Abstract

Breach of the psychological contract between organization and employee often evokes employee hostility, which in turn can instigate deviant behaviors. We examine whether employee mindfulness attenuates these reactions to psychological contract breach. Specifically, we develop and test a two-stage moderated mediation model in which employee mindfulness moderates the mediational path from psychological contract breach via hostility to deviance by attenuating both emotional and behavioral reactions. Findings across four studies (with 872 employee participants) both measuring and manipulating breach and mindfulness demonstrate substantial support for the proposed model. Further analyses including alternative moderators, mediators, and dependent variables provide evidence for discriminatory and incremental validity. We discuss theoretical and practical implications as well as future research avenues.

Keywords: psychological contract breach, mindfulness, hostility, organizational deviance

Mindfulness Attenuates both Emotional and Behavioral Reactions Following Psychological Contract Breach: A Two-Stage Moderated Mediation Model

After two years of … watching my employers not keep any of the promises made at the time of recruitment, I want to leave the company… I've observed and documented enough to ruin their credibility and destroy their business.

Anonymous employee post on "Workplace Practices" (2020)

Employee deviance is estimated to cost organizations billions and a staggering 90% of employees admit to engaging in deviant behaviors of varying severity, ranging from purposefully slowing down work (what Taylor referred to as "soldiering" as early as 1895, cf. Vardi & Weitz, 2003) and intentionally arriving late at work to ignoring supervisor instructions and producing poor-quality work (Bennett, Marasi, & Locklear, 2018). A common cause of employee deviance is a desire to get even after psychological contract breach – the perception of employees that their organization has failed to fulfill its side of the deal (Rousseau, 1989). Examples of psychological contract breach include employers reneging on promised career development opportunities (e.g., interesting assignments, promotions), on promised work arrangements (e.g., flextime, working from home), or on promised compensation (e.g., salary raises, bonuses). Psychological contract breach often evokes hostility towards the organization (Conway & Briner, 2005; Zhao, Wayne, Glibkowski, & Bravo, 2007). Hostility is a form of negative affect that involves feelings ranging from minor frustrations to excessive anger or fury (e.g. Watson & Clark, 1994). It produces antagonistic tendencies (see Frijda, Kuipers, & Ter Schure, 1989) setting off the desire for deviance and revenge amongst employees towards the organization, as illustrated in the opening quote ("Workplace Practices," 2020).

The flow from psychological contract breach via hostility to employee deviance is, however, not inevitable. In particular, given that psychological contracts are "idiosyncratic and

unique" (Rousseau, 1995, p. 10) to each employee, scholars have argued for, and begun to investigate, individual differences as promising moderators of employee reactions to breach (e.g. (Garcia, Bordia, Restubog, & Caines, 2018; Restubog, Zagenczyk, Bordia, Bordia, & Chapman, 2015). In the present research, we examine whether individual differences can mitigate deviant reactions to psychological contract breach from the perspective of mindfulness. Mindfulness can be viewed as a psychological construct involving present-centered attention and orientation towards life through processes of self-awareness, self-regulation, and self-transcendence (Vago & Silbersweig, 2012), as well as a set of practices to increase this present-centered attention and orientation. Rooted in Eastern contemplative traditions, mindfulness has become increasingly popular with individuals and organizations, with estimates of approximately 22% of U.S. employers offering some form of mindfulness training to their employees (MarketdataEnterprises, 2017). This popularity is based on a substantial body of research attesting to the benefits of mindfulness for health and well-being (e.g. Khoury et al., 2013).

Research suggests that improved self-regulation acts as a key mechanism underlying the benefits of mindfulness (e.g., Glomb, Duffy, Bono, & Yang, 2011; Vago & Silbersweig, 2012), and that mindfulness helps regulate negative emotions (Chambers, Gullone, & Allen, 2009). This self-regulatory perspective is consistent with theoretical accounts in the psychological contract literature emphasizing the role of self-regulation (Schalk & Roe, 2007) in reactions to breach. For example, Tomprou, Rousseau, and Hansen (2015) in their conceptual work highlight the role of self-regulation in reducing inconsistencies between employees' psychological contracts and their actual experiences in employment; and in mitigating emotions evoked by unfulfilled promises.

Integrating psychological contract and mindfulness theorizing, we develop and test across four studies a two-stage moderated mediation model of employee reactions to psychological contract breach. The model (see Figure 1) proposes that employee mindfulness plays an

attenuating role at two stages: first, attenuating the relation between psychological contract breach and employee hostility (i.e., emotion regulation to breach); and, second, attenuating the relation between hostility and organizational deviance (i.e., behavior regulation to hostility).

In testing this model, our research makes several theoretical contributions. First, our research contributes to the literature on mindfulness at work. While this literature has grown substantially over recent years, most of the research has treated mindfulness as an independent variable and examined its relation with outcomes such as employee performance and wellbeing (e.g. Good et al., 2016; Reb & Atkins, 2015). The few studies investigating the moderating role of employee mindfulness have taken different conceptual and empirical approaches. For example, some studies only examined moderation, not moderated mediation, and did not specify at which stage mindfulness moderates (e.g., at the link between events and emotions, or emotions and behaviors; e.g., Feltman, Robinson, & Ode, 2009; Levesque & Brown, 2007). Other studies examined models in which mindfulness moderates the link between events and employee emotional reactions to these events (e.g., Long & Christian, 2015), and yet other research has argued that mindfulness moderates the link between emotions and behavioral reactions (e.g., Liang et al., 2016). In the present research, we integrate these findings by theorizing and testing a more comprehensive two-stage moderated mediation model in which mindfulness both attenuates emotional responses to experiences (i.e. hostility in response to breach events) by helping people "step back" and observe their experiences, rather than getting too identified with them (Teper, Segal, & Inzlicht, 2013); and at the same time reduces the behavioral consequences of hostility by helping people accept whatever emotions they experience without necessarily having to react to them behaviorally (Campbell-Sills, Barlow, Brown, & Hofmann, 2006).

Second, we contribute to the psychological contract literature. Many studies have focused on average employee reactions to psychological contract breach under different situational or organizational conditions (e.g., Kiewitz, Restubog, Zagenczyk, & Hochwarter, 2009; Turnley &

Feldman, 1999), with less consideration given to how such reactions vary across individuals. Moreover, research on individual differences as moderators has mainly focused on the Big 5 personality traits (e.g., Ho, Weingart, & Rousseau, 2004). When incidents of breach occur, different people may interpret and react to them differently since psychological contracts reside "in the eye of the beholder" " (Rousseau, 1989, p. 123). These different reactions can emerge as a result of differences in self-regulation (Schalk & Roe, 2007; Tomprou et al., 2015). We empirically test these ideas by examining the role of mindfulness in attenuating employee hostility and deviance in the face of breach.

Third, our research also provides further evidence on whether mindfulness can behave in a homologous manner across the state and the trait level. Some past research has indeed found such homology, such as in studies on supervisor aggression (Liang et al., 2018), sunk cost decision making (Hafenbrack, Kinias, & Barsade, 2014), and retaliation to injustice (Long & Christian, 2015). In contrast, other research suggests differences between state and trait mindfulness such as in research on arousal (Hafenbrack & Vohs, 2018) and subjective vitality (Brown & Ryan, 2003).

Theorizing and Hypotheses Development

Psychological Contract Breach, Hostility, and Organizational Deviance

The idea of a psychological contract emanates from the recognition that not all obligations towards employees can be specified in a formal contract. Theoretically, psychological contracts can be viewed from social exchange theory (Aselage & Eisenberger, 2003; Blau, 1964), which is underlined by the norm of reciprocity (Cialdini, 1993; Gouldner, 1960). Reciprocity has been further divided into positive and negative reciprocity (Eisenberger, Lynch, Aselage, & Rohdieck, 2004). For the purpose of this paper, we focus on the negative reciprocity norm which involves individuals' acts of getting even against individuals or organizations in response to unfavorable treatment (Chiu & Peng, 2008).

From this perspective, employees may see a breach of psychological contract as misconduct on the part of the organization. Breach often evokes not just a mild emotional response, but a "deeper and more intense response, akin to anger and moral outrage" (Rousseau, 1989, p. 128), or feelings of hostility towards the organization (Conway & Briner, 2005). These emotions may coexist with: preoccupation with the event that generated these (rumination), displaying anger and distress outwardly, and changes in the activity of the autonomic nervous system (increased blood pressure and heart rate, Oatley, 1992) (Morrison & Robinson, 1997).

The breach of the psychological contract may leave employees feeling dissatisfied and experiencing cognitive dissonance (Ho et al., 2004). To achieve cognitive balance, employees are likely to engage in deviance as a way to get even (Chiu & Peng, 2008). Thus, the experience of psychological contract breach can lead to emotional reactions in the form of hostility and behavioral reactions in the form of deviance. The emotional reaction may motivate the behavioral reactions, thus acting as a mediating mechanism: Breach evokes employee hostility, which motivates deviance (Restubog et al., 2015).

The Moderating Role of Employee Mindfulness

Importantly, we argue that the link between psychological contract breach, hostility, and deviance towards the organization is not uniform across all employees but depends on self-regulatory processes. Indeed, recent theoretical accounts in the psychological contract literature emphasize the role of "conscious and deliberate forms of self-regulation" (Schalk & Roe, 2007, p. 173) in reactions to breach. Self-regulation influences impulses, emotions, decisions, and behaviors (Baumeister & Heatherton, 1996; Thau & Mitchell, 2010). Self-regulation can help to "inhibit, override, or alter responses that may arise as a result of physiological processes, habit, learning, or the press of the situation" (Schmeichel & Baumeister, 2004, p. 86).

Over the past decades, psychological research has established mindfulness as a powerful self-regulatory mechanism (e.g., Chambers, Gullone, & Allen, 2009; Vago & Silbersweig, 2012)

and organizational scholars have more recently begun to take note (Good et al., 2016; Reb & Atkins, 2015). Glomb, Duffy, Bono, and Yang (2011) highlight two key mindfulness processes for improved self-regulatory functioning: decoupling of experiences, thoughts, and feelings from the self and reduced automaticity. These two processes are thought to work together, affording individuals the ability for flexible responding, both emotionally and behaviorally. Decoupling reduces ego-involvement, thus enabling individuals to take a more detached view of events and experiences (Good et al., 2016). As a result, negative experiences are perceived as less threatening, reducing their emotional impact (Kernis, Paradise, Whitaker, Wheatman, & Goldman, 2000). Reduced automaticity derails internal reactivity, thus allowing individuals to pause and step back when facing negative events (Scott & Duffy, 2015).

Through these self-regulatory processes, mindfulness may help employees to regulate and reduce hostility following experiences of psychological contract breach. Specifically, mindful employees may be better able to decouple and detach themselves from their experience (Feldman, Greeson, & Senville, 2010), allowing them to consider the unfulfilled obligation from different perspectives, as well as consider alternative attributions and extenuating factors. As such, thoughts about the organization not fulfilling its obligation will be seen as events in the mind, which may or may not correspond closely to whether an actual breach has occurred. In this way, the link between breach, hostility, and organizational deviance (i.e., deviance directed at the organization) is loosened and more flexible responding is enabled (Brown & Ryan, 2003).

In addition, mindful employees may also be better able to accept any hostility that does arise (Teper et al., 2013). This acceptance may enable mindful employees to attend to and accept the initial "pang" associated with the psychological contract breach and efficiently recruit regulatory resources to prevent a full-blown emotional reaction. Taken together, we, therefore, hypothesize the following first-stage moderation.

H1: Mindfulness moderates the positive relation between psychological contract breach

and hostility such that that the relation is weaker at higher levels of mindfulness.

In addition, we argue that mindfulness also attenuates the link between hostility and organizational deviance, through similar self-regulatory processes. Specifically, through decoupling and reduced automaticity, mindfulness weakens the tendency to impulsively act out emotions of hostility, affording employees the space to respond more considerately. Doing so reduces the likelihood of choosing actions (e.g., retaliating with deviance against the organization) that are inconsistent with employees' interests and goals (e.g., not facing disciplinary action or keeping on good terms with the organization) (Liang et al., 2016).

This regulation of behavioral reactions to emotion is further supported by acceptance of negative emotions, such as hostility, as natural experiences that come and go and that need to be neither suppressed nor acted upon (Brown, Ryan, & Creswell, 2007). Such acceptance of negative emotional experiences may aid in diffusing them quickly, consistent with research on thought suppression (e.g., Wegner, 1994). In that way, mindfulness may be as effective in rapid recovery from hostility by mitigating responses to the emotion, as by reducing emotional reactions to arousing stimuli (such as breach) (Erisman & Roemer, 2010). Thus, we also hypothesize the following second-stage moderation.

H2: Mindfulness moderates the positive relation between hostility and organizational deviance such that the relation is weaker at higher levels of mindfulness.

[Insert Figure 1 about here]

Overview of Studies

We tested this two-stage moderated mediation model across four studies[1]. In Study 1, a field study, we measured perceptions of psychological contract breach, hostility, organizational deviance, and mindfulness to conduct a first test of the entire model. We also included self-

[1] We complied with American Psychological Association ethical guidelines in designing and conducting the research. At the time of data collection, the institution at which the data was collected had an interim Institutional Review Board and the data were collected as per their guidelines.

control capacity as an alternative moderator and employee voice as an alternative dependent variable in order to examine discriminant validity. We chose self-control capacity as it has established self-regulatory benefits (Lian et al., 2014) but our theorizing does not apply to it. We chose voice as it is an established reaction to breach (Ng, Feldman, & Butts, 2014), but based on our theorizing its relation to breach should not be attenuated by mindfulness. To strengthen our ability to draw causal inferences, in Study 2 we developed breach vignettes to experimentally manipulate psychological contract breach and measure mindfulness, hostility, and organizational deviance. Finally, to further improve internal validity, extend the generalizability of findings to state mindfulness, and strengthen practical implications, Studies 3 and 4 also manipulated mindfulness. Study 3 used mind-wandering as an active control condition (see Hafenbrack et al., 2014) and included attributions of blame and intentionality as well as perceived justice as additional mediators to examine incremental validity. It also included turnover intentions as an alternative dependent variable to establish discriminant validity, similar to Study 1. We chose turnover intentions as it is an established reaction to breach (Zhao et al., 2007), but based on our theorizing its relation with breach should not be attenuated by mindfulness. Study 4 manipulated mindfulness at different stages of the mediational process to allow for a more fine-grained examination of its attenuating effect.

Study 1

Sample and Procedure

Data were obtained from employees working in a wide range of occupations and industries in India (i.e. pharmaceutical, education, IT, retail, and chemicals). The HR managers in the respective companies were contacted for data collection. The questionnaires were distributed amongst the employees by two research associates. Of the 536 questionnaires distributed to employees, 269 completed questionnaires were returned. Of these, 34 were incomplete, resulting in 234 usable questionnaires (43.7% response rate). Of the 234

respondents, 85% were male, the average age was 29 years (SD = 6.5) and the average organizational tenure was 5.8 years (SD = 3.3). In terms of education, 57% had received at least an undergraduate or a first degree.

Measures

Psychological contract breach (PCB). We measured psychological contract breach using the five-item scale developed by Robinson and Morrison (2000) A 5-point scale was used to record responses (1 = strongly disagree; 5 = strongly agree). A sample item is "My employer has broken many of its promises to me even though I have upheld my side of the deal".

Hostility. We assessed hostility towards the organization with the hostility subscale of the Positive and Negative Affect Schedule – Expanded Form (PANAS-X; Watson & Clark, 1994). This subscale consists of six adjectives: angry, hostile, irritable, scornful, disgusted, loathing. For each item, employees rated the extent to which they felt this way about their organization (1 = very slightly or not at all; 5 = extremely).

Organizational deviance. We assessed organizational deviance with a measure developed by Aquino, Lewis, and Bradfield (1999). The nine items asked respondents to indicate the number of times within the last six months that they had engaged in the behavior described (1 = never; 5 = always). A sample item is "intentionally arrived late for work".

Mindfulness. We measured employee mindfulness using the fifteen-item Mindfulness Attention Awareness Scale (MAAS; Brown & Ryan, 2003). Employees used a 6-point scale (1: almost never; 6: almost always). A sample item is "It seems I am running on automatic, without much awareness of what I'm doing". Because all items are negatively worded to indicate a lack of mindfulness, we reverse-scored them such that higher values indicate higher mindfulness.

Control and discriminant validity variables. Consistent with past research on psychological contracts and deviance, we controlled for the effects of gender and organizational tenure (Berry, Ones, & Sackett, 2007). To provide evidence for discriminant validity, we also

assessed employee self-control capacity as an alternative moderator and employee voice as an alternative dependent variable. Self-control capacity was measured with a twenty-five item scale on a 7-point scale (1: never true; 7: always true) (Ciarocco, Twenge, Muraven, & Tice, 2007). A sample item is "If I were tempted by something, it would be very difficult to resist). Employee voice was measured using a five-item scale on a 5-point scale (1: Definitely not; 5: Definitely yes) (Turnley & Feldman, 1999). A sample item is "I sometimes discuss problems at work with my employer".

Results and Discussion

Confirmatory Factor Analysis (CFA)

Prior to testing our hypotheses, we examined the fit of the measurement model via a CFA using AMOS 25. This analysis confirmed that given the sample size, the proposed four-factor measurement model was an adequate fit (Browne & Cudeck, 1992; Hu & Bentler, 1998) and was better than alternate models, x^2 (545, N = 234) = 1050.17, p < .001, CFI = .85, IFI = .86, TLI = .84, SRMR = .07, RMSEA = .06. This model was better fitting than an alternate three-factor model combining psychological contract breach and hostility, x^2 (547, N = 234) = 1133.50, p < .001, CFI = .83, IFI = .83, TLI = .81, SRMR = .07, RMSEA = .07, and an alternate single-factor model that loaded all the variables on a single factor, x^2 (550, N = 234) = 2010.28, p < .001, CFI = .57, IFI = .58, TLI = .53, SRMR = .11, RMSEA = .11. The CFA results indicate discriminant validity support for the distinctiveness of the study variables.

Preliminary Analyses

Table 1 shows the descriptive statistics including means, standard deviations, correlations, and reliabilities. All correlation, regression, and analysis of variance (ANOVA) analyses in this and subsequent studies were conducted with SPSS 26. Correlations were in their expected directions, such that breach was positively related to hostility, r = .28, p < .001, and to organizational deviance, r = .23, p < .001, and hostility was positively related to deviance, r

= .39, p < .001. We also found that breach had a significant indirect effect on organizational deviance (.11; bootstrapped CI: .05 to .19) through hostility. Moreover, the direct effect of breach on deviance, after including hostility, became non-significant, (.12; p = .08, CI: -.01 to .25), suggesting full mediation.

Hypotheses Tests

Here and in subsequent studies, we tested the moderated mediation Hypotheses 1 and 2 running a two-stage moderated mediation model using Hayes' (2013) PROCESS 3.5 Model 58. We found evidence for both first-stage and second-stage moderated mediation. First, mindfulness moderated the relation between breach and hostility (see Table 2). The shape of the moderation is consistent with the expected attenuating effect (see Figure 2). The conditional effect of breach on hostility was strongest at lower levels of mindfulness (-1SD, or 3.64); B = .54, SE(B) = .13, p < .001), moderate at mean (4.49) levels (B = .38, SE(B) = .08, p < .001), and weakest at higher (+1SD, 5.34) levels (B = .21, SE(B) = .10, p < .05).

Second, we found that mindfulness also moderated the relation between hostility and organizational deviance (see Table 2). The shape of this second-stage moderation is also consistent with attenuation (see Figure 3). Specifically, the conditional effect of hostility on deviance was significant when mindfulness was lower (-1SD; B = .38, SE(B) = .05, p < .001) and average (B = .14, SE(B) = .05, p < .01), but not significant when mindfulness was higher (+1SD; B = -.11, SE(B) = .07, ns). Moreover, the conditional indirect effect of breach on deviance through hostility was significant at lower (.20, bootstrapped CI: .07 to .37) and mean (.05, bootstrapped CI: .01 to .10) levels of mindfulness, but not at higher levels (-.02, bootstrapped CI: -.07 to .01).

[Insert Tables 1 & 2 and Figures 2 & 3 about here]

Discriminant Validity

To provide evidence for discriminant validity, we next examined self-control capacity as

an alternative moderator. We found that self-control capacity did not moderate the relation between breach and hostility (B = -.09, SE(B) = .12, p = .47), but it did attenuate the relation between hostility and organizational deviance (B = -.19, SE(B) = .07, p < .01). Further, the conditional indirect effects of breach on organizational deviance via hostility were not significant at lower, average, and higher levels of self-control capacity.

In addition, we also entered employee voice as a dependent variable instead of organizational deviance and conducted the same analyses. Results at the first stage of the model remained the same, of course, as the variables remained the same. At the second stage, mindfulness did not attenuate the relation between hostility and voice. If anything, while the interaction effect did not quite reach conventional level (B = .11, SE(B) = .06, p = .07), the conditional effect of hostility on voice tended towards positive at higher levels of mindfulness (+1SD, B = .17, SE(B) = .09, p = .08), and so did the conditional indirect effect of breach on voice through hostility (.04, bootstrapped CI: -.01 to .11).

Discussion

Overall, the results provide externally valid support for the two-stage moderated mediation model (Figure 1), such that mindfulness attenuated the relation between breach and hostility as well as the relation between hostility and organizational deviance. The second-stage moderation appeared somewhat stronger than the first-stage, in that the relation between hostility and organizational deviance became entirely non-significant at higher (+1SD) levels of mindfulness, whereas the relation between breach and hostility became weaker but remained significant even at higher (+1SD) levels of mindfulness.

Additional discriminant validity analyses found that the two-stage moderated mediation model did not hold for self-control capacity. Specifically, self-control capacity only helped to weaken the relation between hostility and organizational deviance, but – unlike mindfulness – did not seem to help employees decouple from the experience and change their emotional

response. This is consistent with the idea that self-control involves the effortful suppression of behavioral impulses through willpower (Baumeister & Heatherton, 1996) and suggests an advantage of mindful self-regulation. The finding also provides some reassurance that the model holds specifically for mindfulness and not for any variable related to self-regulation.

Similarly, the results for employee voice suggest that mindfulness does not attenuate all behavioral reactions to breach – perhaps making employees generally more passive – but attenuates specifically deviant behaviors. If anything, voice behaviors were somewhat stronger for more mindful employees. This is interesting, as voice could be considered a productive way of responding to a breach experience, as compared to often counterproductive deviance.

A limitation of Study 1 is that it was a field study using cross-sectional data hence limiting the extent to which cause-effect relationships can be confidently inferred. To strengthen internal validity, in Study 2 we conducted an experimental study in which we manipulated the independent variable, psychological contract breach. An experimental approach complements existing research on psychological contracts that typically has adopted either a survey approach or a qualitative interview method (Coyle-Shapiro & Parzefall, 2008). We decided to go with a vignette-based experiment as such an approach is particularly well-suited for investigating subjective responses to stimulus events (Lind & Tyler, 1988). Using vignettes also helps avoid ethical issues associated with manipulating actual breach experiences and helps to control crucial information essential to manipulating the breach variable (Ho et al., 2004).

Study 2

Sample

Data were obtained from employees working in four India-based IT companies. The HR managers in the respective companies were approached for the data collection which took place during different training programs. Of the 350 questionnaires distributed, 304 were returned. Of these, 44 were incomplete, resulting in a final sample of 260 usable questionnaires (response rate

of 74.2 %). Of the 260 participants, 95% were men. 56% represented the age group 20-29, 30.4% the group 30-39, and 10.4% the group 40-49. Participants had an average organizational tenure of 4.1 years (SD = 3.4), and 42.7% had received at least an undergraduate or a first degree.

Design and Procedure

This study employed an experimental design with one factor, psychological contract breach, manipulated across two between-subject conditions (0: control, 1: breach). Each participant was randomly assigned to one of the two experimental conditions and given a survey to complete in their organization. The survey first assessed trait mindfulness. Depending on their condition, participants then responded to a set of three psychological contract breach or three control vignettes (see Appendix). Three vignettes were used to increase the reliability of measurement. After reading each vignette, participants indicated the extent to which they would experience hostility and engage in deviant behaviors if they were the employee in the scenario.

Manipulation and Materials

Breach was manipulated by presenting vignettes that contained a work event in which the organization, through a supervisor, breached the psychological contract with the employee. Given the scarcity of research on psychological contracts using an experimental approach, we decided to create and validate a set of vignettes specifically for the current study. To increase realism and external validity, one of the authors drafted the vignettes based on actual stories collected from multiple sources[2] where people shared their work experiences. Based on these stories, 5 pairs of vignettes (5 parallel versions of breach and control) were created. Each pair contained a common core with information about an employee and a promise made as part of the psychological contract. In the breach condition only, the vignette contained information relevant to the breach of the psychological contract. Because we were interested in the participants'

[2] The sources include (1) stories posted on the askamanager.org blog; (2) a case from O'Leary-Kelly, Henderson, Anand, & Ashforth (2014, p. 344); (3) a case from Rousseau & Anton (1991, p. 292); 4) a case from Conway & Briner (2005, p. 141).

responses if they were in the situation, we did not provide information on the protagonist's interpretation of, or reaction to, the psychological contract breach.

The initial pool of vignettes was pilot tested with 36 evaluators consisting of full-time employees, recruited through the alumni mailing list of a South Asian University. These evaluators were asked to imagine themselves in the situations described. To assess whether the event in each vignette was indeed experienced as a broken promise, we used four items adapted from Robinson and Morrison (2000). The measure used a 5-point scale (1 = strongly disagree; 5 = strongly agree). A sample item is "I would feel that my organization has violated the contract between us". Inclusion of vignettes for the main study was based on the following criteria: for each pair of scenarios (i.e., psychological contract breach vs. control), the mean score should be significantly higher in the experimental condition than in the control condition; for psychological contract breach scenarios, the mean score should be significantly higher than 3, the midpoint of the scale; and for control scenarios, the mean score should not be significantly higher than 3. Based on these criteria, three pairs of vignettes were selected for the main study, with each pair having a psychological contract breach and a control version (see Appendix for full text). Because the vignettes were validated in this sample, no manipulation check was included in the main study to avoid a demand effect and reduce participant fatigue.

Measures

Mindfulness, hostility, and organizational deviance were measured with the same scales as in Study 1. To ease reporting we collapsed the measures across the three scenarios after mean-centering scores for each scenario. We controlled for gender (male = 1 and female = 2) and age (five age groups) (Berry et al., 2007). However, given that the present study used an experiment manipulating the independent variable, the use of control variables is debatable. As such, we also conducted all analyses without the control variables. These analyses showed equivalent results.

Results and Discussion

Preliminary Analyses

Table 3 shows the means, standard deviations, reliabilities, and correlations. All correlations were in the expected directions. We examined the experimental effect on all variables. As expected, hostility (M = .31 vs. M = -.31) and organizational deviance (M = .37 vs. M = -.37) were significantly higher in the breach condition, both $p < .001$. Note that the breach manipulation did not affect mindfulness (M = 2.56 vs. M = 2.63, $p = .53$), providing evidence of discriminant validity and alleviating concerns that the manipulation may have for some reason affected the moderator and induced a confound such as a different use of the response scales across conditions (e.g., more negative responses). Further, mediation analyses found that the psychological contract breach manipulation had a significant indirect effect on organizational deviance (.37; CI: .30 to .44, $p <.001$) through hostility.

Hypotheses Tests

We again found evidence for both first-stage and second-stage moderated mediation. Consistent with Hypothesis 1, mindfulness acted as first-stage moderator of the experimental effect on hostility in the expected direction (see Table 4 and Figure 4). The conditional effect of psychological contract breach on hostility was stronger at lower levels of mindfulness (-1SD, or 3.53; B = 1.05, SE(B) = .07, $p < .001$), and weaker at higher (+1SD, 5.27) levels (B = .15, SE(B) = .07, $p < .05$).

Second, we found that mindfulness also moderated the relation between hostility and organizational deviance in the expected direction (see Table 4 and Figure 5). Specifically, the conditional effect of hostility on deviance was stronger when mindfulness was lower (-1SD, B = .87, SE(B) = .04, $p < .001$) and weaker when mindfulness was higher (+1SD, B = .65, SE(B) = .04, $p < .001$).

[Insert Tables 3 & 4 and Figures 4 & 5 about here]

Overall, Study 2 provided an important replication of Study 1 findings using a very

different operationalization of psychological contract breach (measured in Study 1, manipulated via validated vignettes in Study 2) and a different sample. The study used an experimental design with strong internal validity and the ability to draw causal conclusions regarding the effect of breach. However, a limitation of both Studies 1 and 2 is that mindfulness was measured, thus being subject to concerns about the accuracy of self-reported mindfulness (e.g., Grossman, Niemann, Schmidt, & Walach, 2004; Van Dam, Earleywine, & Borders, 2010), as well the usual concerns related to inferring causality from cross-sectional designs. To address this limitation, in Study 3 we manipulated both mindfulness and breach.

Moreover, in response to reviewer concerns about hostility specifically as a mediating mechanism, in Study 3 we measured additional possible mediators beyond hostility. First, we measured justice perceptions as employees may feel treated unfairly after breach (Rousseau & Aquino, 1993), as such perceptions can lead to deviance, moderated by mindfulness (Long & Christian, 2015). Second, we measured attributions, in particular, attributions of blame and intentionality, as breach can lead to such attributions, which in turn can lead to deviance (Chaudhry, Coyle-Shapiro, & Wayne, 2011; Zottoli, 2003). Including these measures allows us to show incremental validity, that is, whether hostility acts as a mediator over and above justice perceptions and attributions. Alternatively, it could be that once justice perceptions and/or attributions are added to the hostility is no longer significant, suggesting that the Study 1 and 2 findings were spurious. Finally, in order to provide further evidence of discriminant validity, we also included turnover intentions as an alternative dependent variable.

Study 3

Sample

Data were obtained from employees recruited via Prolific. To address concerns relating to participant inattentiveness, we followed recommendations to include a screening question (DeSimone, Harms, & DeSimone, 2015; Meade & Craig, 2012). Specifically, we asked

participants to "recall, or paraphrase as good as you can, the last sentence of the audio-guided exercise". We excluded 31 individuals who failed this attention check. The final sample was 211 participants (48.8% men) and 33.6% represented the age group 20-29, 35.1% the group 30-39, 18.5% the group 40-49, and 12.8% the group 50-65. Participants had a mean organizational tenure of 3.24 years (SD = 1.00) and 73.5% had at least an undergraduate or a first degree.

Design and Procedure

Participants were informed that the study was intended to understand employee reactions to negative work experiences. The study employed an experimental 2x2 between-subjects design in which participants were randomly assigned to either a mindfulness or control (mind-wandering) condition, and a breach or control (no breach) condition. After the two factors were manipulated (with each factor followed by manipulation check measures), participants responded to the rest of the measures in this order: attributions (blame and intentionality), hostility, perceptions of justice, organizational deviance, turnover intentions, and demographics.

Manipulation

We manipulated mindfulness and mind-wandering (control) using audio-guided instructions (about 9 minutes in length). We developed the instructions based on similar inductions used in the literature (Dietl & Reb, 2019; Hafenbrack et al., 2014; Long & Christian, 2015). The mindfulness recording encouraged participants to become openly aware of the present moment and pay attention to their current sensations, thoughts, and feelings from breathing and scanning the body. In the control condition, participants listened to the mind-wandering induction, which instructed them to think of whatever came to their mind.

For the breach and control (no breach) condition, participants read a vignette (either with a psychological contract breach or no breach) and were asked to imagine themselves in the role of the protagonist. To keep study length reasonable and to maintain experimental realism, we chose one vignette from Study 2 for this study (Vignette 1 in the Appendix).

Measures

Hostility and organizational deviance were measured as in Study 1. As a manipulation check for mindfulness, we used the five-item measure developed by Dietl and Reb (2019) which assessed the extent to which participants were focused on the present moment, their breathing, and bodily sensations. A sample item is "I was mindful of the present moment". As a manipulation check for breach, we adapted seven items to assess perceptions of psychological contract breach from Robinson and Morrison (2000) and Taylor and Tekleab (2004). A sample item is "My employer has failed to meet its promises to me". We assessed blame attributions with a three-item measure adapted from Costa and Neves (2017). A sample item is "I blame my organization for not fulfilling the promises made to me when I was hired". We assessed intentionality attributions with a four-measure adapted from Chaudhry et al. (2011). A sample item is "My organization could have kept its commitment to me but it chose not to". We assessed perceptions of justice using Ambrose and Schminke's (2009) six-item overall justice judgments measure. A sample item is "Overall, I'm treated fairly by my organization". Turnover intention was measured using a four-item measure adapted from Rusbult, Farrell, Rogers, and Mainous (1988). A sample item is "During coming times I would probably look for a new job outside this company". We used a 1 (strongly disagree) to 5 (strongly agree) scale for mindfulness; a 1 (not at all) to 5 (an extreme amount) scale for hostility; a 1 (strongly disagree) to 7 (strongly agree) scale for breach perceptions, blame attributions, intentionality attributions, justice perceptions, and turnover intentions; and a 1 (never) to 7 (always) scale for organizational deviance.

Results and Discussion

Preliminary Analyses

Table 5 shows the means, standard deviations, reliabilities, and intercorrelations of the study variables. As can be seen, the variables correlate with each other in the expected direction. Next, we checked whether the manipulations worked as intended. We found that the breach

manipulation affected breach perceptions, $F(1, 207) = 87.96$, $p < .001$, such that breach was rated higher in the breach condition ($M = 4.43$, $SD = 1.00$) than in the control condition ($M = 3.10$, $SD = 1.00$); the mindfulness manipulation did not affect ratings of breach, $F(1, 207) = 1.04$, ns, and neither did the interaction between the two factors, $F(1, 207) = .08$, ns. We further found that the mindfulness manipulation affected ratings of mindfulness, $F(1, 207) = 45.48$, $p < .001$, such that mindfulness was rated higher in the mindfulness condition ($M = 3.93$, $SD = .55$) than in the control condition ($M = 3.30$, $SD = .74$); the breach manipulation did not affect ratings of mindfulness, $F(1, 207) = 1.50$, ns, and neither did the interaction between the two factors, $F(1, 207) = .75$, ns. Thus, we conclude that the manipulations were effective, and moreover showed discriminant validity by not unintentionally affecting each other.

Examining Alternative Mediating Mechanisms

We again found that psychological contract breach had a significant indirect effect on organizational deviance through hostility (.51; bootstrapped CI: .32 to .74). To examine alternative mediating mechanisms, we then entered perceived justice and attributions of blame and intentionality as additional mediators to the model. We found that, whereas the manipulation affected all four potential mediators, only hostility and perceived justice were significantly related to organizational deviance. Moreover, the indirect effect of hostility remained significant in the presence of the other mediating variables (.37; bootstrapped CI: .16 to .60). The indirect effect for perceived justice was also significant (.14; bootstrapped CI: .03 to .28). While the indirect effect through hostility was larger at .37, a comparison of the differences (.23) between the two effects was not significant, as the CI included zero (-.03 to .48). Overall, these analyses confirm hostility as an important mediator of the effect of breach on organizational deviance, over and above attributions, and perceived justice.

Hypothesis Tests

We next turned to testing the moderated mediation Hypotheses 1 and 2. Given that both

hostility and perceived justice emerged as significant mediators, we included both in the analyses reported below. Running a two-stage moderated mediation model, inconsistent with Hypothesis 1 we found no significant moderation at the first stage, that is, no moderating effect of mindfulness on the relation between breach and hostility, B = .17, SE(B) = .27, t = .62, ns. Moreover, the moderating effect of mindfulness on the relation between breach and perceived justice was also not significant, B = -.39, SE(B) = .31, t = -1.27, ns.

On this basis, we next ran a simpler model with mindfulness as second-stage moderator only, using Hayes' (2013) PROCESS v3.5 Model 14. As expected, breach affected hostility, B = 1.23, SE(B) = .13, t = 9.41, p < .001. Importantly, consistent with Hypothesis 2, the analysis showed a significant second-stage moderation of the relation between hostility and organizational deviance (see Table 6). The shape of the moderation is consistent with the attenuation hypothesis (see Figure 6) and the conditional effect of hostility on organizational deviance was significant in the control condition (B = .43, SE(B) = .09, t = 5.06, p < .001) but not in the mindfulness condition (B = .14, SE(B) = .09, t = 1.50, ns). The conditional indirect effect of breach on organizational deviance through hostility was also significant in the control condition (.53, bootstrapped CI: .29 to .79) but not in the mindfulness condition (.17, bootstrapped CI: -.08 to .44).

Looking next at perceived justice, the second-stage moderation by mindfulness was not significant (see Table 6). Thus, even though perceived justice significantly mediated the relation between breach and organizational deviance, this mediation was not moderated by mindfulness.

[Insert Tables 5 & 6 and Figure 6 about here]

Discriminant Validity

We next examined turnover intentions as a dependent variable and again included both hostility and perceived justice as mediators. Moreover, we only ran a second-stage moderated mediation model, as we knew already from the analyses above that mindfulness did not moderate

the relations between breach and hostility / perceived justice. The analyses showed that even though both hostility and perceived justice significantly predicted turnover intentions (and both indirect effects from breach to turnover intentions were significant), neither relation was moderated by mindfulness, both $p > .4$.

Discussion

Overall, Study 3 provided important replication and extensions of Study 1 and 2 findings. The study experimentally manipulated both psychological contract breach and mindfulness to further strengthen the ability to draw causal conclusions. Moreover, by showing that hostility acted as a mediator even when including justice perceptions and attributions as additional mediators in the statistical model, provides considerable reassurance as to the validity of the hypothesized mediating mechanism. Indeed, whereas perceived justice also mediated the relation between breach and organizational deviance, the moderated mediation model was only significant for hostility. Finally, by showing that the model did not hold for turnover intentions as an alternative outcome – just as it did not hold for voice in Study 1 – this study provides further discriminant validity evidence for our hypothesized model specifically focusing on organizational deviance as a dependent variable.

As a caveat, Study 3 did not find first-stage moderation by mindfulness of the relation between the breach manipulation and hostility. A possible explanation for this difference could lie in the fact that we induced mindfulness as a state in this study, whereas we measured it as a trait in Studies 1 and 2. As mentioned in the introduction, past research on mindfulness suggests that sometimes findings for trait and state mindfulness converge and sometimes they differ, with no clear understanding yet of why this is the case. Another possibility is that the second-stage moderator is more robust and stronger. This would imply that mindfulness is particularly effective at attenuating the effect of hostility on organizational deviance, relative to attenuating the effect of breach on hostility. In order to further delve into this issue, in Study 4 we induced

mindfulness either directly after reading about the breach scenario and before assessing perceived breach, after assessing perceived breach but before hostility, or after hostility but before organizational deviance. Doing so allowed for a more fine-grained examination of the stage at which mindfulness would act as a moderator.

Study 4

Sample

Data was obtained from employees recruited via Amazon's Mechanical Turk (MTurk). As in Study 3, we screened out inattentive participants. Eighteen individuals failed the attention check and were excluded. The final sample was 167 participants (46% men) and 32.3% represented the age group 20-29, 35.3% the group 30-39, and 16.2% the group 40-49. Participants had a mean organizational tenure of 5.29 years (SD = 5.1) and 46.7% had received at least an undergraduate or a first degree.

Design, Procedure, and Materials

Similar to Study 3, participants were informed that the study was intended to understand employee reactions to negative work experiences. However, because we were particularly interested in mindfulness reducing hostility and organizational deviance following psychological contract breach, we only included a breach condition. In the first part, all participants read a breach vignette and were asked to imagine themselves in the role of the protagonist. To keep study length reasonable and to maintain experimental realism,[3] we chose one vignette from Study 2 for this study (Vignette 1 in the appendix).

The study employed an experimental between-subjects design in which participants were randomly assigned to one of four mindfulness conditions[4]. One of these was a control condition

[3] It would have been odd for participants to read three scenarios, then do a mindfulness induction, then respond to the first measures for each scenario etc. Similarly, it would have been odd to go through the first scenario, then repeat the mindfulness induction for the second and third scenario.

[4] There was one more condition in between the MFN-H and MFN-DEV condition that is not relevant for the present paper. Participants in this condition serve as a control to the MFN-H condition, as they had not yet undergone the mindfulness induction.

in which participants read the breach vignette and responded to all measures, first perceived breach, then hostility, then organizational deviance. The other three conditions included a brief audio-guided mindfulness induction, placed at different points of the study, as follows (see also Figure 7): before the measure of breach (MFN-PCB condition); in between the measures of breach and hostility (MFN-H condition); and in between the measures of hostility and organizational deviance (i.e. MFN-DEV condition).

[Insert Figure 7 about here]

Manipulation

As in Study 3, we manipulated mindfulness using audio-guided mindfulness practice. Unlike in Study 3, we used a passive, no treatment control condition, given that we had several mindfulness conditions. Doing so also can serve as a robustness check, as the active mind-wandering control often used can potentially induce negative affect as research suggests that many people do not like to be left alone with their thoughts, to the point that they prefer to administer electric shocks to themselves (Wilson et al., 2014). We developed the practice based on similar inductions used in the literature (Hafenbrack et al., 2014; Long & Christian, 2015). The instructions (about 4 minutes in length) encouraged participants to become openly aware of the present moment and pay attention to their current sensations, thoughts, and feelings from breathing and scanning the body. Past research suggests that mindfulness inductions of even such short durations can be effective (Lloyd, Szani, Rubenstein, Colgary, & Pereira-Pasarin, 2016; Reb & Narayanan, 2014). Given that this type of induction has been validated through manipulation checks in several other studies, we decided not to include a manipulation check in order to avoid priming participants.

Measures

We adapted four items to assess breach perceptions from Robinson and Morrison (2000) and Taylor and Tekleab (2004). A sample item is “My employer has failed to meet its promises

to me". We assessed hostility and organizational deviance with the same scales as in Study 1.

Data Analysis

Given our experimental design with four conditions, we mostly relied on analysis of variance (ANOVA) for the analyses. Because the design involved a mindfulness induction at different stages of the study, in order to arrive at uncontaminated comparisons, we always compared participants in the relevant mindfulness condition with participants in all other conditions that had not (yet) undergone the mindfulness induction. For example, we compared participants in the MFN-PCB condition against all other participants, because none of them had undergone the mindfulness induction; and we compared participants in the MFN-DEV condition against participants in the control condition, as all other participants had undergone the mindfulness induction already, which could conceivably confound the comparison.

Results and Discussion

Table 7 shows the means, standard deviations, reliabilities, and intercorrelations of the measured study variables. The measured variables correlate with each other as expected.

We then examined the effect of the mindfulness manipulation (see also Figure 8). If mindfulness changed perceptions of psychological contract breach, we should find an effect of the mindfulness induction right before the measurement of breach perceptions (i.e., MFN-PCB condition). ANOVA revealed that perceptions of breach were not significantly affected by the mindfulness induction ($M = 3.48$, $SD = 1.08$, $n = 27$) relative to the comparison condition ($M = 3.61$, $SD = 1.05$, $n = 140$), $F(1, 163) = 1.50$, $p = .22$, partial $\eta^2 = .009$.

If mindfulness changed emotional reactions to the breach, we would expect an effect of the mindfulness induction before the emotion measurement (i.e., MFN-H condition). ANOVA revealed that hostility was indeed significantly lower in the MFN-H condition, $F(1, 136) = 5.56$, $p < .05$, partial $\eta^2 = .04$. Participants who had just engaged in a mindfulness practice prior to giving the ratings reported lower hostility ($M = 3.73$, $SD = .75$, $n = 33$) relative to the

comparison condition (M = 4.06, SD = .76, n = 107).

Finally, if mindfulness reduced organizational deviance following psychological contract breach, we would expect an effect of the mindfulness induction before the deviance measurement (i.e., MFN-DEV condition). ANOVA revealed that deviance was indeed significantly lower in the MFN-DEV condition, $F(1, 73) = 5.44$, $p < .05$, partial $\eta^2 = .07$. Specifically, participants who had engaged in a mindfulness practice were lower on organizational deviance (M = 1.49, SD = .58, n = 29) relative to participants who had not engaged in a mindfulness practice (M = 1.85, SD = .71, n = 48).

[Insert Table 7 and Figure 8 about here]

Overall, the findings are consistent with the proposed model and suggest that mindfulness attenuated both hostility and organizational deviance following psychological contract breach. On the other hand, mindfulness did not moderate perceptions of the psychological breach described in the vignette. Participants in a more mindful state perceived just as strongly that the vignette described an instance of psychological contract breach than participants who had not undergone the mindfulness induction. This suggests that differences in breach perceptions cannot explain the moderating effect of mindfulness in emotional and behavioral reactions to breach.

General Discussion

Across four studies with 872 participants we tested a two-stage moderated mediation model of employee deviance as a reaction to psychological contract breach. Specifically, drawing on a self-regulation perspective (Glomb et al., 2011; Vago & Silbersweig, 2012) we posited that employee mindfulness attenuates emotional and behavioral reaction to breach, and thereby changes the relationship between psychological contract breach and organizational deviance (Bal, Chiaburu, & Diaz, 2011; Restubog et al., 2015). As summarized in Table 8, our findings generally supported our proposed model, such that employees with high levels of mindfulness not only experienced lower levels of hostility in response to breach, but were also

less likely to respond to hostility with deviant behaviors. The studies also ruled out several alternative explanations.

[Insert Table 8 about here]

Theoretical Implications

Our research makes several theoretical contributions. First, our studies contribute to the psychological contract literature. They stand in contrast to the idea that reactions to breach are determined solely by external factors such as the nature or severity of the breach (Ho et al., 2004) or that the only internal factors that matter are personality traits. Instead, consistent with recent theorizing on the role of self-regulation in reactions to breach (Schalk & Roe, 2007; Tomprou et al., 2015), the present findings expand the conversation to how individuals' self-regulatory abilities – in the form of mindfulness – can attenuate how employees react both emotionally and behaviorally to the experience of psychological contract breach. This is not to imply that employees are not justified to – or should not – get angry or get even in some way when their psychological contract has been breached. However, it suggests that mindfulness may allow employees the response flexibility to react in ways that are neither passive/resignating (such as suppressing one's frustration), nor active but potentially counter-productive (such as engaging in deviance). This is consistent with numerous findings that evidence the role of mindfulness in helping employees navigate their work experiences and situations in a way that leads to more positive outcomes (see Good et al., 2016; Reb, Allen, & Vogus, 2020)

More broadly, by integrating theorizing on mindfulness and psychological contracts and social exchange, our research supports the idea that mindful self-regulatory processes have an important role to play in understanding the effects of motivational mechanisms for negative behaviors at work (Christian & Ellis, 2011; Long & Christian, 2015). This has potential implications for research on other areas of self-regulatory impairment, such as impaired decision making (Baumeister & Heatherton, 1996), deception (Welsh, Ellis, Christian, & Mai, 2014), or

abusive supervision resulting in decreased work engagement (Barnes, Lucianetti, Bhave, & Christian, 2015), in that it suggest a potential mitigating role of mindfulness in these effects. It also has implications for research on counterproductive behaviors at work, such as deviance, that similarly has emphasized external factors such as injustice (Aquino et al., 1999), workplace stressors (Fox & Spector, 1999), or sleep deprivation (Christian & Ellis, 2011). More recently, studies have started to investigate the role of individual differences (Lian et al., 2014; Long & Christian, 2015; Wu, Zhang, Chiu, Kwan, & He, 2014). We build on this work by showing that the relation between psychological contract breach and deviance is not uniform across all employees but varies depending on employee mindfulness.

Our research also contributes to the mindfulness literature. By providing support for a two-stage moderated mediation, our research also helps explain seemingly inconsistent findings in past research. Specifically, some studies have found that mindfulness moderated the link between adverse experiences (such as injustice, Long & Christian, 2015, or discrimination, Thoroughgood, Sawyer, & Webster, 2019) and emotional reactions. In contrast, some other research found that mindfulness moderated the link between emotions and counterproductive behaviors (e.g., Liang et al., 2018). Our studies suggest that a debate about whether mindfulness moderates emotional *or* behavioral reactions is unfounded because *both* of these moderating mechanisms have merit. In other words, mindfulness helps employees respond differently to negative experiences, for example, by decoupling themselves from the experience (Glomb et al., 2011). This opens up the possibility for more helpful interpretations and emotions to emerge. In addition, mindfulness helps employees regulate the hostility they experience. By observing and accepting these emotional experiences as processes that rise and dissipate naturally – rather than impulsively acting on – the potentially counterproductive impact of emotions such as anger and frustration can be mitigated (Chambers et al., 2009).

In addition, whereas Long and Christian (2015) found mindfulness to attenuate the effect

of injustice on negative emotions, we found such an attenuating effect following psychological contract breach (on both hostility and deviance). Research by Turnley and Feldman (1998) shows that while justice impacts reactions to breach, perceiving injustice or unfairness alone is not indicative of a contract breach (Rousseau, 1989), which is more complex. For example, an individual who received less or no discretionary bonus might see it as a breach of contract, but might still not find it unfair, especially if the organization had not promised a bonus. Further, Long and Christian's (2015) manipulation of injustice involved using hostile comments and actions, signaling overt, intentional ill will, perpetrated by the supervisor towards participants. Breach, on the other hand, is not necessarily deliberate. Since it is an inherently psychological experience, it is difficult to determine whether there was an actual breach of the promise made, or even whether the promise was ever established (Robinson & Morrison, 2000). As such, the present findings suggest a much broader role of mindfulness in adverse work experiences.

Methodologically, the four studies (field studies and experiments) also helped to maximize internal and external validity and examine the relationship between psychological contract breach and organizational deviance in ways that would not have been possible using traditional surveys. We agree with Taylor and Tekleab (2004, p. 279) that due to the over-reliance on survey methods, "psychological contract research has fallen into a methodological rut." In this paper, we address this critique and move beyond the methodological boundaries in the psychological contract field. In particular, the use of the vignette-based field experiment in this research helped to estimate the “unconfounded and context-dependent effects of explanatory factors” (Atzmüller & Steiner, 2010, p. 129) making it a powerful tool for psychological contract research (in terms of drawing out) investigating respondent beliefs, attitudes, judgments, and behaviors. We see this as an important methodological contribution that offers new insights into the employment exchange relationship and its influence on employee behavior.

Practical Implications

Given the costs to organizations and employees themselves associated with employee deviant behaviors (Bennett et al., 2018), it is important to understand better how deviance in response to psychological contract breach can be attenuated. This is particularly so with instances of unfulfilled expectations and obligations becoming more common due to increases in globalization, competition, volatility, and uncertainty (Piccoli & De Witte, 2015; Restubog et al., 2015). Our results suggest that more mindful employees are less likely to respond to breach with deviance. Given that mindfulness can be developed through practice, akin to a skill (Brown et al., 2007), organizations should consider offering mindfulness training that will help employees engage in self-regulatory processes to better cope with adverse work experiences. Of course, consistent with others (e.g., Purser & Milillo, 2015), we emphasize that mindfulness training should not be used as appeasement of employees so that organizations can keep breaching psychological contracts without fear of employee reprisals. Employees can be justifiably angry following a breach. However, some degree of negative experiences at work are unavoidable and to the extent that mindfulness practices can help employees face these experiences productively, it should benefit the employee as well as the organization. Encouragingly, our findings in Studies 1 and 3 suggest that mindfulness does not attenuate employee voice and turnover intentions following breach, but specifically deviant behaviors.

Strengths, Limitations and Future Directions

The results of the present studies need to be viewed in light of their strengths and limitations, which point to future research directions. A strength of the present research is the triangulation through different study designs using both survey and experimental approaches and both measuring and manipulating the independent (breach) and moderator (mindfulness) variables. Thus, while each study has its weaknesses, in combination, they provide considerable support for the hypothesized two-stage moderated mediation model. This is perhaps particularly true in light of little past research having used an experimental approach to study the effects of

psychological contract breach using designs with high internal validity.

Another strength of the present research was that we included additional variables beyond those hypothesized in order to provide more robust evidence of discriminant and incremental validity. In summary, we found that the two-stage moderated mediation model did not hold for alternative mediators (perceived justice and attributions of blame and intentionality), for alternative outcomes (employee voice and turnover intentions), and for an alternative moderator (self-control capacity). These findings suggest that mindfulness does not attenuate all reactions to psychological contract breach, but specifically hostility and deviant behaviors. Moreover, it appears that the two-stage moderation does not hold for any self-regulatory variable but may be specific to mindfulness.

Of course, future research could further strengthen confidence in the proposed model by investigating additional mediators, moderators, and outcomes. For example, research could examine perceived organizational support (POS) as moderator, as commonalities between POS and psychological contract theory have been highlighted in the literature in that both concepts emphasize social exchange processes (Aselage & Eisenberger, 2003). Employees in a supportive relationship with their organization or with higher levels of POS might reappraise breach and give the benefit of doubt to their organization. As such, they might react differently to unfulfilled promises than employees with lower levels of POS (Coyle-Shapiro & Conway, 2005). Future research could also examine whether employee mindfulness increases other responses to breach. For example, Study 1 found a marginally significant interaction such that more mindful employees appeared more likely to engage in voice behaviors following breach. It would be interesting to follow up on this intriguing, but preliminary finding.

With respect to mindfulness future research could employ other inductions and measures of mindfulness. For example, in our Studies 1 and 2, we used the single factor MAAS (Brown & Ryan, 2003) as the most commonly used mindfulness scale. Future research could also use other

measures, such as the Philadelphia Mindfulness Scale (Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2008) to attempt to replicate the present findings and investigate whether certain facets of mindfulness play a particularly important moderating role. Similarly, future research could use other mindfulness inductions and additional control conditions to ensure the robustness of findings. Of particular value would be replicating the effect with mindfulness-based field interventions.

Furthermore, based on Robinson and Morrison (2000) we treated psychological contract breach as a latent aggregate construct (Chiu & Peng, 2008). However, some research suggests that there are two basic types of psychological contracts: relational and transactional (Coyle-Shapiro & Parzefall, 2008), which can be distinguished in terms of their timeframe, stability, scope, exchange symmetry and tangibility (Sels, Janssens, & Van Den Brande, 2004). Future research could examine if breaches of relational contracts result in stronger negative emotional and behavioral reactions and if mindfulness can attenuate such reactions as well.

Overall, we believe that this research offers novel insights into why not all employees react in the same way to experiences of psychological breach, as well as how mindfulness helps employees regulate both emotional and behavioral reactions to adverse work events. This should never be an excuse for organizations to breach psychological contracts, but it does offer hope that mindfulness can help employees cope more productively with inevitable work experiences.

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Table 1. Means, Standard Deviations, Reliabilities and Intercorrelations (Study 1)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
1. Gender	1.15	.35								
2. Tenure	2.39	2.56	-.15*							
3. PCB	2.68	.66	-.15*	.03	(.52)					
4. Mindfulness	4.49	.85	.07	.10	-.11	(.87)				
5. Self-control capacity	4.88	.61	.07	-.05	-.35**	.49**	(.72)			
6. Hostility	2.11	.88	.02	.01	.28**	-.34**	-.55**	(.88)		
7. Voice	3.23	.75	-.14*	.06	.13	-.10	-.06	.09	(.53)	
8. Organizational deviance	1.58	.70	-.14*	.13*	.23**	-.40**	-.54**	.39**	.02	(.91)

*p <.05; **p <.01.

Notes. *N* = 234. PCB = psychological contract breach. Gender coded as 1 = male, 2 = female.

Coefficient alphas are given in parentheses along the diagonal.

Table 2. Mindfulness as Moderator (Study 1)

	B	*SE*	*t*	R^2
Outcome variable: Hostility				
				.20
Constant	-.32	.20	-1.61	
Gender	.23	.15	1.50	
Tenure	.02	.02	.85	
PCB	.38	.08	4.58***	
Mindfulness	-.34	.06	-5.47***	
PCB x Mindfulness	-.19	.09	-2.00*	
Outcome variable: Organizational deviance				
				.38
Constant	1.64	.14	11.82***	
Gender	-.18	.11	-1.70	
Tenure	.03	.01	2.34*	
PCB	.13	.06	2.28*	
Hostility	.14	.05	2.81**	
Mindfulness	-.28	.05	-6.01***	
Hostility x Mindfulness	-.28	.05	-5.89***	

*p <.05; **p <.01; ***p <.001.

Notes. N = 234. PCB = psychological contract breach. Unstandardized regression coefficients are reported.

Table 3. Means, Standard Deviations, Reliabilities and Intercorrelations (Study 2)

Variable	*M*	*SD*	1	2	3	4	5	6
1. Gender	1.05	.22						
2. Age	1.61	.81	.07					
3. PCB	.50	.50	-.02	-.07				
4. Mindfulness	4.40	.87	.00	.08	-.04	(.87)		
5. Hostility	.00	.59	-.04	-.09	.53**	-.41**	(.88)	
6. Organizational deviance	.00	.52	-.02	-.08	-.38**	-.83**	.88**	(.91)

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

Notes. N = 260. PCB = psychological contract breach. PCB condition coded as 0 = control, 1 = PCB. Gender coded as 1 = male, 2 = female. Age coded as 1 = 20-29, 2 = 30-39, 3 = 40-49, 4 = 50-59, 5 = 60+. Hostility and deviance scores were mean-centered across the three scenarios. Coefficient alphas are listed in parentheses along the diagonal.

Table 4. Results for Test of Mindfulness as Moderator (Study 2)

	B	*SE*	*t*	R^2
Outcome variable: Hostility				
				.58
Constant	.17	.10	1.35	
Gender	-.13	.11	-1.18	
Age	-.03	.03	-.84	
PCB	.60	.05	12.55***	
Mindfulness	-.28	.03	-10.24***	
PCB condition x Mindfulness	-.51	.06	-9.33***	
Outcome variable: Organizational deviance				
				.89
Constant	-.04	.08	-.58	
Gender	.03	.07	.44	
Age	-.00	.02	-.38	
Hostility	.77	.03	27.13***	
Mindfulness	-.03	.02	-1.28	
Hostility x Mindfulness	-.12	.03	-3.57***	

***p <.001.

Note. N = 260. PCB = psychological contract breach. PCB condition coded as 0 = control, 1 = PCB. Unstandardized regression coefficients are reported. Bootstrap samples = 5000.

Table 5. Means, Standard Deviations, Reliabilities and Intercorrelations (Study 3)

Variable	*M*	*SD*	1	2	3	4	5	6	7	8
1. Mindfulness	.50	.50								
2. PCB	.50	.50	-.14*							
3. Intentionality attributions	3.95	1.53	-.11	.53**	(.94)					
4. Blame attributions	4.11	1.61	-.09	.48**	.92**	(.95)				
5. Justice perceptions	4.48	1.17	.05	-.32**	-.69**	-.67**	(.91)			
6. Hostility	2.21	1.13	-.11	.55**	.68**	.66**	-.62**	(.95)		
7. Turnover intentions	4.48	1.17	-.08	.37**	.69**	.72**	-.65**	.64**	(.93)	
8. Organizational deviance	2.00	.87	-.06	.16*	.34**	.35**	-.43**	.46**	.49**	(.93)

*p <.05; **p <.01.

Notes. *N* = 211. Coefficient alphas are given in parentheses along the diagonal. PCB = psychological contract breach. PCB condition coded as 0 = control, 1 = breach. Mindfulness condition coded as 0 = control, 1 = mindfulness.

Table 6. Results for Test of Mindfulness as Moderator (second-stage) (Study 3)

	B	*SE*	*t*	R^2
Outcome variable: Organizational deviance				.28
Constant	1.77	.48	3.73***	
PCB	-.23	.13	-1.85	
Hostility	.43	.09	5.06***	
Justice perceptions	-.13	.08	-1.74	
Mindfulness	-1.11	.71	1.57	
Hostility x Mindfulness	-.29	.12	-2.48*	
Justice perceptions x Mindfulness	-.11	.11	-1.00	

*p <.05; **p <.01; ***p <.001.

Notes. N = 211. PCB = psychological contract breach. PCB condition coded as 0 = control, 1 = PCB. Mindfulness condition coded as 0 = control, 1 = mindfulness. Unstandardized regression coefficients are reported. Bootstrap samples = 5000.

Table 7. Means, Standard Deviations, Reliabilities and Intercorrelations (Study 4)

Variable	*M*	*SD*	1	2	3	4	5
1. Gender	1.54	.50					
2. Age	36.35	10.99	.16*				
3. PCB	3.59	1.06	-.02	-.24**	(.96)		
4. Hostility	3.97	.82	.05	-.06	.55**	(.86)	
5. Organizational deviance	1.78	.75	-.05	-.25**	.07	.22**	(.93)

*p <.05; **p <.0.1

Notes. N = 167. Gender coded as 1 = male, 2 female. PCB = psychological contract breach. The manipulated mindfulness variable was not included as it would not make sense to interpret the correlations across the four distinct experimental conditions.

Table 8: Summary of Results across the Four Studies

Study	**Sample size and source**	**Design**	**Mindfulness operationalization**	**Incremental / discriminant validity**	**Results**
1	234 employees from various industries	Cross-sectional survey	Trait mindfulness (MAAS)	• Self-control capacity as an alternative moderator • Voice as an alternative dependent variable	• H1 supported • H2 supported • Self-control capacity moderated the second stage, but not the first stage; conditional indirect effect not significant • Mindfulness did not attenuate the relation between hostility and voice, but marginally amplified it
2	260 employees from IT companies	Experimental study (vignette-based) PCB manipulated	Trait mindfulness (MAAS)	NA	• H1 supported • H2 supported
3	211 online (Prolific) participants (full-time employees)	Experimental study (vignette-based) PCB manipulated Mindfulness manipulated	• State mindfulness manipulation (through 9-minute audio recordings) • Mind-wandering control condition	• Justice perceptions and attributions of intentionality and blame as alternative mediators • Turnover intentions as alternative dependent variable	• H1 not supported • H2 supported • Indirect effect of hostility remained significant in the presence of the other mediating variables • Perceived justice mediated relation between breach and deviance; but this mediation was not moderated by mindfulness • Both hostility and perceived justice predicted turnover intentions, but neither relation was moderated by mindfulness
4	167 online (MTurk) participants (full-time employees)	Experimental study (vignette-based) PCB manipulated Mindfulness manipulated	State mindfulness manipulation (through 4-minute audio recordings placed as per Figure 8)	NA	• H1 supported • H2 supported

Figure 1

Conceptual Model of the Two-Stage Moderated Mediation by Employee Mindfulness

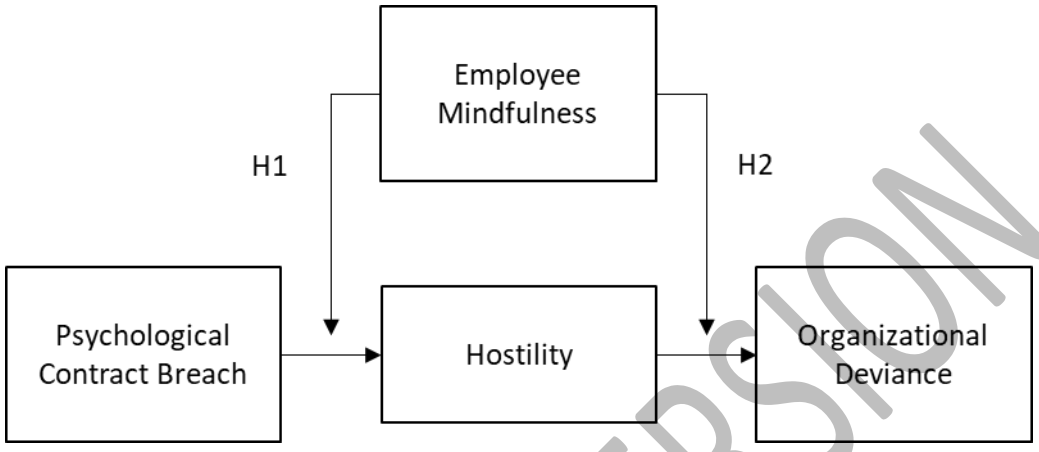
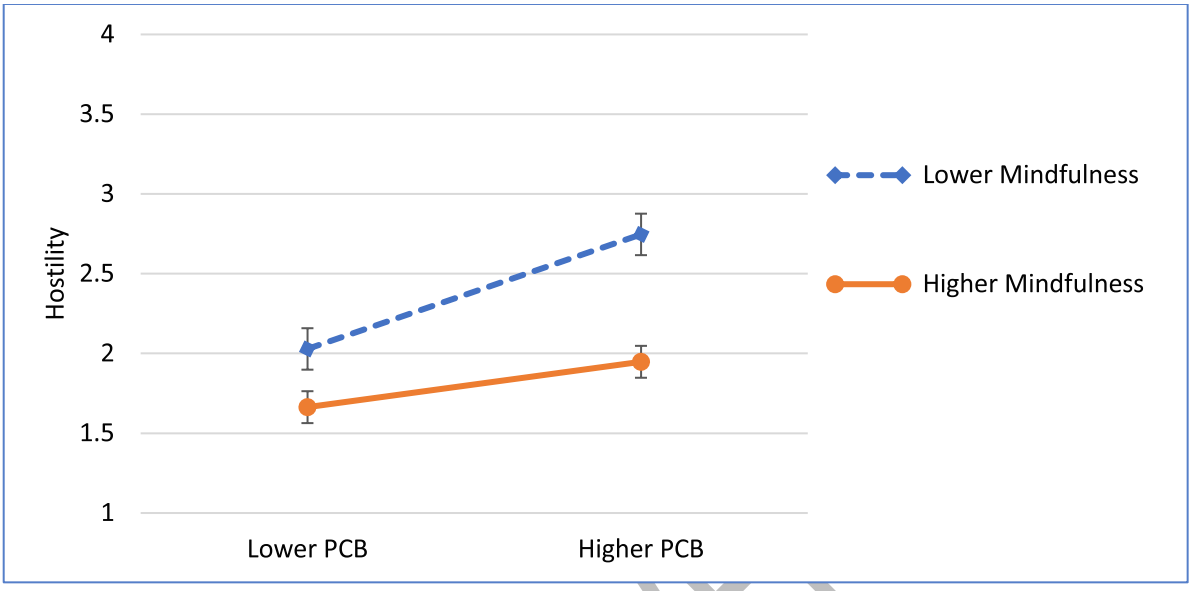


Figure 2

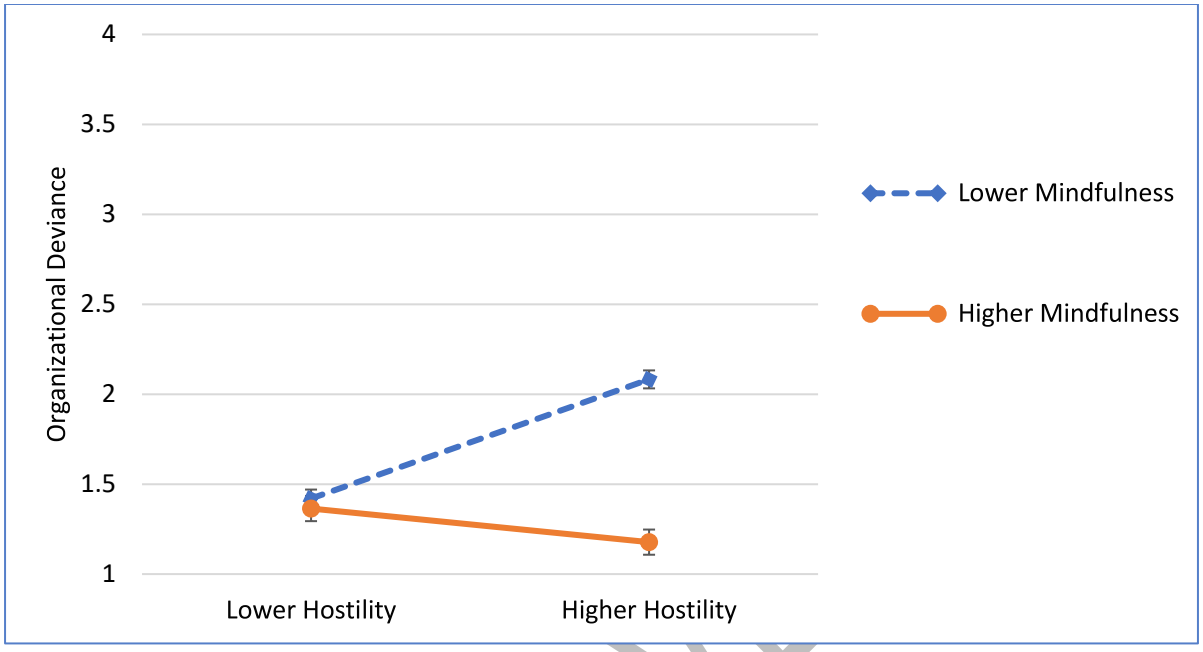
Interaction Effect of Psychological Contract Breach and Mindfulness on Hostility (Study 1)



Notes. PCB = psychological contract breach. Lower mindfulness / PCB = 1 SD below the mean (3.64; 2.02, respectively); higher mindfulness / PCB = 1 SD above the mean (5.34; 3.34, respectively). Hostility could range from 1 to 5. Error bars indicate standard errors around the slope.

Figure 3

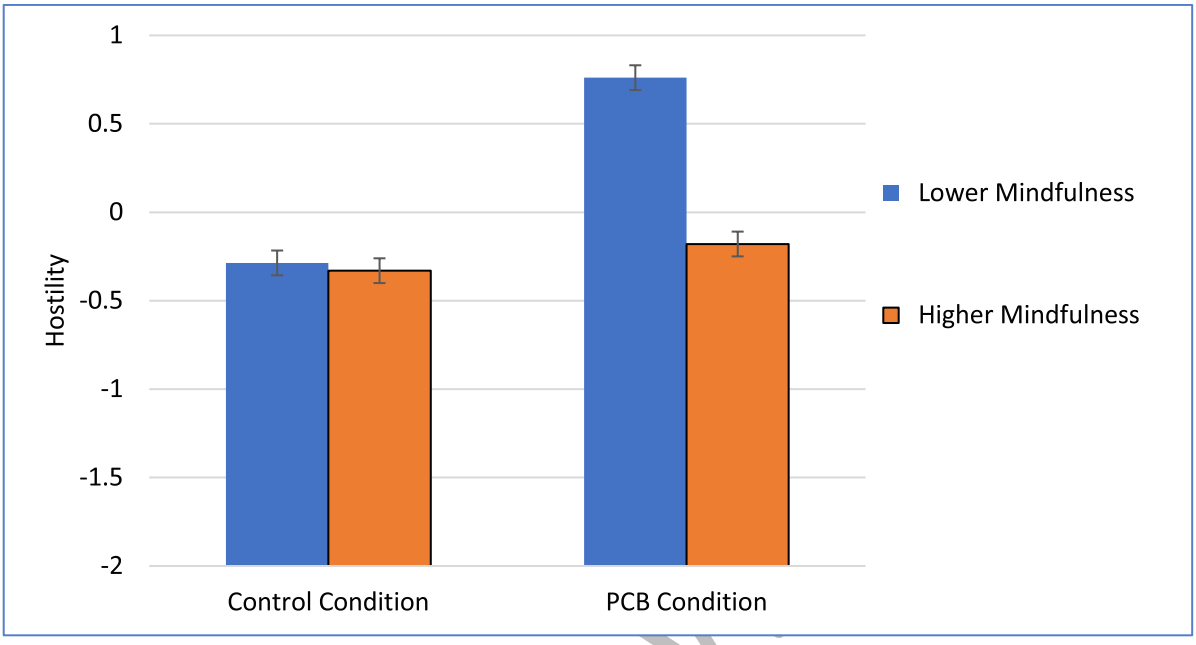
Interaction Effect of Hostility and Mindfulness on Organizational Deviance (Study 1)



Notes. Lower mindfulness / hostility = 1 SD below the mean (3.64; 1.23, respectively); higher mindfulness / hostility = 1 SD above the mean (5.34; 2.99, respectively). Error bars indicate standard errors around the slope.

Figure 4

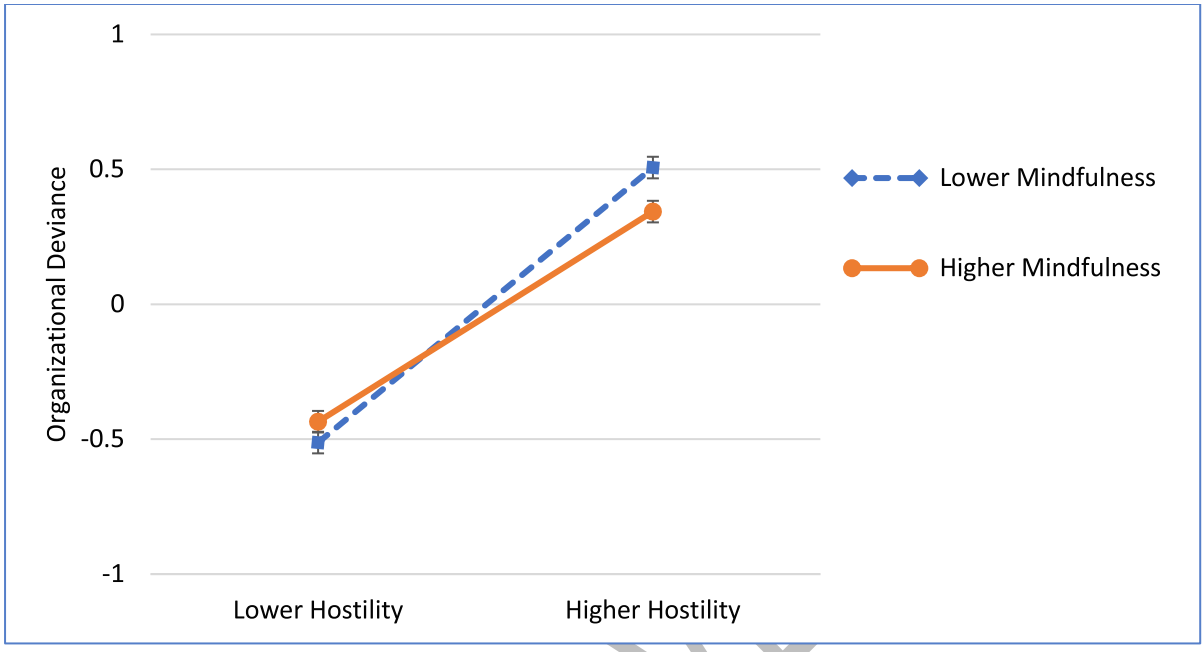
Interaction Effect of Psychological Contract Breach and Mindfulness on Hostility (Study 2)



Notes. PCB = psychological contract breach. Lower mindfulness = 1 SD below the mean (3.47); higher mindfulness = 1 SD above the mean (5.27). Hostility could range from -2 to +2. Error bars indicate standard errors around the slope.

Figure 5

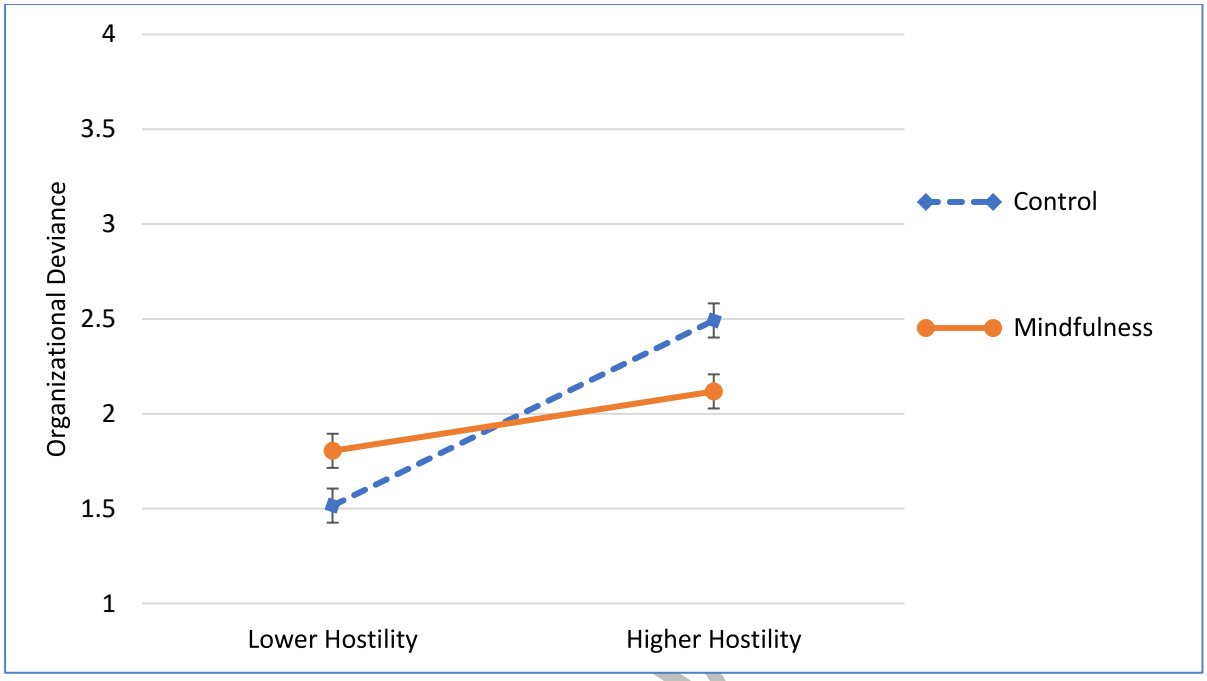
Interaction Effect of Hostility and Mindfulness on Organizational Deviance (Study 2)



Notes. Lower mindfulness / hostility = 1 SD below the mean (3.47; -.59, respectively); higher mindfulness / hostility = 1 SD above the mean (5.27; .59, respectively). Organizational deviance could range from -2 to +2. Error bars indicate standard errors around the slope.

Figure 6

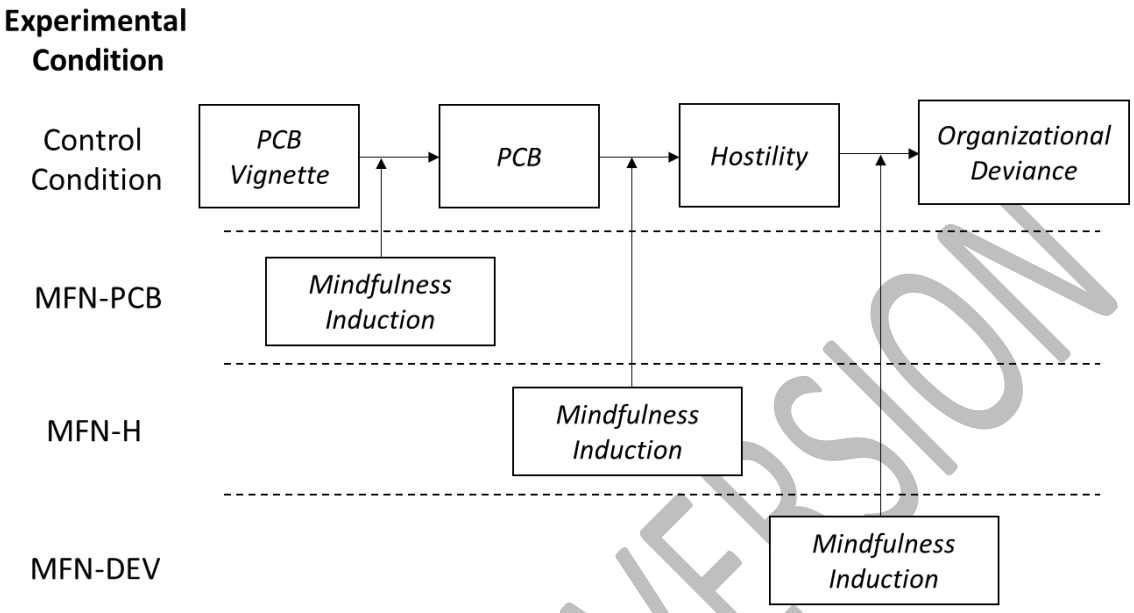
Interaction Effect of Hostility and Mindfulness on Organizational Deviance (Study 3)



Notes. Lower hostility = 1 SD below the mean (1.08); higher hostility = 1 SD above the mean (3.34). Organizational deviance could range from 1 to 5. Error bars indicate standard errors around the slope.

Figure 7

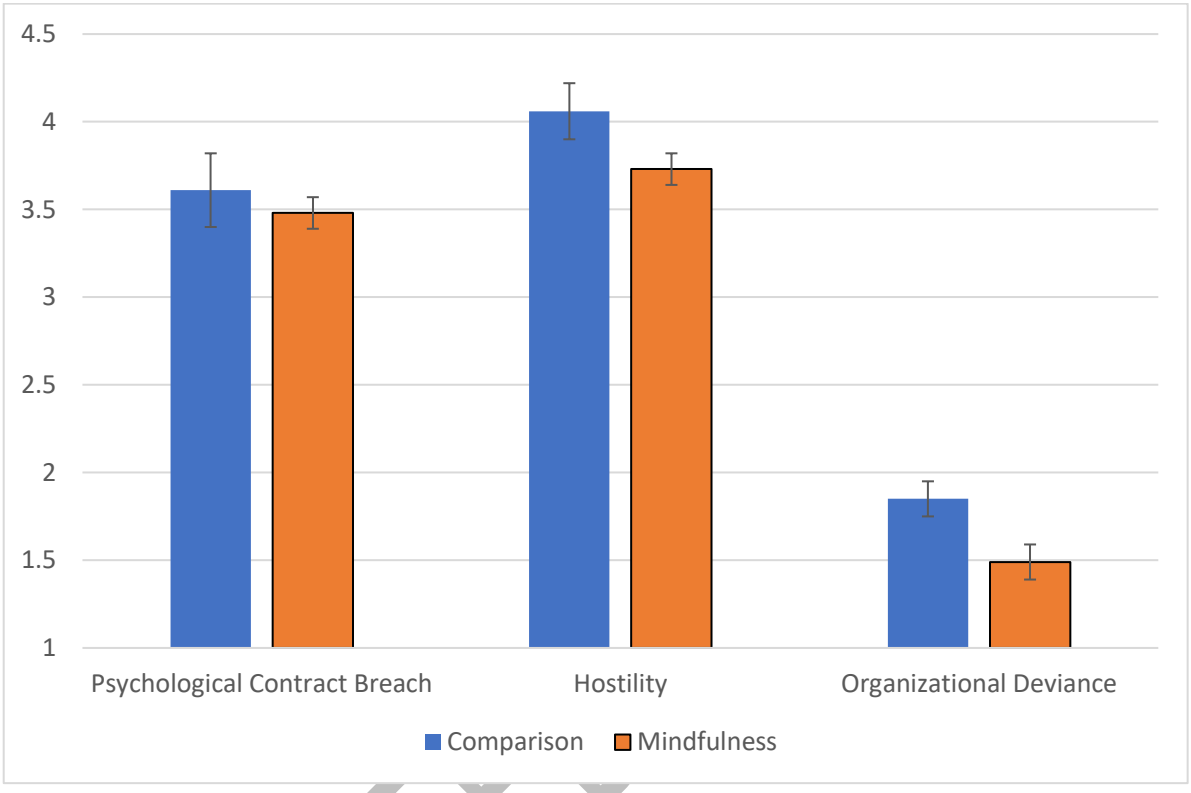
Sequence and Experimental Conditions (Study 4)



Notes. PCB = psychological contract breach; Control condition: participants read PCB vignette, then PCB was measured, then hostility, then organizational deviance; MFN-PCB condition: mindfulness induction before PCB measurement; MFN-H condition: mindfulness induction before hostility measurement; MFN-DEV; mindfulness induction before organizational deviance measurement.

Figure 8

Variable Means Depending on Mindfulness Condition (Study 4)



Notes. Measured variables could range from 1 to 5. Error bars indicate standard errors around the means.

Appendix

Vignette 1

PCB Condition: Michael is working as an associate director in a pharmaceutical company. As the end of the year approaches, Michael is reflecting on his overall work performance. He concludes that he's done particularly well this year. His division underwent a major transformation and he delivered crucial parts of this effort, including, relooking at the accounts, taking up the administrative responsibilities for the changes implemented and other day-to day-operations. Today, he met with his supervisor to discuss his annual performance. His supervisor indeed praised his performance, pointing out his important role in the division's transformation. However, despite having received a bonus every year in the past and despite his performance, he was informed that he would not receive a bonus this year. No explanation was given.

Control Condition: Michael is working as an associate director in a pharmaceutical company. As the end of the year approaches, Michael is reflecting on his overall work performance. He concludes that he's done particularly well this year. His division underwent a major transformation and he delivered crucial parts of this effort, including relooking at the accounts, taking up the administrative responsibilities for the changes implemented and other day-to day-operations. Today, he met with his supervisor to discuss his annual performance. His supervisor indeed praised his performance, pointing out his important role in the division's transformation.

Vignette 2

PCB Condition: Graham has been working as a consultant for a professional services company for about 2 years. About a year ago, the company posted him to a different country. In his company, consultant salaries depend on what clients offer on an individual basis. Because prior experience of working in a particular country is highly valued by clients, consultants' salaries after moving to a different country often show an initial decline before moving back up to previous levels and higher. Graham and his manager had a discussion about this before he took the job. During that discussion, his manager promised him that he should not worry about this and that the company will continue to pay him the same salary due to his strong performance. When Graham received his first pay check after the move, he found that his salary was significantly lower.

Control Condition: Graham has been working as a consultant for a professional services company for about 2 years. About a year ago, the company posted him to a different country. In his company, consultant salaries depend on what clients offer on an individual basis. Because prior experience of working in a particular country is highly valued by clients, consultants' salaries after moving to a different country often show an initial decline before moving back up to previous levels and higher. Graham and his manager had a discussion about this before he took the job and was informed about it. As such, when Graham received his first pay check after the move, his salary was significantly lower.

Vignette 3

PCB Condition: Adam is working as a research lead in an insurance company, and has been in this role for 8 months. At the time of his recruitment, he was successfully able to negotiate an extra 10 days of annual leave in addition to his annual leave entitlement. Moreover, he learnt that deciding when to take the annual leave is also subject to company approval. Nonetheless, employees are typically able to take annual leave during their most preferred times. When Adam requested annual leave this year, his first preference of leave dates was not approved and he had to submit a revised request with changed dates that he preferred less. He was further told by the HR manager that it will not be possible to give him 10 extra days of annual leave.

Control Condition: Adam is working as a research lead in an insurance company, and has been in this role for 8 months. At the time of his recruitment, he tried to negotiate an extra 10 days of annual leave in addition to his annual leave entitlement, but got to know that holiday time is non-negotiable due to company policy. Moreover, he learnt that deciding when to take the annual leave is also subject to company approval and because of work-related reasons (i.e. peak work periods), employees often are not able to take annual leave during their most preferred times. When Adam requested annual leave this year, his first preference of leave dates was not approved and he had to submit a revised request with changed dates that he preferred less.