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ORIGINAL PAPER

The Dark Side of Mindfulness at Work: How Mindfulness Training Enlivens Machiavellian Incivility

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Abstract
Organizational mindfulness interventions are widely thought to enhance ethical awareness, self-regulation, and prosocial work behavior. Yet emerging research suggests that their effects may be more contingent than commonly assumed. In this paper, I theorize that mindfulness training can yield ethically problematic outcomes for employees who are high in dispositional Machiavellianism. Findings from a large multi-wave field experiment with both active and passive control conditions support this account. Results show that mindfulness training enlivened Machiavellians' contempt, anger, and disgust (collectively termed *affective condemnation*) for their coworkers. This, in turn, translated into higher levels of enacted workplace incivility—a subtle, deniable form of interpersonal mistreatment. By contrast, consistent with Machiavellians' calculated and reputation-conscious proclivities, the corresponding conditional indirect effect on interpersonal deviance was not significant. These effects remained robust when accounting for generalized negative affect, other dark personality traits, and several theoretically distinct, plausible alternative mechanisms. By identifying Machiavellianism as a critical boundary condition, this research challenges the assumption that organizational mindfulness interventions are ethically neutral or unwaveringly prosocial. More broadly, it reveals that mindfulness training can exert ethically contingent effects by enlivening dispositionally grounded condemnatory affect, underscoring the importance of considering how employee personality shapes the ethical consequences of organizational mindfulness interventions.

Keywords Mindfulness · Machiavellianism · Moral emotions · Workplace incivility · Dark Triad · Interpersonal deviance

"And if you gaze long into an abyss, the abyss also gazes into you" ~ Friedrich Nietzsche

Introduction

Mindfulness interventions have come to be widely accepted and adopted by organizations around the world. Defined as receptive attention to and awareness of present events and experiences (Brown & Ryan, 2003), mindfulness is known to enhance self-awareness, self-regulation, and a host of broadly desirable workplace behaviors (Glomb et al., 2011; Good et al., 2016). For example, researchers have linked mindfulness to numerous prosocial outcomes, including ethical decision-making (Du et al., 2023; Ruedy & Schweitzer, 2010), empathy and compassion (Donald et al., 2019), helping behavior (Sawyer et al., 2022), and collaborative conflict management (Kay & Skarlicki, 2020). At the same time, because mindfulness training shapes how people attend to and experience others, it may also influence interpersonal dynamics in ways that are not uniformly prosocial (Kay et al., 2019). From a business ethics perspective, this raises an important question: do mindfulness interventions carry moral hazards?

Growing evidence suggests they may. For example, Schindler et al. (2019) found that mindfulness can reduce motivation to repair damaged relationships, while Lyddy et al. (2021) showed that it can exacerbate resource depletion in emotionally demanding work environments. Most recently, Good et al. (2025) demonstrated that mindfulness can amplify deleterious effects of situational anxiety, intensifying loneliness and impairing job performance during periods of crisis. Taken together, this growing body of research suggests the effects of mindfulness may be contingent on

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organizational context (Kilic et al., 2026), raising the prospect that mindfulness interventions can, under certain conditions, have unintended ethical consequences.

Beyond contextual factors, an emerging body of research further suggests that individual differences may also shape the outcomes of mindfulness interventions (Allen et al., 2015; Brown et al., 2015; Van Dam et al., 2018). For example, Kay and Young (2022) demonstrated that mindfulness interventions are less effective at cultivating authenticity in individuals who are low in trait conscientiousness, thereby fostering less psychological wellbeing. Additionally, Kay et al. (2023) further found that a brief mindfulness manipulation may heighten "mindful outrage" and retributive impulses among some individuals who witness third-party injustice. Taken together, this budding literature suggests that unintended consequences of organizational mindfulness interventions may also depend on the personality of employees who undergo them, reflecting in part their capacity to render dispositionally grounded affect more experientially accessible (Lindsay & Creswell, 2017).

To better understand when and for whom mindfulness interventions may have such adverse implications, it is important to look to theory for guidance. The self-awareness, self-regulation, and self-transcendence (S-ART) framework (Vago & Silbersweig, 2012) provides one of the most influential accounts of the psychological processes involved in mindfulness training. It conceptualizes mindfulness practice as cultivating interdependent capacities related to metacognitive awareness, self-regulation, and self-transcendence—the latter pertaining to a more positive and prosocial relationship between self and others. Although the S-ART framework acknowledges the potential importance of dispositional differences, it nonetheless assumes an explicitly prosocial development trajectory. Questioning this assumption, I ask what the effects of mindfulness interventions may be for employees who are less inclined than others toward prosocial development.

Uniquely informative for examining this question are employees who are high in dispositional Machiavellianism (hereinafter termed *Machiavellians*)—a normally distributed trait that is part of the "dark triad" of personality (LeBreton et al., 2018). Machiavellians are characterized by cynicism, distrust, and calculated manipulation (Christie & Geis, 1970; Dahling et al., 2009; Furnham et al., 2013), and tend to hold condescending (Rauthmann, 2012), contemptuous views of others (Sanders et al., 2015; Schriber et al., 2017). Accordingly, I propose that Machiavellians carry into mindfulness practice a chronically negative, condescending, and contemptuous interpersonal orientation. This orientation may provide fertile ground for a broader constellation of other-directed affect marked by negative evaluation and disapproval—comprised of contempt, anger, and disgust—which, taken together, I conceptualize as *affective condemnation*. By facilitating conscious access to such dispositionally grounded condemnatory affect, I propose that mindfulness training may render affective condemnation more experientially accessible to Machiavellians.

Because Machiavellians are particularly attentive to reputation and interpersonal risk (Jones & Paulhus, 2014), I further propose that the affective condemnation mindfulness training may enliven in them is especially likely to be expressed through subtle and deniable forms of interpersonal mistreatment, as opposed to conspicuous forms of aggression (Greenbaum et al., 2017; LeBreton et al., 2018). Workplace incivility—characterized by low-intensity norm violations with ambiguous intent to harm (Andersson & Pearson, 1999)—fits this behavioral tendency particularly well. Accordingly, Machiavellians are more likely than most to engage in workplace incivility (Lata & Chaudhary, 2020). Thus, I propose that affective condemnation provides a pathway through which mindfulness training may foster higher levels of workplace incivility by Machiavellians. This possibility contrasts with prior evidence linking trait mindfulness to lower levels of enacted workplace incivility (Hülsheger et al., 2021).

The present study tests these ideas in a large organizational field experiment involving 600 employees of a healthcare organization who were randomly assigned to one of three conditions: (1) mindfulness training, (2) waitlist (passive control), or (3) regulated breathwork (active control). Participants reported their personality, affect, and behavior across three waves over a 30-day period. Results show that mindfulness training uniquely enlivened affective condemnation in Machiavellians, thereby leading to higher levels of workplace incivility. Results further show these effects did not translate into more of the overtly hostile work behaviors reflected by interpersonal deviance. This pattern fits the risk-averse, reputation-conscious proclivities of Machiavellians. Importantly, these effects remain robust when accounting for generalized negative affect, other dark personality types, and a range of theoretically relevant alternative mechanisms.

This research makes several contributions to the emerging literature on mindfulness and business ethics. First, it extends theory on the ethical consequences of mindfulness interventions by showing that they can enliven affective condemnation, with downstream implications for interpersonal mistreatment. Second, it identifies Machiavellianism as a critical boundary condition, demonstrating that the interpersonal effects of organizational mindfulness interventions depend in part on the personality structure of participating employees. In so doing, this research extends the S-ART framework by suggesting that the processes cultivated by mindfulness training may not always culminate in prosocial outcomes. Instead, they can render dispositionally grounded condemnatory affect more consciously accessible, producing qualitatively different—or even inverted—outcomes for

Machiavellians. Third, this research clarifies why workplace incivility emerges as the primary behavioral expression of affective condemnation for Machiavellians, whereas more overt forms of mistreatment do not. This contribution sheds new light on how organizational mindfulness interventions may contribute to subtle, pervasive, and costly forms of workplace misbehavior (Porath & Pearson, 2013).

Taken together, these findings reveal a "dark side" to organizational mindfulness interventions, lending support to Nietzsche's intuition in the epigram that sustained inward attention can bring underlying darkness to the surface. In so doing, they challenge the common assumption that organizational mindfulness interventions foster prosocial outcomes, suggesting that organizations may need to account for the possibility that mindfulness interventions can also provoke ethically problematic behaviors in the workplace.

Theoretical Background

Mindfulness Training and Affective Accessibility

Mindfulness training involves cultivating sustained, non-judgmental awareness of present moment experience. Through repeated attentional practice, mindfulness training has been theorized to strengthen metacognitive monitoring of internal states and sharpen sensitivity to affective and interoceptive cues (Hölzel et al., 2011; Lutz et al., 2008; Wielgosz et al., 2019). This enhanced internal monitoring is thought to improve access to nascent emotional signals before they translate into behavior, increasing the granularity and clarity of emotional experience (Lutz et al., 2008; Teper et al., 2013). Although mindfulness training is commonly assumed to facilitate the downregulation of negative emotions (e.g., Chambers et al., 2009; Roemer et al., 2015), emerging work also suggests that heightened attentional awareness can increase the salience of affective experience, including negative emotions (Kay et al., 2023; Lindsay & Creswell, 2017).

By fostering sensitivity to affective experience, mindfulness training may also improve access to intuitive processes. Dane and Pratt (2007) define intuitions as affectively charged impulses that arise through rapid, non-conscious, and holistic associations. Because mindfulness facilitates intrapsychic awareness (Brown et al., 2007), mindful individuals are thought to have greater access to such impulses (Dane, 2011; Dane & Pratt, 2009). Empirical evidence supports this proposition: mindful individuals display stronger congruence between implicit and explicit affect (Brown & Ryan, 2003; Remmers et al., 2016), greater access to unconscious preferences (Strick et al., 2012), and closer alignment between implicit and explicit self-views (Koole et al., 2009). Collectively, these findings suggest that mindfulness training may increase access to affectively laden intuitions that would otherwise remain outside of conscious awareness.

Affectively charged social intuitions can stem from rapid evaluations of others (Haidt, 2001). Of particular relevance to interpersonal behavior are contempt, anger, and disgust—a cluster of negative, other-directed emotions that are often studied as "other-condemning" emotions (Greenbaum et al., 2020a; Haidt, 2003; Rozin et al., 1999; Tangney et al., 2007). Although these emotions are commonly conceptualized as "moral emotions", I argue that they need not be inherently moral in content. For example, although they can arise in response to perceived wrongdoing (Kay et al., 2023), they can also reflect non-moral appraisals, including perceived incompetence, disrespect, and other forms of negative interpersonal evaluation (Hutcherson & Gross, 2011; Miceli & Castelfranchi, 2018). What unites these emotions when directed at others is therefore not that they are necessarily animated by moral judgment, but rather that they embody negative, condemnatory evaluations of others.

I conceptualize this constellation of emotions as *affective condemnation*: other-directed affect reflecting negative evaluation and disapproval. I use the term *affective condemnation*, rather than "other-condemning emotions" in order to capture the shared evaluative, other-directed affective quality of contempt, anger, and disgust—without implying that these emotions necessarily entail moral judgment. Affective condemnation differs from diffuse negative affect, which can capture unpleasant affective states without necessarily being condemnatory or directed at another person (e.g., sadness or anxiety). It is also narrower than generalized hostility, which encompasses a broader range of antagonistic reactions such as frustration, irritation, resentment, or perceived threat. By contrast, affective condemnation refers specifically to the experience of contempt, anger, and disgust directed toward others—whether animated by moral appraisal or not.

Building on this conceptualization, I draw on recent theorizing about the multilevel nature of mindfully informed emotional experience. In particular, Ashkanasy and Kay (2023) conceptualize mindfully informed emotions as unfolding across momentary within-person experience, stable individual differences, interpersonal signaling, group dynamics, and organizational climate. Consistent with this perspective, I focus on the within-person level and conceptualize affective condemnation as a proximal emotional experience whose accessibility may be enhanced by mindfulness practice.

Emerging empirical evidence provides initial support for this accessibility account. For example, Kay et al. (2023) found that mindfulness facilitated access to other-condemning emotions by witnesses of third-party injustice, thereby strengthening retribution toward perceived wrongdoers. In that explicitly moralized context, mindfulness facilitated access to affect triggered by perceived justice violations,

bringing into conscious awareness emotions that support norm enforcement. These findings demonstrate that mindfulness can facilitate access to other-directed condemnatory affect when the underlying appraisal is moral. They do not, however, establish that moral violation is necessary for such affect to become more accessible to conscious awareness. This leaves open the possibility that mindfulness may similarly facilitate access to such other-directed condemnatory affect arising from a broader set of other, potentially non-moral evaluations.

Extending this logic, I argue that mindfulness training can render a broader range of affective experience more readily accessible to conscious awareness. By repeatedly orienting attention toward ongoing internal experience, mindfulness training may increase the salience of affective responses that would otherwise be weakly attended to, or only partially accessible. Importantly, this process need not privilege any particular emotional content. To illustrate, imagine an employee who is prone to mild yet chronic feelings of contempt for his colleagues. Even in the absence of a specific triggering event, these feelings subtly shape how he experiences others around him, even though these feelings remain largely outside of conscious awareness. As this employee undergoes mindfulness training and repeatedly directs his attention inward, he begins to notice these recurring feelings of contempt. His colleagues have not behaved differently, nor has mindfulness training created these feelings. Rather, the change lies in experiential accessibility: repeated attention to internal experience has brought a pre-existing affective tendency to conscious awareness.

This illustration highlights an important feature of this theoretical account. Mindfulness training does not necessarily determine the content of affective experience; rather, it can increase conscious access to affect that is already present. In this sense, its effects can be ethically indeterminate: heightened awareness can render prosocial as well as antisocial affective tendencies more experientially accessible. The consequences of mindfulness training should therefore depend, in part, on the affective material already available to awareness in the first instance. This raises an important question: what determines the affective tendencies that mindfulness training brings more clearly into conscious awareness?

The S-ART Framework and Machiavellianism

To answer this question, I turn to guiding theory on the mechanisms by which mindfulness training may shape internal experience. Drawing on neuroscience, Vago and Silbersweig (2012) developed the self-awareness, self-regulation and self-transcendence (S-ART) framework to explain how mindfulness practice reshapes self-processing and emotion regulation systems. As a developmental model, the S-ART framework describes mindfulness practice as cultivating meta-awareness of internal states (self-awareness), the capacity to modulate one's responses (self-regulation), and a more positive relationship between self and others (self-transcendence). Vago and Silbersweig (2012) define self-transcendence as the development of "a positive relationship between self and other that transcends self-focused needs and increases prosocial characteristics" (p. 1). This framing gives the S-ART framework an explicitly prosocial developmental trajectory.

At the same time, the S-ART framework acknowledges that practitioners differ dispositionally. Indeed, Vago and Silbersweig (2012) explicitly identify dispositional differences as relevant to the outcomes of mindfulness practice and call for research to examine "dispositional differences amongst practitioners" (p. 24), as well as individual differences in developmental trajectories of the S-ART components. What the framework does not specify, however, is how such differences may shape whether its constituent developmental processes unfold in concert. In particular, it leaves open the possibility that heightened self-awareness and self-regulation may develop without a commensurate shift toward the prosocial self-transcendence it assumes. This possibility is consequential because research has shown that the effects of mindfulness training depend not only on the form of practice (Sedlmeier et al., 2012) but also on the personality structures of those who undergo it (Kay & Young, 2022). This leaves unaddressed an important theoretical question: what happens when the awareness and regulatory processes articulated by the S-ART framework operate for individuals with antisocial orientations.

This question undergirds a broader issue in research on self-regulatory competencies. Psychological capacities that enhance awareness and self-regulation are commonly assumed to yield adaptive or prosocial outcomes. For example, an expansive literature on authentic leadership presupposes that greater self-awareness and emotion regulation have positive implications for leaders and their followers (Gardner et al., 2011). Other evidence suggests that self-awareness and emotion regulation may function as content-neutral resources through which underlying dispositions can be more fully expressed, *for better or worse*. For example, Côté et al. (2011) demonstrated that emotion regulation knowledge—a key component of emotional intelligence—strengthens the relationship between moral identity and prosocial behavior, as well as the association between Machiavellianism and interpersonal mistreatment. Thus, greater regulatory capacity can facilitate the expression of prosocial as well as antisocial dispositions. By analogy, heightened awareness and regulatory capacity cultivated through mindfulness practice need not determine the content of what becomes experientially accessible. Rather, their consequences may depend, in part, on the dispositional tendencies brought to the practice.

Building from this logic, and consistent with Ashkanasy and Kay's (2023) multilevel perspective on mindfulness and emotion in the workplace, I argue that individual differences can channel heightened affective awareness in qualitatively different directions. In particular, following Côté et al. (2011), I focus on Machiavellianism because its distinctive interpersonal orientation provides a theoretically diagnostic case in which greater access to internal experience may render antisocial, rather than prosocial, affective tendencies more experientially accessible.

Defined by calculated self-interest, manipulation, and moral expediency, Machiavellians have a persistently negative interpersonal orientation (Christie & Geis, 1970; Dahling et al., 2009). Indeed, Machiavellians tend to hold a cynical view of human nature and perceive others as self-interested, untrustworthy, and potentially exploitative. Importantly, this orientation extends beyond abstract beliefs about people in general. Rauthmann (2012), for example, found that Machiavellians evaluate others with whom they are acquainted more negatively, perceiving them as less nurturing, sociable, open, intelligent, and interpersonally skilled—which he described collectively as "condescending views of others" (p. 492).

This negatively evaluative interpersonal orientation, in turn, has an affective component. Most notably, Machiavellians are considerably more likely to view others with contempt—a tendency to look down on, devalue, and distance oneself from others. Indeed, across independent studies, Machiavellianism has been strongly associated with trait contempt (Sanders et al., 2015; Schriber et al., 2017). This is consistent with evidence that Machiavellians are prone to hostile interpretations of ambiguous social behavior (Jiang et al., 2024) and negative perceptions of close relationship partners (Ináncsi et al., 2018). Thus, rather than assuming that Machiavellians experience others as flawed in a moral sense, I posit that they can more precisely be characterized as dispositionally predisposed to form negative, condescending interpersonal evaluations, with an especially strong tendency to experience others with contempt.

Although contempt provides the clearest dispositional anchor for this interpersonal orientation, it need not exhaust its affective expression. As discussed above, contempt, anger, and disgust are distinguishable yet related forms of negative, other-directed condemnatory affect and each can arise from moral as well as nonmoral appraisals. Accordingly, it should not be assumed that Machiavellians are dispositionally prone to each constituent emotion to the same degree. Rather, I propose that Machiavellians' chronically negative and contemptuous interpersonal orientation provides a dispositional basis for affective condemnation as a broader constellation of other-directed affect marked by negative evaluation and disapproval. This possibility is especially relevant because the apparent interpersonal "coldness" of Machiavellians does not imply an absence of affective experience. Indeed, Machiavellians have been found to experience substantial negative affect, even though they may not express it openly (Szijjártó & Bereczkei, 2015).

If mindfulness practice facilitates access to—and conscious awareness of—ongoing affective experience, it may render the affective component of Machiavellians' negatively evaluative interpersonal orientation more salient. In S-ART terms, increased meta-awareness may enable Machiavellians to register more clearly the condemnatory affect that tends to accompany their perceptions of others. Crucially, however, greater awareness need not itself produce the prosocial reorientation associated with self-transcendence. For individuals whose pre-existing interpersonal orientation is characterized by cynicism, distrust, and contempt-proneness, heightened awareness may instead make those affective tendencies more experientially accessible. Thus, I argue that the self-awareness processes articulated by the S-ART framework may develop without necessarily being accompanied by a commensurately prosocial tilt toward self-transcendence.

Consistent with this reasoning, theorizing on mindfulness suggests that heightened monitoring of internal experience can increase affective reactivity rather than uniformly diminish it (Lindsay & Creswell, 2017). In the case of Machiavellians, this implies a potential asymmetry in the developmental processes articulated by the S-ART framework: greater awareness of internal experience may bring affective tendencies grounded in this pre-existing interpersonal orientation to conscious awareness without producing a corresponding shift toward prosocial self-transcendence. Accordingly, rather than uniformly cultivating prosocial affect, mindfulness training may enliven affective condemnation in Machiavellians.

H1 *Mindfulness training enlivens affective condemnation in Machiavellians.*

Affective Condemnation and Machiavellian Incivility

If mindfulness training enlivens affective condemnation in Machiavellians, how is their condemnation likely to express behaviorally? I argue that the answer depends, in part, on the other-directed nature of affective condemnation. Unlike diffuse negative affect—which captures unpleasant affective states without necessarily implicating others—affective condemnation consists of contempt, anger, and disgust directed at others, reflecting negative evaluation and disapproval. Although contempt, anger, and disgust have distinguishable action tendencies, each can orient behavior toward altering one's relationship with the target through responses like confrontation, distancing, avoidance, or exclusion (Hutcherson & Gross, 2011; Miceli & Castelfranchi, 2018). Because it is

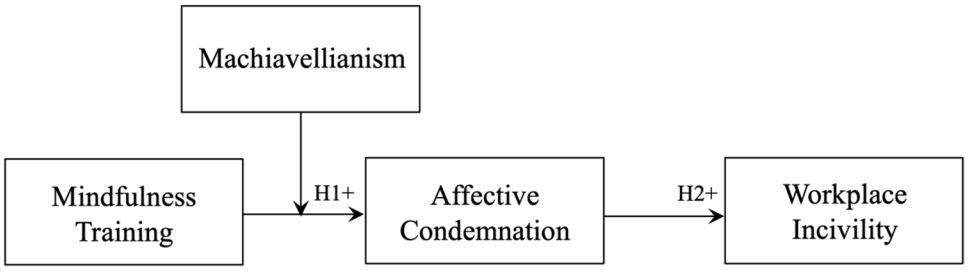

Fig. 1 Theoretical model. Mindfulness training is proposed to enliven affective condemnation in Machiavellians (H1), which in turn is positively associated with enacted workplace incivility (H2)

explicitly directed at others, affective condemnation should provide a more targeted affective basis for interpersonal misbehavior than negative affect more generally.

For Machiavellians, however, affective condemnation may be especially unlikely to manifest as overt aggression or high-risk deviance. Machiavellians are characteristically calculated, reputation-conscious, and attentive to the instrumental consequences of their actions (Jones & Paulhus, 2014; LeBreton et al., 2018). Thus, rather than openly expressing affective condemnation in overt ways that are readily sanctionable, they should be especially inclined toward forms of interpersonal mistreatment that allow their affective condemnation to be expressed while preserving deniability and limiting reputational cost.

Workplace incivility—defined as low-intensity norm violations with ambiguous intent to harm (Andersson & Pearson, 1999)—fits this behavioral profile particularly well. Incivility is a subtle form of interpersonal mistreatment through which negative evaluation and antagonism can be expressed without the visibility or clear harmful intent associated with more overt forms of interpersonal deviance. Incivility is often affectively driven; indeed, prior research has linked other-directed emotions such as contempt and anger to the instigation of workplace incivility (Meier & Semmer, 2013; Miranda & Welbourne, 2023). Incivility also varies systematically with individual differences (Gabriel et al., 2018), allowing perpetrators to signal their condemnation in ways that are difficult to sanction (Cortina et al., 2001, 2013; Schilpzand et al., 2016). Recent evidence shows that Machiavellians are especially prone to such subtle forms of mistreatment, including rudeness, dismissive behavior, and covert disrespect (Lata & Chaudhary, 2020). Such behaviors fit their antagonistic yet cautious interpersonal style and provide a well-suited outlet for affective condemnation while limiting reputational and instrumental costs.

Just as Machiavellians may be inclined to express affective condemnation through workplace incivility, they may be less inclined toward more overt behavioral expressions such as interpersonal deviance. Behaviors such as publicly embarrassing, insulting, or otherwise openly mistreating coworkers are relatively visible and readily attributable to the perpetrator, increasing the likelihood of reputational or organizational consequences. Workplace incivility, by contrast, is low in intensity and ambiguous in intent, allowing condemnatory affect to be expressed through dismissiveness, discourtesy, exclusion, or similar behaviors while retaining plausible deniability. For Machiavellians, therefore, affective condemnation should be particularly likely to find expression through workplace incivility.

H2 *The affective condemnation that mindfulness training enlivens in Machiavellians is positively associated with workplace incivility.*

To summarize, I propose a process through which mindfulness training renders dispositionally grounded, other-directed condemnatory affect more consciously accessible. Building on the S-ART framework, I propose that greater access to internal experience need not be accompanied by a commensurate shift toward prosocial self-transcendence, particularly for individuals whose pre-existing interpersonal dispositions are cynical, distrustful, and prone to experience others with contempt. For Machiavellians, heightened awareness of affective condemnation is more likely to manifest as subtle, deniable forms of interpersonal mistreatment captured by workplace incivility—as opposed to more overt and socially costly forms of aggression represented by interpersonal deviance. Accordingly, the present research tests a first-stage moderated mediation model in which mindfulness training enlivens affective condemnation in Machiavellians, which in turn is positively associated with workplace incivility. This theoretical model is depicted in Fig. 1.

Methods

Sample

A large organizational mindfulness intervention was conducted to test this model.[1] This field experiment involved 600 employees of a large North American healthcare organization, including 12 hospitals, 90 community health sites, and 33 other work sites. Participants in the analytic sample

[1] The same intervention and sample were used in Kay and Skarlicki (2020) to test a different theoretical model.

were mostly female (89.0%), ranging in age from their 20s to 60s—with the largest groups aged 31–40 (27.1%), 41–50 (27.9%), and 51–60 (25.4%). Most participants were Caucasian (68.4%), with the remainder representing South Asian (14.0%), East Asian (8.9%), and a variety of other ethnic backgrounds (8.6%). The majority (65.7%) were healthcare professionals (e.g., doctors or nurses), followed by managerial (18.8%), administrative (13.2%), and technical staff (2.3%).

Organizational Context

The host organization operates in a highly regulated, care-oriented environment characterized by strong professional norms that emphasize patient wellbeing, accountability, and ethical conduct. Employees typically work in team-based settings under conditions of time pressure and resource constraint, with performance evaluated through a combination of clinical outcomes, service quality indicators, and adherence to professional and organizational standards. As is common in large healthcare organizations, these features create a context in which interpersonal conduct is both normatively salient and consequential, while also placing a premium on maintaining professional composure in everyday interactions.

Procedure

Recruitment was conducted in cooperation with the host organization. Together with a professional media support team, I recorded a recruitment video, which the host organization distributed two months prior to the start of the study. Meanwhile, the host organization set up a registration system designed to support a blinded field experiment. Once registration was complete, participants were randomly assigned to one of three conditions: (1) mindfulness; (2) regulated breathing (active control); or (3) waitlist (passive control).

Mindfulness Condition

The host organization independently contracted a commercial mindfulness service provider. To suit the time demands of a busy working population, each day of the 30-day program entailed about five minutes of asynchronous online instruction and 10–15 min of mindfulness practice, with participants prompted by email and automated text message to take five mindful breaths five times per day. Consistent with other organizational mindfulness interventions (Creswell, 2017), the program emphasized building moment-to-moment attention and awareness in daily experience. Participants were instructed to do so by directing their attention to their immediate experience, including features of their environment (e.g., colors, textures, temperature, and sounds), bodily sensations (e.g., the contact of their feet with the ground), and their breath. They were further instructed to observe their experience with openness and without judgment, gently returning their attention to the breath whenever their minds wandered. The reminders to take five "mindful breaths" prompted participants to re-engage in this practice throughout the workday.

This intervention was intentionally brief, as prior research suggests that even brief mindfulness training can produce measurable psychological effects (Creswell, 2017). Accordingly, this intervention was designed not to replicate intensive mindfulness programs, but rather to introduce a scalable form of attentional practice capable of influencing everyday work experience. Importantly, the intervention centered on repeated engagement in brief self-guided mindful breathing exercises embedded throughout the workday, which constituted the primary mechanism through which the training was expected to affect participants' moment-to-moment experience. The automated prompts and reminders were intended to support repeated engagement, reinforcing attentional practice across the intervention period.

Active Control Condition

To mitigate demand characteristics, expectancy, and placebo effects, an active control condition was included. Following best practice recommendations (Davidson & Kaszniak, 2015), the active control intervention paralleled the mindfulness program in form, structure, and delivery. As with the mindfulness program, participants received approximately five minutes of daily instruction, followed by automated prompts by text message encouraging five brief practice sessions per day. Like the mindfulness condition, these sessions were self-guided and did not involve additional instruction. Importantly, this intervention centered on repeated engagement in a structured breathing exercise broadly matched in frequency and duration to the mindfulness condition, but without instructions to cultivate present moment attention and awareness. In other words, the active control intervention was intended to isolate the specific effects of mindful attention from those associated with structured breathing practice.

To facilitate transparency and enable meaningful comparison between conditions, detailed procedural information about program structure and delivery is provided in Table 1. Further details regarding the structure and content of training exercises are provided in Appendix 1.[2]

[2] To respect proprietary interests, the provider is not identified by name; detailed information about intervention structure, delivery, and instructions is nevertheless provided in Table 1 and Appendix 1.

Table 1 Structural equivalence of mindfulness vs. active control training programs

Feature	Experimental	Active Control
Program focus	mindfulness	regulated breathwork
Program length	30 days	30 days
Delivery modality	online asynchronous	online asynchronous
Multimedia	yes (videos)	yes (videos)
Core session length	~5 min	~5 min
Session frequency	1 × per day	1 × per day
Progress tracking	yes	yes
Training "buddy"	yes (optional)	yes (optional)
Practice length	~2–3 min	~2–3 min
Practice frequency	up to 5 × per day	up to 5 × per day
Reminder system	yes (automated prompts)	yes (automated prompts)

Both interventions were delivered via professionally designed web platforms and were designed to parallel one another closely in format, program length, delivery modality, and user experience

Waitlist Control Condition

Participants assigned to the waitlist control condition did not receive any training during the 30-day study period. Consistent with standard procedures, they were informed that they would undergo training at a later date (six weeks following the start of the focal training period), but they were not given access to any training materials or daily practice instructions during the study period. As such, participants in the waitlist control condition continued life as usual and only participated in data collection, providing a baseline against which to compare the effects of both the mindfulness and active control conditions.

Exclusions

Of the 600 registrants, 576 participated in data collection. Of these, 501 participated fully (83.5% response rate). To ensure data quality and integrity, an a priori exclusion rule was applied to participants who failed more than one of three attention checks in any survey. On this basis, 28 participants were excluded. These exclusions did not meaningfully alter the pattern of results. The final sample comprised 473 participants: 146 in the mindfulness training condition (30.9%), 155 in the active control condition (32.8%), and 172 in the waitlist control condition (36.4%).

Training Compliance

Consistent with best practices, training compliance checks were conducted (Jamieson & Tuckey, 2017) by asking participants in both training conditions to anonymously self-report how much they engaged with their assigned program over the 30-day period. Nearly two-thirds (65.5%) reported practicing at least three times per day, and over two-thirds (67.8%) reported practicing on 22–30 days of the 30-day program. There was no significant difference in amount of practice between the training groups.

Measures

Data were collected at three points in time: at baseline, during the week immediately before the training period (T1); three weeks into the training period (T2); and during the week immediately following the training period (T3). For this study, measures were as follows:

Trait Mindfulness

At T1, trait mindfulness was measured with the Five Facet Mindfulness Questionnaire—Short Form (Bohlmeijer et al., 2011). This measure established participants' level of dispositional mindfulness prior to the intervention, thereby distinguishing stable individual differences from changes attributable to training. Participants indicated how often they experience mindful awareness (e.g., "*I watch my feelings without getting carried away by them*") on a 7-point Likert scale ranging from 1 (*never*) to 7 (*always*). Items were reverse-coded as necessary and averaged, such that higher scores reflect higher levels of trait mindfulness. This scale showed excellent reliability ($\alpha = .90$).

Moderator

Also at T1, Machiavellianism was measured with the Short Dark Triad (Jones & Paulhus, 2014), a widely used 27-item scale comprising nine items each for subclinical Machiavellianism, narcissism, and psychopathy (LeBreton et al., 2018). Narcissism and psychopathy were included as controls for robustness testing. Sample items are: *"It's not wise to tell your secrets"* (Machiavellianism), *"People see me as a natural leader"* (narcissism), and *"I like to get revenge on authorities"* (psychopathy). Responses were on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Scores were calculated by averaging the relevant items. Internal reliability was good for Machiavellianism ($\alpha = .74$), marginal for narcissism ($\alpha = .68$), and low for psychopathy ($\alpha = .59$).

Theorized Mediator

At T2, affective condemnation was measured with a 3-item scale. This scale captured the frequency with which participants experienced the three constituent emotions of affective condemnation toward their coworkers: contempt, anger, and disgust. Specifically, participants were asked: "Over the

last two weeks how often have you felt each of the following emotions about your colleagues?" Responses were on a 5-point Likert scale ranging from 1 (*never or almost never*) to 5 (*always or almost always*). This scale demonstrated good reliability (α=.74).

Alternative Explanatory Mechanisms

Also at T2, additional constructs were measured to examine alternative explanatory pathways. These constructs capture conceptually distinct processes that are more downstream, regulatory, or elaborative than affective condemnation, reflecting how individuals subsequently process or manage their affective impulses. Accordingly, they are treated as theoretically grounded robustness checks rather than as part of the theoretical model.

First, although Machiavellians typically rely on suppression to conceal their antagonism toward others (Liyanagamage et al., 2023), mindfulness training may disrupt maladaptive emotion regulation strategies (Goldin & Gross, 2010). Emotion suppression was therefore measured using the relevant four-item subscale of the Emotion Regulation Questionnaire (Gross & John, 2003). Participants indicated how often they suppressed their emotions at work over the same preceding two-week period as they did for affective condemnation (e.g., "*I controlled my emotions by not expressing them"*) on a 5-point Likert scale from 1 (*never or almost never*) to 5 (*always or almost always*). This scale showed good reliability (α=.79).

Second, Machiavellians tend to engage in angry rumination (Nedeljković et al., 2023), a cognitive pathway that can lead to incivility (Meier & Semmer, 2013), yet mindfulness has been linked to lower hostility and aggression through lower rumination (Borders et al., 2010; Eisenlohr-Moul et al., 2016; Long & Christian, 2015; Peters et al., 2015). Angry rumination was therefore measured with six items from the *angry afterthoughts* subscale of the Angry Rumination Scale (Sukhodolsky et al., 2001). Angry rumination reflects the tendency to perseverate on anger-inducing experiences. Participants indicated how often they had such thoughts at work over the same preceding two-week period as they did for affective condemnation and emotion suppression (e.g., "*I found myself thinking over and over about things that made me angry"*) on a 5-point Likert scale from 1 (*never or almost never*) to 5 (*always or almost always*). This scale showed excellent reliability (α=.93).

Third, Machiavellians also tend to engage in dehumanization (Maftei et al., 2022), a cognitive-motivational mechanism that can facilitate interpersonal mistreatment (Christoff, 2014). Accordingly, dehumanization was measured with a 5-item scale by Detert et al. (2008). This scale reflects the denial of coworkers' humanity, diminishing empathic concern and lowering inhibitions against mistreatment. As dehumanization is a broader cognitive-motivational mechanism than the other alternative mechanisms noted above, participants were asked to rate their agreement with broad statements such as "*Someone who acts like a dog should be treated like a dog*" on a 7-point Likert scale from 1 (*strongly disagree*) to 7 (*strongly agree*). This scale demonstrated excellent reliability (α=.91).

Dependent Variables

At T3, two dependent variables that capture distinct forms of interpersonal mistreatment were measured. First, the focal dependent variable—workplace incivility—was measured with the 7-item Workplace Incivility Scale (Cortina et al., 2001), adapted to study context. Participants indicated how often they engaged in uncivil behaviors toward their colleagues during the training period (e.g., "*I ignored or excluded a colleague from professional camaraderie*"). Responses were on a 5-point Likert scale ranging from 1 (*never*) to 5 (*more than once per day*). This scale demonstrated strong reliability (α=.80).

Second, interpersonal deviance was included as a theoretically relevant comparison outcome capturing more overt forms of interpersonal mistreatment at work. It was measured with the 7-item Interpersonal Deviance Scale (Bennett & Robinson, 2000), also adapted to context. This measure reflects overtly aggressive or damaging actions directed at coworkers (e.g., "*I publicly embarrassed someone*"). As with workplace incivility, participants reported how often they enacted such behaviors over the training period, using the same 5-point Likert scale from 1 (*never*) to 5 (*more than once per day*). This scale also showed strong reliability (α=.85).

Manipulation Check

In order to assess whether the intervention increased mindful awareness, at T3 mindfulness was measured with the same scale used at baseline (Bohlmeijer et al., 2011). This ensured conceptual consistency with the baseline measure while capturing changes attributable to the training. Unlike the baseline measure, however, participants reported how frequently they experienced lapses in attention over the preceding two-week period. By anchoring responses in this way, this measure reflects participants' habitual mindful awareness in the second half of the program. Prior research has similarly used temporally bounded adaptations of the FFMQ in order to assess changes in mindfulness (Jones et al., 2019). Items were reverse-coded as necessary and averaged, with higher scores reflecting greater mindfulness. This scale showed excellent reliability (α=.92).

Controls

To account for alternative explanations and isolate the effects of Machiavellianism on incivility via affective condemnation—as opposed to negative emotions more generally—negative affect was included as a covariate. Like affective condemnation, negative affect was measured at T2 to capture changes in negative affective experience over the same period. To do so, the 5-item subscale of the Positive and Negative Affect Schedule (Thompson, 2007) was used. As with affective condemnation, participants indicated how often they felt negative emotions (*afraid*, *nervous*, *upset*, *ashamed*, and *hostile*) over the preceding two-week period. Responses were on a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*). This scale showed strong reliability (α = .81).

Results

Exploratory Factor Analysis: Affective Condemnation vs. Negative Affect

To ensure that any observed effects of mindfulness training on affective condemnation were not attributable to changes in negative affect more generally, Promax-rotated exploratory factor analysis was conducted on all eight items in the scales for (1) affective condemnation and (2) negative affect. Results indicated a clear two-factor solution. The three affective condemnation items (*contempt*, *anger*, *disgust*) loaded strongly onto one factor, along with the item "hostile" from the negative affect dimension of the PANAS-SF. The remaining items for negative affect (*afraid*, *nervous*, *upset*, *ashamed*) loaded cleanly onto a second factor.

Consistent with the theoretical model, affective condemnation was operationalized as other-directed affect reflecting negative evaluation and disapproval—as captured by contempt, anger, and disgust directed toward coworkers. Although the PANAS item "hostile" overlapped empirically with these emotions, it was not incorporated into affective condemnation. Unlike the three focal items, which explicitly assessed discrete emotions directed at coworkers, "hostile" was measured as a general affective state without an identified interpersonal target. Its loading on the same factor therefore indicates overlap between affective condemnation and broader antagonistic affect, rather than conceptual equivalence. Because this overlap raises the possibility that the focal effects might reflect generalized hostility as opposed to affective condemnation, however, supplementary analyses were conducted following the hypothesis tests (refer to Sect. "Supplementary Analyses: Hostile Affect" below). The remaining PANAS-SF items for negative affect were retained as a covariate to partial out this distinct component of affective experience (α = .81). This empirically informed, conceptually grounded specification did not meaningfully alter the pattern of results.

Additional Measurement Analyses: Incivility vs. Interpersonal Deviance

To further assess the distinctiveness of workplace incivility and interpersonal deviance, confirmatory factor analysis was conducted comparing a two-factor model, in which incivility and interpersonal deviance items loaded on separate latent factors, to a one-factor alternative in which all items loaded onto a single factor. The two-factor model showed good fit to the data, $\chi^2(76) = 173.04$, CFI = .97, TLI = .96, RMSEA = .05, SRMR = .07, and fit significantly better than the one-factor model, $\chi^2(77) = 248.43$, CFI = .95, TLI = .94, RMSEA = .07, SRMR = .08, $\Delta\chi^2(1) = 39.66$, $p < .001$.

The latent correlation between the two constructs was high ($r = .84$), indicating that workplace incivility and interpersonal deviance are closely related forms of interpersonal mistreatment. At the same time, the superior fit of the two-factor model supports treating them as empirically distinguishable. Taken together, these results provide additional support for the measurement distinction underlying the present theoretical arguments and empirical tests.

Manipulation Check

Means, standard deviations, and correlations are shown in Table 2. As a manipulation check, ANCOVA was conducted to examine post-training mindfulness (T3) with experimental condition as the independent variable and trait mindfulness (T1) as covariate. Results showed a significant main effect of experimental condition, $F(2, 469) = 17.36$, $p < .001$, partial $\eta^2 = .07$. Estimated marginal means indicated that participants in the mindfulness training condition reported higher levels of mindfulness (M = 4.86, SE = .04) relative to the waitlist control group (M = 4.55, SE = .04), ΔM = .310, SE = .057, $p < .001$. Participants in the active control condition also reported higher post-training mindfulness than the waitlist group (M = 4.81, SE = .04). Overall, these results indicate that participants in both the mindfulness and breathwork conditions reported higher levels of post-training mindfulness relative to participants in the waitlist condition, with the highest mean observed in the mindfulness condition.

Hypothesis Tests

Hypothesis tests were conducted using Hayes' (2018) PROCESS macro (Model 7) with 10,000 bootstrap samples and 95% confidence intervals. For multicategorical moderated mediation analysis, indicator coding was used with

Table 2 Descriptive statistics, reliabilities, and correlations among study variables

Variable	Mean	SD	1	2	3	4	5	6	7	8	9	10	11
1. Machiavellianism (T1)	3.05	.84	(.74)										
2. Trait Mindfulness (T1)	4.49	.67	−.23***	(.90)									
3. Active Control Condition	0.47	.50	−.01	−.09	–								
4. Experimental Condition	0.92	1.00	.03	−.10†	–	–							
5. Affective Condemnation (T2)	1.68	.76	.17***	−.12**	−.00	.06	(.74)						
6. Negative Affect (T2)	2.06	.74	.16***	−.34***	−.02	−.05	.46***	(.81)					
7. Emotion Suppression (T2)	2.64	.72	.13**	−.17***	−.05	.03	.07	.14**	(.79)				
8. Angry Rumination (T2)	2.08	.85	.23***	−.39***	−.04	.03	.37***	.52***	.15***	(.93)			
9. Dehumanization (T2)	1.52	.85	.35***	−.05	−.10†	−.01	.24***	.13**	.08†	.23***	(.91)		
10. Workplace Incivility (T3)	1.31	.38	.15***	−.13**	.05	.05	.24***	.20***	−.05	.18***	.21***	(.80)	
11. Interpersonal Deviance (T3)	1.12	.29	.16***	−.12**	.11*	.16**	.16***	.19***	−.05	.18***	.17***	.66***	(.85)

Pearson correlations. Analytic $n = 327$ for Active Control Condition, 318 for Experimental Condition, and 473 for all other correlations

† $p < .10$, * $p < .05$, ** $p < .01$, *** $p < .001$

Conditions coded 0 (*waitlist control*), 1 (*active control*), 2 (*mindfulness training*)

Active Control Condition = Breathwork training group vs. waitlist control group

Experimental Condition = Mindfulness training group vs. waitlist control group

Negative Affect reflects the four-item PANAS-SF composite (*afraid*, *nervous*, *upset*, *ashamed*) retained following exploratory factor analysis. The "hostile" item was excluded and examined separately

the waitlist control group coded 0, the active control group coded 1, and the mindfulness training group coded 2 (Hayes & Montoya, 2017). Experimental condition was specified as the independent variable, Machiavellianism as the first-stage moderator, and affective condemnation as the mediator predicting workplace incivility as the focal-dependent variable, and interpersonal deviance as a theoretically relevant comparison outcome. Finally, negative affect was included as a covariate, which did not meaningfully alter the pattern of results.

As shown in Table 3, Machiavellianism moderated the effect of experimental condition on affective condemnation. Specifically, the interaction between mindfulness training and Machiavellianism was significant ($b = .24$, SE = .089, $t = 2.75$, $p = .006$), whereas the interaction between the active control and Machiavellianism was not ($b = .033$, SE = .089, $t = .37$, $p = .71$). As depicted in Fig. 2, the interaction pattern indicates that the effect of mindfulness training on affective condemnation increased as a function of Machiavellianism. Thus, supporting Hypothesis 1, mindfulness training enlivened affective condemnation in Machiavellians.

To contextualize the magnitude of this effect, consistent with Hayes (2018), predicted values of affective condemnation were examined at low (16th percentile), median (50th percentile), and high (84th percentile) levels of Machiavellianism. For high Machiavellians, the predicted mean of affective condemnation was 1.98 in the mindfulness training condition, compared with 1.63 in the waitlist control condition and 1.67 in the active control condition. Thus, high Machiavellians in the mindfulness training condition reported higher levels of affective condemnation by.35 points relative to the waitlist control ($d = 0.55$), and by.31 points relative to the active control ($d = 0.49$). According to conventional benchmarks, these effect sizes are considered moderate (Cohen, 1988). By contrast, differences between conditions were negligible for participants who were low in Machiavellianism.

In turn, affective condemnation predicted significantly higher levels of workplace incivility ($b = .09$, SE = .025, $t = 3.68$, $p < .001$). Accordingly, the conditional indirect effect of experimental condition on workplace incivility was positive for the mindfulness training condition (*index* = .023, SE = .012, 95% CI [.003,.049]) and non-significant for the active control condition (*index* = .003, SE = .009, 95% CI [-.013,.024]). Supporting Hypothesis 2, these results indicate that the affective condemnation enlivened by mindfulness training in Machiavellians translated to more workplace incivility. By contrast, as a theoretically relevant comparison, the corresponding conditional indirect effect on interpersonal deviance was non-significant for both the mindfulness training condition (*index* = .008, SE = .006, 95% CI [-.001,.022]) and the active control condition (*index* = .001, SE = .004, 95% CI [-.005,.011]).

Supplementary Analyses: Hostile Affect

The exploratory factor analysis reported above (refer to Sect. "Exploratory Factor Analysis: Affective Condemnation vs. Negative Affect") indicated that the PANAS-SF item "hostile" loaded on the same factor as contempt, anger,

Table 3 Regression results and conditional indirect effects for the hypothesized moderated mediation model

	Affective Condemnation				Workplace Incivility (Y_1)				Interpersonal Deviance (Y_2)			
	R^2	*b*	SE	*t*	R^2	*b*	SE	*t*	R^2	*b*	SE	*t*
Total Effects	.24				.07				.05			
Constant		.70	.10	6.93		1.00***	.06	17.33		.90***	.04	20.11
Active Control (X_1)		.01	.07	.12		.04	.04	.97		.07*	.03	2.06
Mindfulness Training (X_2)		.12	.08	1.61		.03	.04	.77		.08*	.03	2.27
Machiavellianism (Mach)		−.00	.06	−.02								
Active Control x Mach		.03	.09	.37								
Mindfulness x Mach		.24**	.09	2.75								
Negative Affect		.45***	.04	10.77		.06*	.03	2.40		.06**	.02	2.95
Affective Condemnation						.09***	.03	3.68		.03†	.02	1.71

Indirect Effect of Active Control	*b*	SE	LLCI	ULCI	*b*	SE	LLCI	ULCI
Active Control (X_1) → Affective Condemnation → Y_1 and Y_2	.001	.006	−.013	.014	.000	.003	−.005	.006
Conditioned upon levels of Machiavellianism								
Low (16th percentile)	−.002	.010	−.023	.016	−.001	.004	−.010	.006
Median (50th percentile)	.001	.006	−.013	.013	.002	.003	−.005	.006
High (84th percentile)	.004	.011	−.017	.028	.001	.005	−.006	.012
Index of Moderated Mediation	.003	.009	−.013	.024	.001	.004	−.005	.011

Indirect Effect of Mindfulness Training	*b*	SE	LLCI	ULCI	*b*	SE	LLCI	ULCI
Mindfulness Training (X_2) → Affective Condemnation → Y_1 and Y_2	.012	.009	−.003	.034	.004	.004	−.002	.014
Conditioned upon levels of Machiavellianism								
Low (16th percentile)	− .008	.010	−.028	.013	−.003	.004	−.012	.005
Median (50th percentile)	.010	.009	−.004	.030	.004	.004	−.002	.013
High (84th percentile)	.033*	.017	.005	.073	.012	.009	−.002	.032
Index of Moderated Mediation	.023*	.012	.003	.049	.008	.006	−.001	.022

$N = 473$. $^{\dagger}p < .10$, $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$

Indicator coding used with Waitlist Control as the reference category for X_1 and X_2

CI = 95% Confidence Interval, *LL* Lower Level, *UL* Upper Level

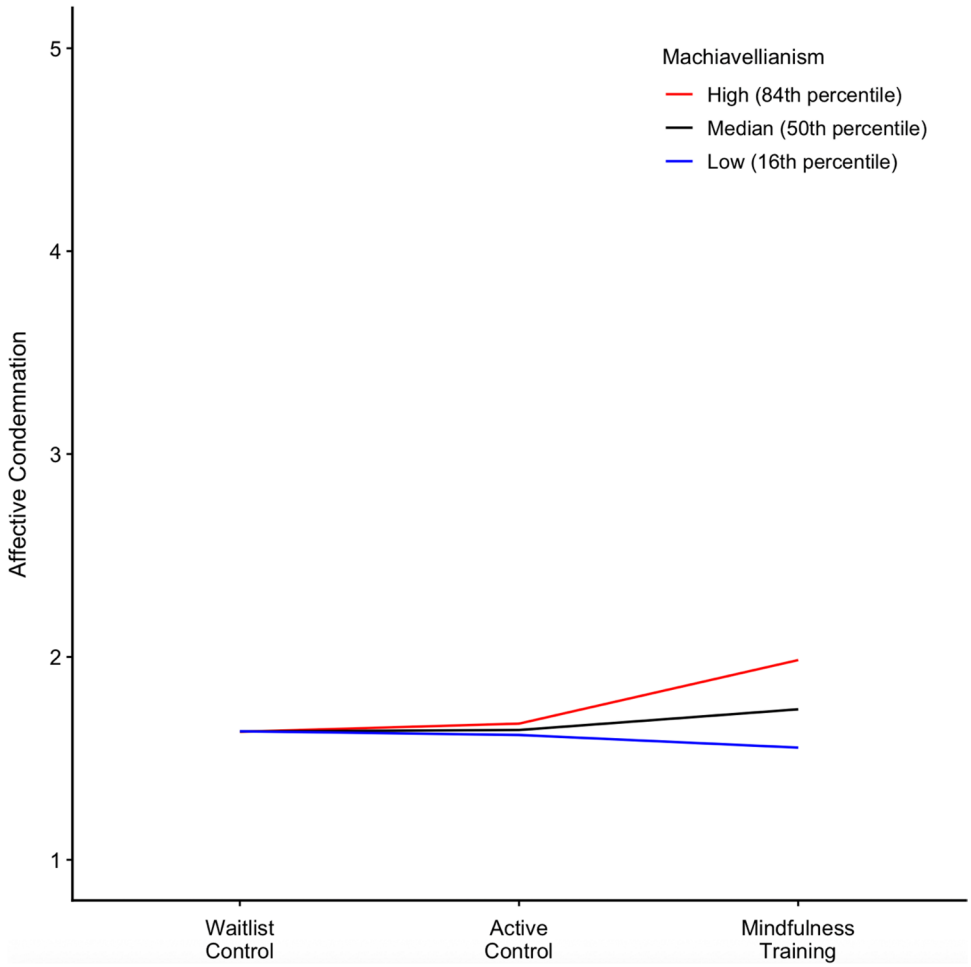

Fig. 2 Interaction between mindfulness training and Machiavellianism

and disgust. To examine whether the hypothesized effects reflected hostile affect rather than affective condemnation, two supplementary analyses were conducted. First, the interaction between mindfulness training and Machiavellianism was tested as a predictor of hostility. Unlike the corresponding effect on affective condemnation, this interaction was non-significant (b = -.08, SE = .09, t = −0.91, p = .36). Accordingly, the index of moderated mediation on workplace incivility through hostility was also non-significant (*index* = -.010, SE = .013, 95% CI [-.039,.014]). Second, the theoretical model was re-tested with hostility included as a control variable. The interaction between mindfulness training and Machiavellianism on affective condemnation remained significant (b = .27, SE = .09, t = 3.12, p = .002), as did the conditional indirect effect on workplace incivility (*index* = .017, SE = .010, 95% CI [.001,.040]). Similarly, the conditional indirect effect on interpersonal deviance remained non-significant (*index* = .002, SE = .005, 95% CI [-.008,.014]). Thus, although hostile affect exhibited empirical overlap with affective condemnation, the pattern of results was not attributable to hostility alone.

Supplementary Analyses: Alternative Explanatory Mechanisms

Although affective condemnation is the theorized mechanism, supplementary analyses were conducted to assess whether the observed effects of mindfulness training on Machiavellians remain robust to the inclusion of alternative, theoretically distinct yet plausible mechanisms that reflect more downstream, regulatory or elaborative processes. Accordingly, the model was respecified to include three additional mediators: (1) emotion suppression, (2) angry rumination, and (3) dehumanization (refer to Sect. "Measures" above for a description of—and rationale for—each alternative mechanism). These analyses are not intended to adjudicate among competing mediators, but rather to assess whether affective condemnation remains robust when accounting for other theoretically distinct yet conceptually plausible pathways.[3]

[3] As previously noted, the measures used in these supplementary analyses did not have fully equivalent referents. Affective condemnation was explicitly directed toward coworkers, whereas the alternative

Table 4 Summary of alternative psychological mechanism tests

Psychological Mechanism	Mindfulness Training x Mach Interaction	Conditional Indirect Effect on Workplace Incivility	Conditional Indirect Effect on Interpersonal Deviance	Interpretive Conclusion
Affective Condemnation (theorized mechanism)	Significant (high Mach)	Significant (high Mach)	No evidence of effect	Supports theorized mechanism
Emotion Suppression (alternate mechanism #1)	No evidence of effect	No evidence of effect	No evidence of effect	No evidence of alternate mechanism
Angry Rumination (alternate mechanism #2)	No evidence of effect	No evidence of effect	No evidence of effect	No evidence of alternate mechanism
Dehumanization (alternate mechanism #3)	No evidence of effect	No evidence of effect	No evidence of effect	No evidence of alternate mechanism

Results showed that Machiavellianism did not moderate the effect of training on emotion suppression (*mindfulness*: b = -.12, SE = .095, t = −1.27, p = .21; *active control*: b = -.12, SE = .095, t = −1.24, p = .22) or angry rumination (*mindfulness*: b = .028, SE = .096, t = .29, p = .77; *active control*: b = .085, SE = .096, t = .89, p = .37). However, it did moderate the effect of training on dehumanization—but only for participants in the active control condition (*mindfulness*: b = -.10, SE = .11, t = -.95, p = .34; *active control*: b = -.28, SE = .11, t = −2.66, p = .008). These results reveal that, for Machiavellians, mindfulness training selectively enlivened affective condemnation and had no significant effect on these alternate affective, cognitive, and motivational pathways. A summary of results from these analyses is provided in Table 4.

Supplementary Analyses: Trait Controls

To further rule out the possibility that these effects may have been driven by differences in other theoretically relevant dimensions of personality, the full model was respecified with three individual differences added as covariates: (1) trait mindfulness, (2) narcissism, and (3) psychopathy. Results remained substantively unchanged. The interaction between mindfulness training and Machiavellianism remained significant (b = .24, SE = .089, t = 2.69, p = .007), whereas the interaction between the active control and Machiavellianism remained non-significant (b = .027, SE = .089, t = .31, p = .76). As with the main analysis, mindfulness training continued to show a positive conditional indirect effect on workplace incivility (*index* = .020, SE = .011, 95% CI [.002,.045]), but not on interpersonal deviance (*index* = .007, SE = .005, 95% CI [-.002,.019]). These findings bolster confidence that the observed effects are attributable to the unique interaction between mindfulness training and Machiavellianism, rather than overlapping variance with trait mindfulness, narcissism, or psychopathy.

Discussion

This organizational field experiment showed that mindfulness training uniquely enlivened affective condemnation in Machiavellians, which in turn was associated with workplace incivility but not interpersonal deviance. Taken together, these findings suggest that mindfulness training rendered affective condemnation more consciously accessible to Machiavellians, whose pre-existing interpersonal orientation is negative, condescending, and contemptuous. They further show that, despite this enlivening effect, mindfulness training did not alter more downstream processes in Machiavellians that are also known to contribute to their mistreatment of others (emotion suppression, angry rumination, and dehumanization). Findings remained robust when accounting for these alternative pathways, and they were not attributable to generalized negative affect or other dark personality traits. Importantly, they did not replicate in an active control condition designed to mirror the mindfulness intervention in form, structure, and delivery, while excluding its core feature: mindfulness instruction and practice.[4]

At the same time, it is important to contextualize the magnitude of these effects—which, as noted, are moderate on a five-point scale. These effects emerged from a reasonably "low dose" mindfulness intervention. Even moderate effects may be meaningful insofar as they reflect changes in condemnatory affect and interpersonal mistreatment in a

Footnote 3 (Continued)

mechanisms were assessed more generally, even when anchored to participants' experiences at work. Accordingly, differences between these pathways may partly reflect differences in target specificity, further reinforcing the role of these analyses as robustness checks rather than comparative tests of competing mediators.

[4] Analyses were conducted using reproducible scripts. Due to confidentiality restrictions, the full dataset cannot be made publicly available; however, the data used in this study, along with analysis code for hypothesis tests, are freely available on the Open Science Framework at https://osf.io/a59kg/overview?view_only=bca77facc2d4467db5949a69b5c90f8c.

workplace that emphasizes professionalism and psychological safety in the service of patient wellbeing. Taken together, these findings suggest that even modest doses of mindfulness training can produce meaningful shifts in how dispositionally susceptible employees such as Machiavellians experience and express affective condemnation for others in the workplace.

General Discussion

This research has identified a "dark side" of organizational mindfulness interventions. Specifically, these findings suggest that mindfulness training can inadvertently enliven affective condemnation in Machiavellians, which is expressed through workplace incivility. More broadly, these findings suggest that mindfulness training may shape interpersonal misbehavior in the workplace by rendering dispositionally grounded condemnatory affect more consciously accessible to Machiavellians, rather than by uniformly promoting prosocial work behaviors. Collectively, these findings highlight a new pathway through which mindfulness training may shape interpersonal dynamics as a function of employee personality. Notably, the absence of corresponding effects on interpersonal deviance is consistent with theorizing that Machiavellians favor plausibly deniable forms of interpersonal mistreatment such as incivility over the more overt and higher-risk behaviors reflected by interpersonal deviance.

Contributions to Theory

At a broad level, this research contributes to the business ethics literature by showing that mindfulness interventions can generate ethically problematic outcomes. By demonstrating that mindfulness training can enliven affective condemnation and thereby foster workplace incivility, this research casts doubt on the common assumption that mindfulness interventions are ethically benign or uniformly prosocial. In so doing, it reconceptualizes mindfulness interventions as part of the ethical infrastructure of contemporary organizations, shaping how employees experience and respond to each other—*for better or worse*. This framing foregrounds an underexamined issue in business ethics: when workplace programs shape employees in such ways, organizations may bear responsibility not only for their benefits but also for their costs (Donaldson & Dunfee, 1994; Treviño et al., 1999; Weaver et al., 1999; Werhane, 2002).

Beyond this contribution to business ethics, this research also contributes to several streams of scholarship in organizational behavior. First, it advances an emerging literature on the costs of mindfulness at work by documenting that mindfulness training can foster explicitly *antisocial outcomes*. As organizational mindfulness scholars have noted, research to date has largely highlighted the benefits of mindfulness while downplaying its risks (e.g., Allen et al., 2015; Kay et al., 2019; Lyddy et al., 2021). Studies that have considered potential downsides show that mindfulness can dampen intentions to repair relationships (Schindler et al., 2019) and increase interpersonal sanctioning (Kay et al., 2023), among other potentially adverse outcomes (Aizik-Reebs et al., 2021; Anand et al., 2026; Britton, 2019; Britton et al., 2021; Good et al., 2025; Hafenbrack et al., 2022; Hu et al., 2025). Such findings illustrate how mindfulness training may disrupt prosocial functioning or channel antagonism toward norm enforcement, but they stop short of capturing the infliction of harm on others suggested by this research.

Second, this research extends and qualifies the S-ART framework (Vago & Silbersweig, 2012). Although the S-ART framework acknowledges dispositional differences among practitioners, it embeds the cultivation of self-awareness and self-regulation within an explicitly prosocial developmental trajectory culminating in self-transcendence. The present findings suggest that these developmental processes need not necessarily unfold in concert. Consistent with suggestions that mindfulness training may be counterproductive for some individuals (Brown et al., 2015; Van Dam et al., 2018), this research identifies Machiavellianism as a critical boundary condition for the downstream effects of mindfulness training. This pattern is consistent with the idea that mindfulness-related increases in self-awareness do not inherently privilege prosocial content, but instead can render dispositionally grounded affect—whether prosocial or otherwise—more accessible to conscious awareness. In documenting what may be understood as a "dark inversion" of the prosocial outcomes typically associated with the S-ART framework, this research extends mindfulness theory with findings suggesting that its benefits may be conditional and even invertible.

Third, this research identifies workplace incivility as an important behavioral manifestation of mindfulness-enlivened affective condemnation among Machiavellian employees. Responding to calls to move beyond static links between dark traits and workplace misconduct (O'Boyle et al., 2012), these findings indicate that mindfulness-enlivened affective condemnation in Machiavellians was associated with workplace incivility, whereas the corresponding indirect effect on interpersonal deviance was not significant. This pattern is consistent with underlying theorizing that Machiavellians are predisposed to express antagonism through incivility. Compared with overt interpersonal deviance, incivility is more ambiguous, harder to sanction, and less reputationally damaging. Highlighting this channel advances theories of workplace misconduct by clarifying how dispositionally grounded affect can manifest in distinct forms of misconduct

(e.g., Bennett & Robinson, 2000; Marcus & Schuler, 2004; Spector & Fox, 2005). It also helps distinguish incivility from other deviant workplace behaviors (Hershcovis, 2011).

Practical Implications

Because these findings suggest that organizational mindfulness interventions are consequential for interpersonal mistreatment in the workplace, it is important to note that their design and implementation have both practical and ethical implications. Although the observed effects are moderate in absolute magnitude, they are meaningful in that they are highly conditional—emerging specifically among Machiavellian employees who underwent mindfulness training. Even small increases in incivility can accumulate over time. This possibility is especially consequential for organizations that prioritize professional conduct and psychological safety to achieve critical outcomes such as healthcare delivery. Further, since Machiavellianism is a normally distributed personality trait, the dynamics identified in this research have the potential to arise among everyday working populations, rather than being confined to a small subset of extreme individuals.

This raises a central challenge: how can organizations preserve the well-documented benefits of mindfulness training for most employees while remaining attentive to their problematic implications for others? To help organizations address this challenge, I highlight three practical considerations.

First, organizations should pay more heed to warnings that mindfulness interventions are not universally beneficial (Castille et al., 2015; Roche et al., 2020) and may even backfire for some employees (Eby et al., 2019). Although mindfulness is often praised for enhancing focus, reducing stress, and fostering prosocial behavior, the present findings suggest that it can also yield explicitly antisocial outcomes—enlivening affective condemnation among Machiavellians in ways that contribute to workplace incivility. Such outcomes can be costly in terms of employee wellbeing, interpersonal dynamics, job performance, and organizational health (Lim et al., 2008; Porath & Erez, 2007; Porath & Pearson, 2013). Accordingly, organizations should recognize that mindfulness interventions may not benefit all employees and should remain attentive to their potential adverse consequences.

Second, attending to this possibility may require organizations to more carefully consider how mindfulness interventions are designed and implemented. Rather than adopting generic or insufficiently studied programs, organizations may benefit from well-documented interventions that emphasize empathy and compassion (Purser & Loy, 2013) or that more deliberately integrate ethical framing (Monteiro et al., 2015). Such adjustments may help ground contemporary mindfulness interventions in their historical roots and reorient them toward more traditional outcomes (Kabat-Zinn, 1990), while simultaneously mitigating risks for employees with antisocial proclivities.

That said, strengthening the ethical content of organizational mindfulness interventions may also introduce a different kind of trade-off. Emphasizing compassion, moral reflection, or prosocial intent may be aversive or constraining to employees with more antagonistic or self-interested dispositions, potentially reducing their willingness to enroll in—or fully engage with—such programs. As such, efforts to mitigate the interpersonal risks of mindfulness interventions with more ethical framing may inadvertently limit participation or dampen engagement among the very employees for whom such safeguards may be most needed. Responsible implementation therefore requires organizations to consider not only how mindfulness interventions are designed, but also how they are received across different segments of the workforce.

Third, leaders and HR professionals may wish to monitor more than stress reduction and productivity following mindfulness interventions. Specifically, they should also watch for incivility that could undermine the workplace climates these programs may be intended to cultivate. Although not all organizations prioritize such climates equally (Greenbaum et al., 2020b), it is preferable to know whether and to what extent mindfulness interventions may be provoking—rather than tempering—incivility, and by whom. Accordingly, organizations could benefit from evaluating mindfulness interventions not only in terms of average benefits, but also in terms of their unintended interpersonal effects across employees. In so doing, they may be better positioned to recognize and respond to an important implication of these findings: increased workplace incivility may represent a reasonably foreseeable risk of organizational mindfulness interventions among dispositionally susceptible employees.

Importantly, these findings should not be taken to suggest that organizations ought to identify or screen employees for Machiavellianism prior to implementing mindfulness interventions. Aside from practical challenges associated with assessing personality in organizational settings, such practices raise important ethical concerns regarding employee privacy, fairness, and stigmatization. Instead, these findings point toward a more appropriate organizational response: evaluating mindfulness interventions in terms of their observable interpersonal consequences and refining their design when unintended adverse effects emerge. In this way, organizations can remain attentive to potential risks by evaluating the consequences of mindfulness interventions rather than attempting to manage employee access to them on the basis of personality.

Strengths, Limitations, and Future Research

This research also has methodological strengths and limitations that warrant discussion. A key strength is its experimental field design with both passive and active control conditions. This design addresses alternative explanations tied to demand characteristics, expectancy, and placebo effects (Allen et al., 2015). Such concerns are endemic to mindfulness intervention research (Castille et al., 2015) and not adequately addressed by the two-condition waitlist designs that dominate the field (Davidson & Kaszniak, 2015). The active control condition was intentionally included in order to match the mindfulness condition rather than serve as an inert placebo, strengthening internal validity while setting a high bar for detecting between-condition differences (Eby et al., 2019).

Despite these advantages, such a closely matched control condition also yielded some complications. For example, participants in both intervention conditions reported higher levels of post-training mindfulness. Though not intended, this result is not altogether surprising given evidence that structured breathing practices can influence psychological outcomes often targeted by mindfulness programs (e.g., mood and anxiety; Balban et al., 2023). Moreover, research using closely matched breathing conditions suggests that structured breathing controls may themselves engage psychologically meaningful processes, making differences between active conditions difficult to detect on broad self-report measures (Fincham et al., 2023). In the context of such closely matched conditions, self-reported mindfulness may not have fully discriminated the most psychologically meaningful distinction between mindfulness training and structured breathing practice. Although the manipulation check captured broad attentional awareness, it may not have been sufficiently sensitive to distinguish the more specific psychological process theorized here—namely, increased experiential accessibility of dispositionally grounded condemnatory affect. This may explain why only mindfulness training interacted with Machiavellianism to enliven affective condemnation and downstream workplace incivility. In other words, the observed effects are difficult to explain in terms of features shared by the training conditions and may instead reflect psychological processes more specific to mindfulness training.

Beyond methods, this study has other strengths and limitations that provide opportunities for future research. For example, this study involved employees from a single organization—albeit one spanning 12 hospitals, 90 community health sites, and 33 additional work locations—and tested one mindfulness program. Although the intervention incorporated core mindfulness practices and increased self-reported mindfulness, it is not an established, independently validated program in the academic literature. Accordingly, these findings should be interpreted in the context of the particular form of organizational mindfulness training examined here.

Relatedly, the strength and behavioral expression of the observed effects could vary across industries, cultural contexts, or programs. In this respect, it may also be informative to consider the healthcare context in which this study was conducted. Healthcare organizations are typically characterized by professional norms emphasizing care, responsibility, and ethical conduct, which may shape how affective condemnation is experienced and expressed. For example, such norms may heighten sensitivity to perceived violations—potentially enlivening affective condemnation among dispositionally predisposed employees—while simultaneously constraining its overt expression by increasing reputational and professional costs. Although the findings documented here are theoretically consistent with a general mechanism linking mindfulness training, affective condemnation, and interpersonal mistreatment, future research could examine whether these effects generalize across other mindfulness interventions that differ in their theoretical foundations, practices, intensity, duration, and design, as well as how contextual norms influence both the intensity and behavioral expression of these effects.

In addition, although self-report measures are appropriate given the intrapsychic nature of affective condemnation and the ambiguous, deniable nature of workplace incivility, it must be recognized that they carry a risk of measurement bias (Podsakoff et al., 2012). To address this concern, deliberate steps were taken to mitigate measurement bias through a blinded design, repeated assurances of anonymity, and three waves of data collection over a one-month training period. Despite these precautions, the possibility that mindfulness training may have increased participants' willingness to report socially undesirable affect and work behaviors cannot be completely ruled out.

Nevertheless, several features of this research make a generalized reporting artifact less likely. Specifically, the effects were unique to the mindfulness training condition, emerged only among Machiavellians, and appeared for workplace incivility but not interpersonal deviance. If mindfulness-induced self-awareness merely increased participant openness in reporting, a broader pattern of socially undesirable responses would be expected. Instead, the observed pattern was selective and consistent with the underlying theoretical account linking mindfulness training, affective condemnation, and interpersonal mistreatment. The active control condition further helps address explanations based on generic intervention effects such as attentional engagement or expectancy. Nevertheless, future research could build on these findings using biometric indicators, third-party perspectives, behavioral measures, and more comprehensive assessments of affective processes. These

approaches could better capture the social visibility of affective condemnation and workplace incivility while providing a more rigorous test of the proposed mechanism.

In a similar vein, this research design did not directly assess behavioral choice or strategic decision-making, nor did it directly measure other S-ART processes theorized as underlying these effects. Accordingly, these findings do not demonstrate that Machiavellian employees *deliberately* favor one form of interpersonal mistreatment (incivility) over another (interpersonal deviance). Rather, they document a divergence in behavioral patterns that is consistent with the theorized tendency for Machiavellians to express affective condemnation through subtle, deniable forms of interpersonal mistreatment. Thus, although these findings are consistent with strategic channeling, they do not capture the relevant decision processes or the underlying S-ART dynamics. Future research could build on this work with designs that more directly assess underlying mechanisms and behavioral choice, such as experimental designs that require individuals to select from alternative courses of action varying in visibility, sanctionability, or reputational risk.

Future research could also build on this work by examining complementary emotional processes within the broader architecture articulated by Ashkanasy and Kay's (2023) five-level framework of mindfulness and emotion. Although the underlying theorizing here intentionally focused on within-person emotional processes, mindfulness training may also influence interpersonal functioning through other processes beyond the scope of the present research, including moral appraisal, interpersonal signaling, and longer-term identity development. Examining how such complementary processes interact with affective condemnation may provide a more comprehensive understanding of the emotional pathways through which mindfulness training shapes interpersonal workplace behavior.

Finally, this research examined Machiavellianism as the focal boundary condition to the S-ART framework for theoretical precision—yet post hoc analyses suggest that other dark personality traits, such as psychopathy, may also interact with mindfulness training in ways that stimulate interpersonal mistreatment in the workplace. Such findings highlight an important direction for future research: to examine whether mindfulness training inadvertently enlivens antisocial tendencies across individuals with other dark personality traits, and to clarify the mechanisms through which it may do so. More broadly, future research might also extend this logic beyond mindfulness training to examine whether other organizational interventions that cultivate awareness or self-regulation similarly produce dispositionally contingent effects on affective condemnation and interpersonal workplace behavior.

Despite these limitations, this research contributes to the literature on mindfulness at work and core debates in business ethics concerning organizational responsibility and the ethical consequences of ostensibly prosocial interventions. These findings suggest that mindfulness training can enliven affective condemnation among Machiavellians in ways that contribute to workplace incivility, challenging the assumption that interventions designed to cultivate self-awareness and self-regulation are ethically benign or uniformly prosocial. In so doing, these findings underscore the importance of evaluating mindfulness interventions not only in terms of their intended benefits, but also their unintended consequences. More broadly, these findings suggest that the ethical implications of mindfulness practice depend not only on the interventions themselves, but also on the dispositions of those who participate in them. In this sense, this research situates mindfulness interventions within the broader ethical infrastructure of organizations and calls for future research to more fully reckon with their potential to yield not only prosocial outcomes, but also antisocial outcomes.

Appendix 1

Intervention Instructions

Participants in each condition were initially provided standardized instructions (closely paraphrased below for transparency). Thereafter, participants received automated prompts five times per day over the course of the training period. When prompted, participants were encouraged to engage in each practice on their own. They were able to revisit the basic instructions at any time on their condition website.

Experimental Condition (Mindfulness)

Participants in the experimental condition were presented the following instructions to guide them through a brief mindfulness practice designed to cultivate present moment awareness and non-judgmental experience.

Welcome to this mindfulness practice, which can be done wherever you are. Begin by shifting your attention to notice something that you weren't paying attention to before. This can be the smallest detail, such as a color, texture, pressure, temperature, or sound. Spend a few moments noticing this new detail and observe any feelings that arise.

Next, bring your attention to your feet—notice their contact with the floor, your shoes, or another surface. Then, gently press your feet into the ground as you lengthen your spine, sensing the body as a whole.

Now, bring your attention to your breath. Begin with one complete breath, noticing it move into and out of the body. Gradually deepen and lengthen the breath so that both the

inhalation and exhalation last approximately five seconds. Take five breaths in this way, counting each inhale–exhale cycle as one breath.

If your mind wanders, gently guide your attention back to the sensation of the breath and begin again. Notice where in the body the breath is most clearly felt.

After completing five breaths, observe what is present in your body and mind without trying to change anything—simply allowing your experience to be as it is. Finally, return to the present moment with a sense of openness and non-judgment.

Active Control Condition (Breathwork)

Participants in the active control condition were presented the following instructions to guide them through a structured breathwork exercise designed to regulate breathing without explicit attentional or evaluative components.

Welcome to this 4–7-8 breathing practice, which can be done in any position—standing, sitting, or lying down. If seated, keep your back straight and your feet on the floor.

Begin by exhaling completely through your mouth. Then close your mouth and inhale quietly through your nose to a count of four. Hold your breath for a count of seven. Then exhale forcefully through your mouth to a count of eight.

Repeat this cycle for a total of four breaths. Inhale—2, 3, 4; hold—2, 3, 4, 5, 6, 7; exhale—2, 3, 4, 5, 6, 7, 8. Continue this pattern for four cycles.

After completing four cycles, return to normal breathing and notice how you feel.

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Declarations

Conflict of interest The author declares that there are no financial, personal, or other relationships that could be construed as a potential conflict of interest with respect to the research, authorship, or publication of this article.

Informed Consent Informed consent was obtained from all individual participants included in the study.

Research Involving Human Participants This research involved human participants and was conducted in accordance with ethical standards for research involving human subjects. The study protocol was reviewed and approved by the appropriate institutional ethics review boards at both the host organization and the academic institution of the author prior to data collection.

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