	.06* (.02, .11; S.E.=.02)	
		High Mind	.09* (.03, .15; S.E.=.02)	
CWBO	.08* (.04, .20; S.E.=.04); Direct R.E. = .16*	Low Mind	.01 (-.02, .06; S.E.=.01)	.03* (.002, .05; S.E.=.01)
		Moderate Mind	.06* (.01, .09; S.E.=.02)	
		High Mind	.08* (.02, .13; S.E.=.03)	
Sample 4, <i>n</i> = 409				
Task Performance ^a	-.18* (-.23, -.14; S.E.=.02); Direct R.E. = .04	Low Mind	-.08* (-.14, -.04; S.E.=.03)	-.03* (-.06, -.004; S.E.=.01)

OCBI ^a	-.15* (-.20, -.10; S.E.=.03); Direct R.E. = .02	Moderate Mind	-.13* (-.17, -.09; S.E.=.02)		
		High Mind	-.17* (-.23, -.11; S.E.=.03)		
		Low Mind	-.07* (-.11, -.03; S.E.=.02)		
	OCBO ^a	-.22* (-.28, -.17; S.E.=.03); Direct R.E. = .05	Moderate Mind	-.10* (-.15, -.06; S.E.=.01)	-.03* (-.05, -.003; S.E.=.01)
			High Mind	-.14* (-.20, -.08; S.E.=.03)	
			Low Mind	-.10* (-.17, -.04; S.E.=.03)	
CWBI	.17* (.12, .22; S.E.=.03); Direct R.E. = .03	Moderate Mind	-.16* (-.20, -.12; S.E.=.02)	-.04* (-.07, -.01; S.E.=.02)	
		High Mind	-.20* (-.26, -.15; S.E.=.02)		
		Low Mind	.08* (.03, .13; S.E.=.01)		
CWBO	.17* (.13, .22; S.E.=.02); Direct R.E. = .09*	Moderate Mind	.12* (.08, .16; S.E.=.01)	.03* (.003, .06; S.E.=.01)	
		High Mind	.15* (.10, .21; S.E.=.01)		
		Low Mind	.08* (.03, .13; S.E.=.01)		
Sample 5, <i>n</i> = 290					
Task Performance ^a	-.24* (-.32, -.16; S.E.=.04); Direct R.E. = .07	Moderate Mind	.12* (.08, .16; S.E.=.01)	.03* (.003, .06; S.E.=.01)	
		High Mind	.16* (.10, .21; S.E.=.03)		
		Low Mind	-.09* (-.15, -.04; S.E.=.03)		
OCBI ^a	-.11* (-.20, -.02; S.E.=.05); Direct R.E. = .11*	Moderate Mind	-.11* (-.16, -.06; S.E.=.03)	-.02* (-.04, -.002; S.E.=.01)	
		High Mind	-.14* (-.21, -.08; S.E.=.03)		
		Low Mind	-.04* (-.07, .002; S.E.=.02)	-.01* (-.03, -.001; S.E.=.01)	
		Moderate Mind	-.05* (-.09, -.01; S.E.=.02)		

OCBO ^a	-.26* (-.36, -.18; S.E.=.05); Direct R.E = .00	High Mind	-.07* (-.12, -.01; S.E.=.03)	-.03* (-.05, -.002; S.E.=.01)
		Low Mind	-.10* (-.17, -.04; S.E.=.03)	
		Moderate Mind	-.12* (-.19, -.06; S.E.=.03)	
		High Mind	-.16* (-.24, -.09; S.E.=.04)	
CWBI	.47* (.35, .60; S.E.=.06); Direct R.E. = .14	Low Mind	.17* (.17, .29; S.E.=.05)	.04* (.004, .09; S.E.=.02)
		Moderate Mind	.21* (.12, .32; S.E.=.05)	
		High Mind	.28* (.17, .40; S.E.=.06)	
CWBO	.46* (.35, .57; S.E.=.06); Direct R.E. = .16*	Low Mind	.17* (.07, .28; S.E.=.05)	.04* (.003, .08; S.E.=.02)
		Moderate Mind	.20* (.11, .31; S.E.=.05)	
		High Mind	.27* (.16, .38; S.E.=.06)	
Sample 6, <i>n</i> = 180				
Task Performance ^a	-.15* (-.24, -.08; S.E.=.04); Direct R.E. = .02	Low Mind	-.03 (-.09, .03; S.E.=.03)	-.05* (-.08, -.02; S.E.=.02)
		Moderate Mind	-.10* (-.15, -.05; S.E.=.03)	
		High Mind	-.16* (-.24, -.08; S.E.=.04)	
OCBI ^a	-.09* (-.17, -.01; S.E.=.04); Direct R.E. = -.04	Low Mind	-.02 (-.06, .02; S.E.=.02)	-.03* (-.06, -.002; S.E.=.01)
		Moderate Mind	-.05* (-.11, -.01; S.E.=.03)	
		High Mind	-.09* (-.18, -.01; S.E.=.04)	
OCBO ^a	-.18* (-.26, -.09; S.E.=.04); Direct R.E. = -.01	Low Mind	-.04 (-.10, .03; S.E.=.03)	-.05* (-.10, -.02; S.E.=.02)
		Moderate Mind	-.11* (-.17, -.06; S.E.=.03)	
		High Mind	-.19* (-.27, -.10; S.E.=.04)	
CWBI		Low Mind	.04 (-.03, .11; S.E.=.04)	.05* (.02, .10; S.E.=.02)

CWBO	.18* (.07, .30; S.E.=.06); Direct R.E. = .16*	Moderate Mind	.11* (.05, .19; S.E.=.04)	
		High Mind	.19* (.08, .30; S.E.=.06)	
		Low Mind	.04 (-.04, .12; S.E.=.04)	
	.18* (.08, .29; S.E.=.05); Direct R.E. = .21*	Moderate Mind	.12* (.05, .19; S.E.=.02)	.06* (.02, .10; S.E.=.02)
		High Mind	.20* (.10, .30; S.E.=.05)	

Notes. * = 95% confidence intervals (CI) did not include zero. Unstandardized coefficients (B) are reported with standard errors (S.E.). Direct R.E. = Direct Residual Effect; OCBI = organizational citizenship behavior that primarily benefits individuals; OCBO = organizational citizenship behavior that primarily benefits the organization; CWBI = counterproductive work behaviors that primarily harms individuals; CWBO = counterproductive work behaviors that primarily harms the organization; Mind = Mindfulness; Significant index of moderated-mediation indicate that moderated-mediation was achieved because difference between "low mindfulness" and "high mindfulness" conditions were significantly different.

^a = supervisor-rated

Appendix A

Mindfulness at Work: Impact and Interest

Mindfulness has become an emerging focus in management literature, as it has been linked to diverse benefits for individual functioning theorized to result largely from enhancing self-control (Glomb et al., 2011; Good et al., 2016). By increasing attentional, cognitive, emotional, and behavioral functioning, mindfulness supports improvements in workplace well-being, performance, and interpersonal relationships. Growing evidence from over 6,000 scientific papers on mindfulness from organizational science and other disciplines (American Mindfulness Research Association, 2020) attests to these benefits, which has spurred dramatic growth in workplace mindfulness practice.

While mindfulness has been operationalized in our field in at least four ways – state, trait, brief practice, and intervention (Good et al., 2016; Jamieson & Tuckey, 2017), trait mindfulness is the most widely used approach (e.g., Hülshager et al., In Press; Liang et al., 2018; Liu et al., In Press). Much of the interest in trait mindfulness stems from the ability to enhance this characteristic through empirically-validated training interventions (e.g., Baer, 2003; Kabat-Zinn, 2003), which then provides a practical strategy for eliciting the benefits linked to trait mindfulness. By developing capabilities to perform mindfulness-enhancing practices like meditation, individuals can then routinely self-induce state mindfulness, a momentary state of enhanced present-moment attention and awareness (Hülshager et al., 2013). Over time, repeatedly entering this state leads individuals to cultivate the propensity to exhibit enhanced present-moment attention and awareness (i.e., trait mindfulness; Jamieson & Tuckey, 2017). In short, mindfulness interventions have been shown to enhance both state (Hülshager et al., 2013) and trait mindfulness (Eberth & Sedlmeier, 2012; Eby et al., 2019; Jamieson & Tuckey, 2017),

and research shows that the benefits of mindfulness interventions can result through the mediating variable of trait mindfulness (e.g., Crain et al., 2017; Roeser et al., 2013).

Consequently, mindfulness techniques like meditation are practiced by 14% of the U.S. population (Clarke et al., 2018), and widespread organizational adoption, including among the Fortune 500, has led the mindfulness training industry to exceed \$1B in annual revenue in the U.S. alone (Gelles, 2015; Wieczner, 2016).

Regarding the benefits of mindfulness at work, undoubtedly the strongest evidence centers around well-being. Mindfulness – regardless of how it is operationalized – is negatively associated with stress, burnout, and physical and mental illness, and positively associated with engagement, job satisfaction, intrinsic motivation, work-family balance, and sleep quality and quantity (Allen & Kiburz, 2012; Bartlett et al., 2019; Bostock et al., 2019; Davidson et al., 2003; Wolever et al., 2012). In terms of work behaviors, mindfulness is also linked to greater task performance (Dane & Brummel, 2014), creativity (Montani et al., 2020), and prosocial (Hafenbrack et al., 2020) and safety behaviors (Dierynck et al., 2017; Zhang et al., 2013), and reduced workplace deviance (Liang et al., 2018; Long & Christian, 2015). Mindfulness is also related to positive relational behaviors, including leadership (Liang et al., 2016; Reb et al., 2014), team functioning (Yu & Zellmer-Bruhn, 2017), conflict resolution (Kay & Skarlicki, 2020), and communication (Beach et al., 2013).

These desirable workplace outcomes are largely theorized to occur because mindfulness bolsters self-control (Glomb et al., 2011; Good et al., 2016; Hülshager et al., In Press; Long & Christian, 2015). The underlying assumption in organizational research that mindfulness benefits individuals through self-control is built on evidence from basic disciplines, like psychology and neuroscience. This line of work shows that being mindful enhances self-control (e.g., Papies et

al., 2014), which is reflected by superior emotional regulation (Chambers et al., 2009) and reduced impulse-driven behaviors like gambling (Lakey et al., 2007), overeating (Kristeller & Wolever, 2010), and smoking (Tang et al., 2013). Further, these effects are supported by changes in brain structure and functioning (Tang et al., 2015). Taken together, this evidence shows multidisciplinary consensus on two points: mindfulness is good for individuals, and mindfulness is good largely because of its positive association with self-control.

Appendix B

Nesting Effect Analysis and Re-Analysis Using Structural Equation Modeling

We first tested for possible nesting effects in all four Study 2 samples because supervisors provided performance ratings (task performance, OCBI, and OCBO) for subordinates and, in some cases, the same supervisor rated multiple subordinates. We therefore examined if a random coefficient approach would be necessary using hierarchical linear modeling, allowing for random slopes and intercepts to account for nonindependence among these variables. Deviance tests found that none of the random slopes or intercepts were significant, indicating no substantial differences for any of the performance variables. According to the standards set forth by Biese (2000), intraclass correlation coefficients (ICC) using these grouping variables were low: task performance [Sample 3: $ICC(1) = .02$; Sample 4: $ICC(1) = .04$; Sample 5: $ICC(1) = .04$; Sample 6: $ICC(1) = .01$], OCBI [Sample 3: $ICC(1) = .01$; Sample 4: $ICC(1) = .04$; Sample 5: $ICC(1) = .02$; Sample 6: $ICC(1) = .04$], and OCBO [Sample 3: $ICC(1) = .04$; Sample 4: $ICC(1) = .03$; Sample 5: $ICC(1) = .02$; Sample 6: $ICC(1) = .03$]. These results suggest that our data were not influenced by nonindependence biases, justifying the appropriateness of using PROCESS and structural equation modeling (Bliese, 2000; LeBreton & Senter, 2008; Snijders & Bosker, 2011) opposed to hierarchical linear modeling.

Our Study 1 and 2 SEM results are presented in Figures 8 and 9, respectively. Hypothesis 1 was again supported as surface acting was positively related to self-control depletion. Hypothesis 2, which predicted that the relationship between surface acting and self-control depletion would be moderated by mindfulness, such that the relationship would be higher for those with higher levels of mindfulness, was again supported.⁶ We again found support for

⁶ In a separate set of analyses, we tested all of our hypotheses (in all samples) with five control variables [employee gender, organizational tenure, negative affectivity (Watson et al., 1988), sleep quantity (Lanaj et al., 2014), and

Hypotheses 3a-e and 4a-e, which predicted that the five surface acting-employee performance relationships would be mediated by self-control depletion, such that this mediated effect would be stronger for more mindful individuals. We used 10,000 resamples to estimate the indirect effect and confidence intervals, as well as to calculate mod-med coefficients to determine if the indirect effect of surface acting was moderated by mindfulness. The significant mod-med coefficients for task performance, OCBI, OCBO, CWBI, and CWBO indicate that the mediated effect of self-control depletion on the surface acting-employee performance relationships is stronger for individuals with relatively high mindfulness than for those with relatively low levels of mindfulness. These findings confirmed our previous results for Hypotheses 1, 2, 3, and 4.

The simple slopes and interaction plots generated from SEM were very similar to the PROCESS results presented in the manuscript. They are available upon request. For all analyses we conducted confirmatory factor analyses (CFA). The CFA results are indicated in Tables B1 and B2.

*****Place Tables B1 and B2 about here*****

employee workload (Spector & Jex, 1998)] and our results were consistent, regardless of the analytic technique (e.g., SEM, PROCESS) used. These results are available upon request.

Table B1.
Study 1 Confirmatory Factor Analyses (CFA) of Various Models

Number of Factors	<u>CFI</u>		<u>SRMR</u>		<u>RMSEA</u>	
	S1	S2	S1	S2	S1	S2
3	.95	.96	.07	.05	.07	.06
2 ^a	.87	.80	.07	.07	.11	.13
2 ^b	.80	.80	.10	.08	.13	.13
2 ^c	.74	.77	.11	.09	.15	.14
1	.67	.66	.10	.09	.17	.17

Notes: S1: Sample 1, $N = 209$; S2: Sample 2, $N = 397$; CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation

a. Surface acting and self-control depletion were loaded on a single factor

b. Surface acting and mindfulness were loaded on a single factor

c. Self-control depletion and mindfulness were loaded on a single factor

Table B2.
Study 2 Confirmatory Factor Analyses (CFA) of Various Models

Number of Factors	<u>CFI</u>				<u>SRMR</u>				<u>RMSEA</u>			
	S3	S4	S5	S6	S3	S4	S5	S6	S3	S4	S5	S6
8	.93	.95	.95	.92	.08	.07	.07	.08	.08	.06	.06	.08
7 ^a	.88	.89	.90	.86	.10	.09	.10	.11	.13	.11	.09	.12
7 ^b	.85	.84	.85	.86	.11	.09	.10	.10	.13	.11	.11	.12
6 ^c	.82	.87	.86	.81	.12	.10	.10	.11	.16	.13	.12	.16
5 ^d	.80	.85	.79	.78	.11	.12	.11	.10	.17	.15	.16	.16
4 ^e	.63	.68	.69	.69	.14	.12	.12	.13	.19	.16	.16	.18

Notes: S3: Sample 3, $N = 196$; S4: Sample 4, $N = 409$; S5: Sample 5, $N = 290$; S6: Sample 6, $N = 180$; CFI = comparative fit index; SRMR = standardized root mean square residual; RMSEA = root mean square error of approximation

a. OCBI and OCBO were loaded on a single factor

b. CWBI and CWBO were loaded on a single factor

c. Task performance, OCBI, and OCBO were loaded on a single factor

d. Desirable (task performance, OCBI, and OCBO) and undesirable (CWBI and CWBO) were loaded on two separate factors

e. All performance variables were loaded on a single factor

Appendix C

Supplemental Analyses Replicating Prior Research on Mindfulness

As mentioned earlier, we wanted to demonstrate that our results are consistent with prior research in some important ways. First, as noted earlier in Study 1 and 2 results, we consistently found that mindfulness is negatively related to surface acting. Next and consistent with previous research (e.g., Glomb et al., 2011; Good et al., 2016; Hülshager et al., In Press; Lian et al., 2017; Liang et al., 2016, 2018; Long & Christian, 2015), we wanted to demonstrate that mindfulness affects performance through self-control. We also found support for this in our data in all four samples of Study 2 (Samples 3-6). As indicated in Table C1, self-control depletion mediated the relationship between mindfulness and all five dimensions of employee performance. These supplementary results provide evidence that our findings are robust across samples and settings and unlikely to be the result of methodological artifacts. Thus, while our primary findings about the “dark side” of mindfulness are novel and important, these additional findings are consistent with prior research.

***** Place Table C1 about here *****

Table C1.

Simple Indirect Effects of Mindfulness on Five Employee Performance Dimensions via Self-Control Depletion (Study 2 Supplemental Analyses)

Dependent Variable	Indirect Effect (Simple Mediation; 95% CI)
Sample 3, <i>n</i> = 196	
Task Performance ^a	.06* (.01, .13; S.E.=.03)
OCBI ^a	.07* (.01, .15; S.E.=.04)
OCBO ^a	.05* (.01, .13; S.E.=.03)
CWBI	-.08* (-.17, -.03; S.E.=.04)
CWBO	-.10* (-.15, -.02; S.E.=.03)
Sample 4, <i>n</i> = 409	
Task Performance ^a	.15* (.09, .21; S.E.=.03)
OCBI ^a	.15* (.10, .20; S.E.=.03)
OCBO ^a	.16* (.10, .24; S.E.=.03)
CWBI	-.13* (-.19, -.09; S.E.=.02)
CWBO	-.15* (-.20, -.11; S.E.=.03)
Sample 5, <i>n</i> = 290	
Task Performance ^a	.14* (.06, .23; S.E.=.04)
OCBI ^a	.14* (.06, .22; S.E.=.04)
OCBO ^a	.18* (.09, .27; S.E.=.04)
CWBI	-.41* (-.54, -.25; S.E.=.07)
CWBO	-.40* (-.50, -.26; S.E.=.06)
Sample 6, <i>n</i> = 180	
Task Performance ^a	.06* (.02, .15; S.E.=.03)
OCBI ^a	.07* (.01, .17; S.E.=.04)
OCBO ^a	.08* (.02, .16; S.E.=.04)
CWBI	-.09* (-.18, -.03; S.E.=.04)
CWBO	-.13* (-.23, -.07; S.E.=.04)

Notes. * = 95% confidence intervals (CI) did not include zero. Unstandardized coefficients (B) are reported with standard errors (S.E.). OCBI = organizational citizenship behavior that primarily benefits individuals; OCBO = organizational citizenship behavior that primarily benefits the organization; CWBI = counterproductive work behaviors that primarily harms individuals; CWBO = counterproductive work behaviors that primarily harms the organization.

^a = supervisor-rated