MIND OVER [TRAIT] MATTER: INVESTIGATING MINDFULNESS AS A DRIVER OF DYNAMIC PERSONALITY AND EMPLOYEE WELLBEING

by

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(Under the Direction of Nathan T. Carter)

ABSTRACT

Expanding literature links mindfulness – present-moment, non-judgmental awareness and attention – to employee wellbeing. Particularly, mindfulness is positively associated with emotion regulation, job satisfaction and reduced symptoms of stress and burnout. Mindfulness scholars suggest these benefits are attributed to downstream effects of mindfulness across cognitive, affective, and behavioral processes. Yet, empirical evidence for mechanisms that explain the influence of mindfulness on wellbeing remain underdeveloped. Leveraging insights from whole trait theory, I propose greater awareness and conscious reactivity inherent to mindfulness enhance wellbeing through change in the characteristic cognitive, emotional, and behavioral default patterns that constitute personality. I test this idea in the current study by assessing the mediating role of state personality in the relationship between state mindfulness and employee wellbeing. Using a 2-week experience sampling design, I examined these relationships between naturally occurring fluctuations in morning mindfulness and afternoon personality and wellbeing states. During the second week, I introduced a brief mindfulness-based intervention to better establish that mindfulness is indeed driving the personality state that influences wellbeing. Results support predictions indicating that dynamic personality states

across all five Big Five traits mediate the relationship between mindfulness and at least one measure of employee wellbeing. However, there is minimal evidence suggesting the mindfulness intervention induced mindfulness nor personality states that were associated with daily wellbeing. Implications for further research and workplace wellbeing interventions are discussed.

INDEX WORDS: Mindfulness, Dynamic personality, Employee wellbeing, Experience sampling methodology

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A Dissertation Submitted to the Graduate Faculty of The University of Georgia in Partial Fulfillment of the Requirements for the Degree

DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2022

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May 2022

DEDICATION

To my partner in life, B. You've supported my dreams and ambitions since day one, literally traveling across the world and back with me to live this one life to the fullest. Thank you.

ACKNOWLEDGEMENTS

Completing this degree would not have been possible without the brilliant, caring and patient people I'm lucky to have in my life. I am indebted to each and every person who has checked in on my progress regularly over the years, nodded along to my unnecessarily lengthy updates, and continued to prop me up despite it all. Absolute legends!

To Nathan, Lillian, and Dorothy, you have always been so much more than an advisory committee. Thank you for the invaluable feedback that challenged my assumptions and made this research all that much stronger. More importantly, thank you for giving me the push I needed along the way to stretch my capability as a researcher. I will always look back in awe knowing that I had such badass scholars in our field supporting my development. Nathan, your unrelenting faith in me means more than you know. Thank you for all of the grad school memories with the gang. I look forward to only nudging you from now on about catching up – although preferably not in Michigan during the winter.

To my family, I am beyond privileged and grateful for your support. Not everyone is afforded the secure attachment we have in our relationships that has allowed me to strive independently yet fall back into fierce loyalty when needed. Thank you, Mom, for being the ultimate role model of strength and perseverance to take on the truly difficult cards life deals us. You've taught me not to take a single day for granted and to always make time for fun. Dad, thank you for showing me the value of kindness and empathy – no matter how many hands I lose as your sheepshead partner. Finally, I must acknowledge the constant companionship of a most

beloved cat, Willow. You can't read, but you spent an oddly long amount of time looking over my shoulder at journal articles so I probably shouldn't take the chance.

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CHAPTER 1

INTRODUCTION

"Between stimulus and response there is a space. In that space is our power to choose our response. In our response lies our growth and our freedom" – Victor Frankl

The proliferation of mindfulness research across scientific disciplines has emphasized the benefits of mindfulness on mental (Keng, Smoski, & Robins, 2011) and physical health (Toivonen, Zernicke, & Carlson, 2017). As a growing topic in organizational research, the wellness benefits of mindfulness – present-moment, non-judgmental awareness and attention – have translated to employee populations (Bartlett et al., 2019; Lomas et al., 2018; Reb, Allen, & Vogus, 2020). In fact, mindfulness is linked to numerous critical indicators of wellbeing in the workplace including reduced burnout (Flook, Goldberg, Pinger, Bonus & Davidson, 2013), perceived stress (Roeser et al., 2013) and work-family conflict (Allen & Kiburz, 2012; Slutsky et al., 2019). Not only is mindfulness associated with relieving work-related stress and burnout, it is also associated with promoting preventative wellbeing factors such as engagement (Dane & Brummel, 2014; Leroy, Anseel, Dimitrova, & Sels, 2013), job satisfaction (Hülsheger, Alberts, Feinholdt & Lang, 2013; Slutsky et al., 2019), satisfaction with work-family balance (Michel, Bosch & Rexroth, 2014; Althammer et al., 2021), and resilience (Roche, Harr & Luthans, 2014).

Albeit encouraging to see substantial impact of mindfulness on various employee wellbeing outcomes, the workplace mindfulness literature is still in its infancy and empirical support for the mechanisms explaining these relationships remains underdeveloped (Good et al., 2016; Young, 2016). Broadly, mindfulness is thought to affect wellbeing through the three

axioms of attention, intention and attitude (Shapiro et al., 2006). Organizational researchers posit these interwoven qualities of mindfulness produce downstream effects on human *cognition, emotion, behavior and physiology* in the manifestation of positive work-related outcomes (Good et al., 2016). This is a broad, multifaceted claim. Empirically, only a handful of hypothesized mediating variables have been tested to support these relationships with a narrow focus on affective variables (e.g., emotion regulation, Hülsheger et al., 2013; positive affect and hope, Malinowski & Lim, 2015; emotional intelligence, Schutte & Malouff, 2011). In turn, results reveal partial mediation between mindfulness and wellbeing leaving unaccounted for residual variance. To better understand how mindfulness improves wellbeing, I propose we assess the interdependent processes of cognition, emotion, and behavior concurrently through the root construct: *personality*.

Personality encompasses individual characteristic patterns in thoughts, feelings, and behaviors (Funder, 2001). If mindfulness produces downstream effects on these fundamental psychosocial processes constituting personality, a relationship between mindfulness and personality is expected. Indeed, a small body of findings support this proposition at the trait level (Crescentini & Capurso, 2015; Giluk, 2009; Hanley, 2016), yet research on *how* mindfulness and personality relate at the within-individual, or state-, level is nascent (e.g., Nübold & Hülscheger, 2021). Moreover, personality has an established role in the study of subjective wellbeing (Anglim, Horwood, Smillie, Marrero, & Wood, 2020; Howell et al., 2017; Steel, Schmidt & Schultz, 2008). With consideration to the connection between dynamic personality and wellbeing (e.g., Blackie et al., 2014; Fleeson, Malanos, & Achille, 2002), I expect state personality to account for the relationship between mindfulness and employee wellbeing. Specifically, I anticipate that mindfulness promotes state personality states that afford individuals the ability to

flexibly respond to stimuli rather than responding with conditioned – at times maladaptive – responses. As such, greater response flexibility in adaptive expressions of personality states will positively relate to subjective wellbeing, resilience, and work-family balance.

An additional limitation of existing mindfulness-employee wellbeing literature is the imbalanced attention placed on dispositional, or trait, mindfulness. With some exceptions (Hülsheger et al., 2013; Nübold & Hülsheger, 2021; Slutsky, Chin, Raye, Creswell, 2019), the majority of workplace mindfulness research examines cross-sectional relationships with dispositional mindfulness and less is known about the effects of state mindfulness, often emerging through practices or interventions, on personality and wellbeing outcomes (Good et al., 2016). This is a critical distinction as recent evidence suggests a weak association between state and dispositional mindfulness perhaps indicating that mindfulness manifests in distinct forms (Bravo, Pearson, Wilson & Witkiewitz, 2018).

Like mindfulness, personality is more variable within individuals than previously thought. According to whole trait theory (Fleeson, 2012), personality is measured as a whole of two parts: (1) descriptive traits used to discuss individual differences made up of (2) density distributions of variable states used to explain within individual variation in responses to stimuli (Fleeson, 2001; Fleeson, 2012; Fleeson & Jayawickreme, 2015). Whole trait theory advances research on personality by bridging the divide between the person-situation debate and highlighting a need for research examining the social-cognitive mechanisms that drive variability in personality states (Fleeson & Jayawickreme, 2015). In particular, researchers call for detection of "information-processing mechanisms that are connected to affect and motivation and that have to do with interpreting changing situations and events" (Fleeson & Jayawickreme, 2015, p. 84).

Accordingly, I heed their call by presenting mindfulness as a candidate that aptly fits this description.

The current research aims to address two outstanding questions by merging the simultaneously advancing mindfulness and personality literatures. First, I answer calls for furthering insights on the mediating mechanisms between mindfulness and employee wellbeing by assessing the degree to which personality explains these relationships. Second, I identify mindfulness as a potential social-cognitive mechanism promoting dynamic personality.

The Present Study

In the present study, I leverage whole trait theory of personality (Fleeson, 2012) and a person-centric approach to investigate the relationships between mindfulness, personality, and employee wellbeing. Using experience sampling methodology (ESM), I captured daily fluctuations in personality, mindfulness, and wellbeing over a two-week period to assess the degree to which dynamic personality accounts for variance in the mindfulness-wellbeing relationship at the within-individual level. As directed by assertions of whole trait theory (Fleeson & Jayawickreme, 2015), I expect naturally fluctuating mindfulness states to influence individual variability in personality expression of the five-factor model (FFM; Costa & McCrae, 1992) traits. In effect, flexible and adaptive personality is expected to have beneficial effects on daily levels of resilience, positive affectivity, job- and life-satisfaction, and work-life balance. In a quasi-experimental design during week two, I also investigate whether training-induced mindfulness states drive personality states and as a result, improved wellbeing among participants randomly assigned to a daily morning mindfulness meditation practice as compared to those who do not engage in the mindfulness practice.

The current study serves three primary objectives. The first is to apply a person-centric lens to understand the relationship between mindfulness and personality, addressing the call for examining social-cognitive mechanisms driving variability in personality states. The second objective is to examine the degree to which daily state personality predicts daily employee wellbeing. The third objective is to better establish that mindfulness is generating the personality state that is conducive to improved wellbeing through use of the brief mindfulness induction in week 2. In doing so, the current study will extend previous research by investigating the mediating role of personality in the employee mindfulness-wellbeing relationship. Finally, results specific to the brief mindfulness-based intervention will provide insight into the comparison of mindfulness training durations in efforts to shape best practices in employee training (Bartlett et al., 2019; Eby et al., 2019).

By gaining a clearer picture of the state-level relationship between momentary mindfulness and personality, the current study contributes to the growing literature on dynamic personality (Blackie et al., 2014) and the use of mindfulness-based interventions for short-term state personality change (Nübold & Hülsheger, 2021) and long-term trait personality change (Hudson & Fraley, 2015; Roberts et al., 2017). Whereas Nübold and Hülsheger's (2021) experiment showed change in state mindfulness, agreeableness, and neuroticism following a mindfulness intervention, the current study demonstrates the effects of naturally occurring state mindfulness on all five of the FFM personality traits. It also extends their findings of mindfulness-induced personality states effects on general employee outcomes (performance and job satisfaction) by demonstrating the mediating effects of state personality on the relationships between mindfulness and a wider range of employee wellbeing outcomes.

In organizational contexts, results from this study inform mindfulness-based training efforts that are receiving growing attention from large US multinational organizations (e.g., Aetna, Wolever et al., 2012; Google and SAP, Everson, 2015; Schaufenbuel, 2015). Effectiveness of the low-dose intervention may support design of mindfulness-based practices in executive coaching and other employee development programs to help leaders break the chains of hindering habitual behavior associated with rigid self-narratives of personality (e.g., "I'm introverted and therefore, I could never be a public facing executive").

Background and Theory

Manifestations and Mechanisms of Mindfulness. The term mindfulness describes a "quality of consciousness" that has been studied as: (a) an inherent human capacity that varies between individuals (i.e., dispositional mindfulness), (b) a state that varies across situations within-individuals (state mindfulness) and (c) a type of practice often through meditation and relaxation exercises (Brown, Ryan & Creswell, 2007, p. 212). In each form, mindfulness is, "the awareness that emerges through paying attention on purpose, in the present moment, and non-judgmentally to the unfolding of experience moment by moment" (Kabat-Zinn 2003, p. 145). Breaking down Kabat-Zinn's secular Westernized definition, mindfulness is comprised of three interconnected components. First, mindfulness embodies a conscious awareness of internal phenomena (thoughts, emotions, physical sensations) and external stimuli (interpersonal interactions, physical environment). The second component is the attention directed to those stimuli; noticing the sensations with objective rather than evaluative labeling. Without an intent to be focused mindfully, immediate attention to sensations is rapidly accompanied by conditioned cognitive or emotional reactions frequently in reference to the self. The final component of mindfulness refers to purposeful information processing of the stimuli objectively

without preconceived notions or future implications. This involves noticing the factual information of the current moment rather than biasing the experience with reflection of past events or anxiety toward the future. In sum, to be mindful is to approach internal and external experiences with purposeful *intention*, present-focused *attention* and a non-evaluative *attitude* (Shapiro et al., 2006).

Simultaneous interplay between the core elements of conscious intention, attention and attitude produces downstream effects on human *cognitive, emotional, behavioral and physiological* functioning (Good et al., 2016; Ivtzan & Lomas, 2016). These broad systems of functioning underpin numerous outcomes of interest to psychologists including personality and wellbeing. As such, it is not surprising that researchers have identified a gamut of mindfulness-induced cognitive, affective, behavioral and physiological mechanisms believed to explain variation in wellbeing outcomes. To illustrate, Young (2016) listed nine mechanisms previously found to link mindfulness to both eudemonic and hedonic wellbeing – including decentering, psychological flexibility, changes in self-perception, improved memory, emotion-regulation, positive reappraisal, self-regulation, neuroplasticity, and immune support – and went on to suggest seven additional mechanisms theorized to also contribute to wellbeing.

For the purpose of the current research, there are two explicit mechanisms binding the mindfulness-wellbeing relationship that point to personality as a shared underlying driver: *decentering* (decoupling of the self from experiences) and *response flexibility* (cognitive, emotional and behavioral autonomy). Although other mechanisms may be present, these schemas collectively bind mindfulness, personality, and wellbeing. Decentering is a primary mindfulness cognitive process and response flexibility as a secondary behavioral process of

mindfulness that comes as a result of the mental shifts at the primary level (Glomb, Duffy, Bono, & Yang, 2011).

As a cornerstone of mindfulness, *decentering* describes the non-evaluative noticing and labeling of internal experiences for the purpose of recognizing them as transient rather than permanent fixtures of the self (Kabat-Zinn, 1990). This is why it is commonly referred to as a 'decoupling of the self' from experiences (Shapiro et al., 2006; Young, 2016). As a result of mindful awareness, decentering engenders the ability to pause and take a mental step back to view the present moment experience from an external vantage point. Decentering involves witnessing events unfold objectively rather than perceiving the events as part of a self-narrative that is biased from evaluations of our personal life story (Shapiro et al., 2006). This 'narrative' conception of self is more static due to fixed ideas of how one fits in the story (Brown & Cordon, 2009). In turn, decentering leads to a shift in self-perception through which mindfulness allows for a less rigid view or perception of the self, known as the 'experiential' self (Brown & Cordon, 2009). The experiential self can evolve from moment to moment without having to align with previous self-conceptions. Participants who have experienced decentering describe a feeling of "spacious lightness and freedom" as well as a stronger orientation toward others (Hölzel et al., 2011). The decentering mechanism is supported by neurological findings demonstrating that mindfulness affects the brain structures and neural activation associated with self-referential processing (Hölzel et al., 2011). A mindful shift in perspective also promotes meta-awareness or meta-cognition. The thoughts and emotions that arise in response to the present moment are recognized as temporary occurrences and viewed objectively as biased by human nature and not necessarily a true reflection of reality.

To illustrate decentering, imagine a presentation setting. If you are walking to the front of the room to give a presentation, you may feel nervous and quickly begin to associate those feelings with your narrative sense of self: "I'm a poor presenter," "I always say the wrong thing," and "If I don't do well, I won't get that promotion." With a mindful orientation to the present, you can view the presentation for what it is – sharing information with those in the room – and know that the feelings of nervousness are normal and not permanent. You can see the reality of the current situation without worrying about previous presentation performances or what is going to happen next (e.g., attaining the promotion). Therefore, decentering creates temporal space between attending to stimuli (e.g., an external audience and internal feelings of nervousness) and the response to it (e.g., jumping to conclusions and internalizing it as a part of your identity; Glomb et al., 2011). Creating this space in everyday routines allows individuals to recognize their habitual thoughts and responses to familiar stimuli that have been conditioned by previous experience with the stimuli (Brown et al., 2007). By doing so, someone with public speaking anxiety could recognize their narrative view of themselves as a poor presenter and break through the anxiety by starting fresh with each presentation going forward.

As a meta-mechanism of mindfulness, decentering facilitates other processes linked to wellbeing including self-regulation and flexibility (Shapiro et al., 2006). Through the clarity produced by decentering, mindfulness affords greater *response flexibility* in which habitual, impulsive reactions (e.g., speaking quickly to finish the presentation due to the nerves) are minimized creating room for more thoughtful, adaptive responses (e.g., slowing down and engaging the audience with a question). That is, mindfulness enables a dual perception of the stimulus itself and introspection of one's own impulse to react in a certain way (Brown et al., 2007). Given this process, mindfulness has also been described as an 'internal compass'

(Shapiro, Wang & Peltason, 2015); by inhibiting automatic cognitive processes and habitual responses, mindfulness invites conscious reflection and reappraisal of individual values and goals, promoting action that is more aligned with those values and goals (e.g., ensuring the audience understands your passion for the presentation topic). In regard to emotions, the response flexibility mechanism of mindfulness also aids in the processing of intense, consuming emotions (e.g., fear, anger or despair) before they can dictate harmful behavioral responses like freezing up at the front of the room (Hede, 2010).

Personality Theory. Together, the shared mindfulness mechanisms of decentering and response flexibility explain shifts in thoughts, emotions, and behaviors to promote deviation from ineffective habitual or conditioned patterns of responses. Notably, these habitual patterns of responses are the cornerstone of what psychologists have termed 'personality' – i.e., "the collection of characteristic thoughts, attitudes, feelings and behaviors that impact how we view ourselves and what we believe about others and the world" (Tang, 2017, p. 29). If personality research is the study of individual differences in patterns of cognition, emotion, and behavior, and if mindfulness disrupts these patterns, then variability in mindfulness may beget variability in personality (Blackie et al., 2014). Nonetheless, there is skepticism around whether mindfulness can produce substantial deviations in personality due to decades of research that personality is a stable individual difference. This is because much of the understanding of personality has been heavily examined through a nomothetic lens with little attention to and measurement of within-person variability. In recent decades, modern idiographic approaches to personality have revealed substantial within-person variation in personality expression in response to situational cues (Fleeson, 2001, Fleeson 2004). The idea that habitual personality tendencies shift within individuals has received more support and attention over the last 20 years

and is now backed by rigorous theory, advanced measurement, and interdisciplinary research (Beckmann & Wood, 2017; Fleeson, 2017).

According to whole trait theory (WTT, Fleeson, 2001; Fleeson et al., 2012; Fleeson & Jayawickreme, 2015), personality traits can be used to not only describe meaningful differences between people but also explain meaningful variation in trait expression within individuals across situations. Under this paradigm, traits consist of two parts that contribute to a joint account of how stable individual traits can be broken down into variable states – a joining of personality structure and process (Jayawickreme et al., 2019). Specifically, a whole trait is the sum of a *descriptive* part ($Trait_{des}$) plus an *explanatory* part ($Trait_{exp}$). The descriptive part pertains to the composite trait score derived from momentary enactments (states) of a 'Big Five' trait within individuals (i.e., density distributions, see Figure 1.1). Fleeson (2001) introduced the concept of density distributions after results from three ESM studies (spanning 2-3 weeks) indicated that the typical person regularly presented "nearly all levels of all traits in his or her everyday behavior" (p. 1011). Accordingly, the Big Five traits (Costa & McCrae, 1992) can be conceptualized as an aggregation of expressed personality states. However, the composite trait score remains useful in comparing individuals on levels of that trait and describing differences in between-person behavior (Fleeson, 2001).

The state-level variability in within-individual traits is also informative for describing behavior; however, it is subject to the contextual features and other conditional traits that evoke this variation (Fleeson, 2001). The axioms of whole trait theory suggest the descriptive part of traits is caused by the explanatory part – the "cognitive–affective–motivational system that shape information processing in specific situations and, subsequently cause the patterns of emotion and behavior" (Jayawickreme, Zachry & Fleeson, 2019; p. 2). The variation captured in individual

density distributions is not entirely random and can be *explained* by influential factors. Furthermore, if we can detect these explanatory factors, we can affect trait-level change through recurrent state-level deviations. For example, given an individual with a moderate level of emotional stability, there must be explanation as to why the individual experiences a range of emotions one day and is relatively apathetic the next (e.g., work experiences the previous day; Judge, Simon, Hurst & Kelley, 2014). Fleeson and Jayawickreme (2015) claim the explanatory side of traits consists of social-cognitive mechanisms that have yet to be identified.

By distinguishing between the descriptive and explanatory parts of traits, the whole trait approach integrates the social-cognitive and trait approaches to personality calling for a truce in the person-situation debate (Fleeson, 2012; Jayawickreme et al., 2019). The WTT lens can be thought of as a microscope; looking at the big five personality traits that describe individual differences under the within-person level microscope reveals a molecular level of state-level density distributions (see Figure 1.2). Therefore, the debate that personality is *either* stable *or* susceptible to situational contexts is moot. The two are not mutually exclusive but rather, "personality traits are stable in the sense that there is reliable between-person variation in the aggregate over time, and flexible in the sense that there is also substantial within-person variation in an individual's behavior depending on situational cues" (Jayawickreme et al., 2019, p. 3). To summarize, WTT integrates the nomothetic and idiographic approaches to personality with evidence that personality states are more dynamic within persons than previously thought and calls for further research to determine the explanatory social-cognitive mechanisms behind the within-person variation.

Mindfulness is presented as a potential explanatory social-cognitive mechanism due to its association with social-cognitive processes (e.g., non-reactivity) and manifestations (e.g.,

empathy; Campos et al., 2019). Initial evidence that mindfulness may influence within-individual personality is supported by changes following short-term mindfulness interventions in self-reports of trait personality (Cresentini & Capurso, 2015), in neurological structures and connections of mindful individual (Yang, 2017) and over time, in the treatment of personality disorders (Sng & Janca, 2016). Mindfulness as an individual difference trait – like personality traits – also varies meaningfully within individuals as it does between people. Through the mechanisms discussed previously, mindfulness promotes a more flexible awareness and orientation toward the self and identity in that, "when mindful, such personal descriptions are not held as literal truths but rather are held flexibly as passing verbal constructs" (Atkins & Styles, 2015, p. 134). The notion that mindfulness can influence personality has been examined in preliminary research with regard to mindfulness-based therapies and interventions on trait-level personality change and more recently on daily state personality (Nübold & Hülsheger, 2021). The current study builds from this preliminary research to demonstrate how state mindfulness is associated with more desirable personality states conducive to greater wellbeing. To do so, I leverage both the theoretical mechanisms of mindfulness with the recent theoretical advancements of personality (WTT) to suggest mindfulness influences state-level personality throughout the day. In turn, the theoretical mechanisms of mindfulness and personality carry critical weight for wellbeing by laying the foundation of positive characteristic patterns that promote "a full and rewarding life" (Shapiro et al., 2015, p. 108).

Figure 1.1. Example density distributions of the big five traits.

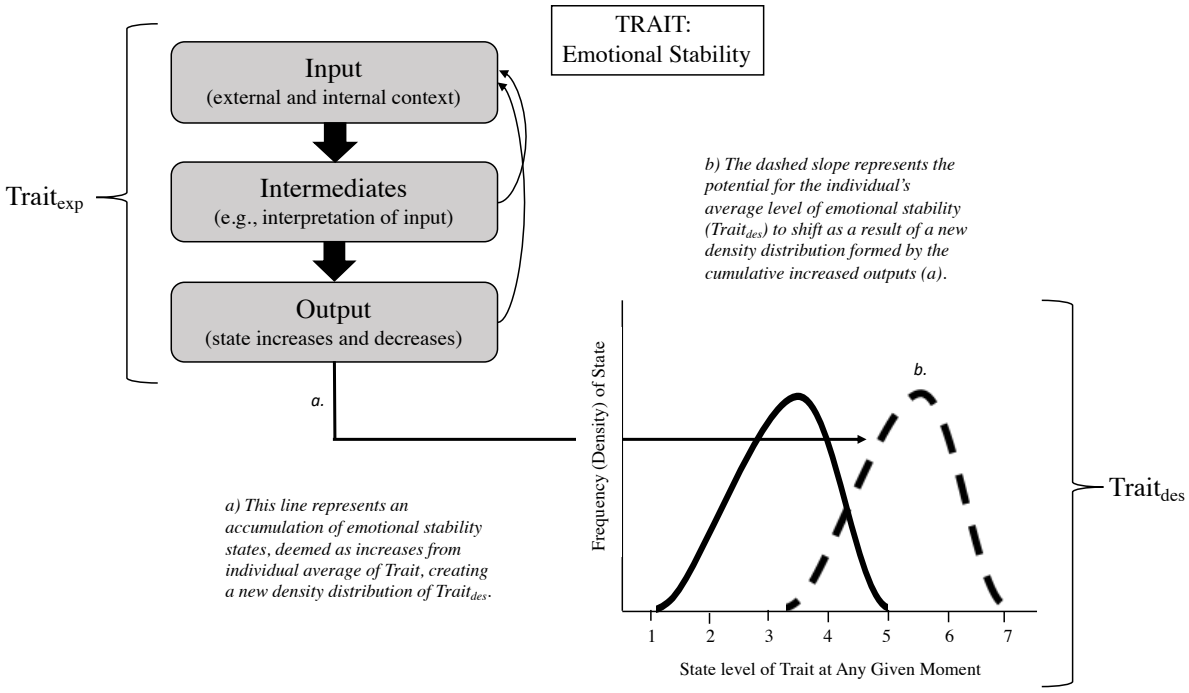

Figure 1.2. Whole Trait Theory. Depiction of the two parts of personality with the example trait of Emotional Stability. A whole trait is the sum of a *descriptive* part ($Trait_{des}$) plus an *explanatory* part ($Trait_{exp}$). $Trait_{des}$ describes between individual differences. $Trait_{exp}$ is the

explanation for within-individual variations in trait expression, or states. $Trait_{exp}$ is made up of interacting external and internal inputs, intermediates such as socio-cognitive abilities and outputs of personality state increases or decreases. Overtime, patterns of state personality expression (i.e., output) are reflected in aggregate levels of $Trait_{des.}$ Taken together, this figure illustrates the malleable potential of stable personality traits given manipulation of explanatory trait input. This figure is adapted from Fleeson and Jayawickreme (2015).

Hypotheses

Mindfulness as a Predictor of Daily Employee Wellbeing. The amassed research to date illustrates numerous beneficial effects of dispositional mindfulness and mindfulness-based interventions for employee wellbeing (Bartlett et al., 2019; Eby et al., 2019; Lomas et al., 2018; Shahbaz & Parker, 2021). At the trait level, individuals who are characteristically more mindful report higher levels of psychological wellbeing than their less mindful counterparts (Brown et al., 2007). Additionally, dispositional mindfulness is linked to numerous antecedents of wellbeing including compassion toward the self and others (Brown et al., 2007), positive affect (Malinowski & Lim, 2015), and emotion regulation (Hülsheger et al., 2013). Much of the dispositional mindfulness-wellbeing relationship is explained through mechanisms discussed previously in which mindful tendencies and abilities (e.g., acting with awareness and observing without judgement) result in more conscious, purposeful responses (Hyland et al., 2015).

Mindfulness-based interventions (e.g., MBSR or mindfulness-based stress reduction; Kabat-Zinn, 1990) have also shown to positively impact numerous wellbeing outcomes (Eby et al., 2019; Lomas et al., 2018). Recent meta-analytic findings summarizing the mindfulness-based intervention studies to date indicate the effect size of mindfulness training on employee wellbeing is strong ($g = 0.46$, $p = .002$; Bartlett et al., 2019). More specifically, employees who participated in mindfulness-based training demonstrated improvements in emotion regulation

(Hülsheger et al., 2013), burnout (Goodman & Schorling, 2012), and even physiological indicators of wellbeing such as neurological activation and immunity antibodies (Davidson et al., 2003). It is important to note that these relationships were seen at the trait level, yet there is research to suggest state level mindfulness has beneficial effects on wellbeing at the state level, within individuals day-by-day (Althammer et al., 2021). This research helps to make the case that the following hypothesized mindfulness-wellbeing relationships found previously at the trait-level can be expected to occur similarly at the within-person state level. Given these previous findings and the mindfulness mechanisms of decentering and response flexibility, I expect that within individual state mindfulness will positively affect state changes in the following employee wellbeing outcomes: subjective wellbeing, resilience, and work-life balance.

Mindfulness and Subjective Wellbeing. Mindfulness has long been associated with subjective wellbeing – Diener's (1984) conceptualization of overall happiness, life satisfaction and positive affect. In understanding employee subjective wellbeing, job satisfaction can also be considered. Mindfulness produces generally more positive perspective on life by shifting focus away from the negative in various ways including through emotion regulation processes and positive reappraisal. Decentering and response flexibility also play a role (Glomb et al., 2011). By decoupling the self from emotions and experiences, negative events are viewed as less threatening and more manageable (Glomb et al., 2011). Similarly, reduced automaticity in neural processing and behaviors allows for greater control over decision making and effective communication that leads to better life and work outcomes (Glomb et al., 2011). Meta-analytic work summarizing these findings indicate moderately strong relationships between trait mindfulness and life satisfaction ($\rho = .36$), mental health including positive affect ($\rho = .38$) and job satisfaction ($\rho = .29$) (Mesmer-Magnus, Manapragada, Viswesvaran, & Allen, 2017).

Mindfulness-based intervention studies have extended this correlational evidence and found causal evidence that meditation training produces increases in subjective wellbeing (Orzech, Shapiro, Brown & McKay, 2009) and job satisfaction (Hülsheger et al., 2013).

Despite being an established association, the story around mindfulness-subjective wellbeing and what mechanisms drive the relationship is incomplete. Previous investigations into the mediating link between mindfulness and subjective wellbeing produce partial mediation results and in turn, produce more questions than answers (Bajaj & Pande, 2016). As subjective wellbeing contains an affective component, there is need to examine the within-person variability in subjective wellbeing as emotions researchers find emotion states can vary widely within subjects across the course of the day (i.e., affect spin; Beal et al., 2013). Results from previous mindfulness experience sampling studies suggest the decentering mechanism of mindfulness works to regulate this affective variability (Hülsheger et al., 2013). Therefore, I anticipate that greater mindfulness will be positively associated with greater positive affect that manifests from less emotional fatigue and less reactivity to negative events. Regarding life and job satisfaction, the decentering mechanism also supports a more cognitive, objective view of one's current situation and has been shown to facilitate greater gratitude for what is good rather than rumination on what is not going as well (Swickert et al., 2019). As a more stable perspective, I expect that life and job satisfaction will vary less frequently within individuals than positive affect; however, an ESM approach will afford more precise detection of a shift in life and job satisfaction over the course of two weeks.

Hypothesis 1: (a) Naturally occurring state mindfulness and (b) training-induced state mindfulness will be positively related to daily subjective wellbeing indices of positive affect, life satisfaction and job satisfaction at the within-person level.

Mindfulness and Resilience. In early theorizing of work-related benefits of mindfulness, Glomb and colleagues (2011) remark on the shared processes between mindfulness and resiliency – the individual capacity to 'bounce back' following adverse experiences to pre-adversity or improved levels of functioning (Bonanno, 2004). Over the life course, individuals can face a number of significant traumatic events. Whether it be the loss of a loved one, damage from a natural disaster, or a difficult health diagnosis, the negative events that employees experience at home and at work impact their wellbeing and ability to perform in their roles. Resilience is the process of recovering from adversity which includes cumulative, ongoing adaptation to moderate adverse experiences that bolster the ability to confront and respond to challenges in the future (Kuntz, Näswall & Malinen, 2016). Evolutionarily, when confronted with such adversarial conditions, the natural human impulse is to retreat. In the modern day this 'flight response' might evoke short-term relief from hardship, but avoidance and withdrawal behaviors limit goal-directed achievement and learning that comes through challenges (Urry et al., 2004).

Mindfulness fosters resilience by encouraging approach behaviors such as remaining calm, positive, and perseverant through difficult life events (Glomb et al., 2011). In addition, mindfulness aids in emotional restoration and regulation (Heppner, Spears, Vidrine & Wetter, 2015). For example, research shows a reciprocal relationship between mindfulness and positive reappraisal to stress that produces an upward spiral of positive emotion as a support for long-term resilience (Garland, Gaylord, & Fredrickson, 2011); thus, promoting daily resilience to stressful events through acceptance of and flexible responding to difficult emotions that arise, a key process that aids in faster recovery (Keng et al., 2011). Notably, resilience is becoming increasingly more important for employee wellbeing due to the demands of a dynamic working

environment and extreme uncertainty (e.g., Covid-19, rapidly evolving technologies, etc.). With a decentered perspective, adverse events such as mass layoffs at work are perceived as less dire and possibly even as a positive challenge opportunity (Good et al., 2015).

Select empirical findings support a positive relationship between dispositional mindfulness and resiliency (Roche et al., 2014), but less is known about the relationship at the state-level. Mindful individuals tend to be optimistic about the future and their ability to recover which proves useful for enduring chronic and challenging life events (Shapiro et al., 2006). These findings prompted intervention research to determine whether practicing mindfulness can increase individual levels of resiliency (Aikens et al., 2014; Christopher et al., 2016; Pidgeon, Ford & Klaassen, 2014; Joyce et al., 2019). Initial findings from resilience-based mindfulness training programs indicate that psychological resiliency increases following mindfulness practice particularly in high-stress occupations including law enforcement (Christopher et al., 2016), first responders (Joyce et al., 2019), nurses (Lin, He, Yan, Gu, & Xie, 2019) and the military (Jha et al., 2015). For example, in a study of Dow Chemical employees, researchers found that employees who participated in a 7-week mindfulness training reported increased resiliency scores as compared to those in the control group (Aikens et al., 2014). These findings have yet to examined at the state level and following a reduced training period. However, given the positive reframing mechanisms facilitating the mindfulness-resiliency relationship and these previous findings, I hypothesize the following.

> *Hypothesis 2:* (a) Naturally occurring state mindfulness and (b) training-induced mindfulness will be positively related to daily employee resilience at the within-person level.

Mindfulness and Work-life Balance. Researchers have suggested that mindfulness may also play a role in another heavily researched topic within the employee wellbeing literature: work-family or work-life balance (Allen & Paddock, 2015; Greenhaus & Allen, 2011; Haun, Nübold & Rigotti, 2020). Mindfulness allows for effective management of roles and responsibilities across work and home domains by way of self-regulating attention to the present and mitigating distraction (e.g., technological access to and reminders of work while at home; Allen & Paddock, 2015). Sustained attention to work tasks while working and to personal or family activities while not working contributes to resource allocation (e.g., being emotionally and mentally available) and uninterrupted connection with others; two elements that drive perceptions of work-family balance (Allen & Paddock, 2015). In addition to focused present attention, non-judgmental acceptance of daily competing demands is associated with goal attainment and satisfaction across both domains (Huan et al., 2020).

Furthermore, mindfulness is linked to less rumination of negative emotions (Chiesa & Serretti, 2009) that can frequently occur across work and home domains (e.g., worrying about supervisor feedback at the dinner table). In particular, decentering and response flexibility mechanisms aid in the ability to catch oneself in the act of ruminative thoughts and habitual behaviors (e.g., checking work email on your cellphone) in order to maintain boundaries and personal resources (Shapiro et al., 2006). The decentering mechanism also facilitates regulation of negative emotions that result from conflict and role incompatibility. Through decentering, mindfulness promotes the flexible orientation to the self and identity that is necessary for balancing multiple identity roles (Atkins & Styles, 2015). For example, if an individual is unmoving in their self-concept as a high-achieving, dutiful employee, they may struggle when failing to meet a work obligation due to personal life or family demands. In place of this

narrative sense of self, the experiential self is more understanding of the choice as separate from its association with ego-driven labels (Brown & Cordon, 2009). Relatedly, employees with unhealthy levels of work engagement that manifests in obsession with work – workaholics – struggle with work-family balance and maintaining positive personal relationships (Clark, Michel, Zhdanova, Pui & Baltes, 2016). Preliminary research indicates that mindfulness-based interventions help to reduce workaholic symptoms, such as excessive time spent working, without inhibiting job performance (Van Gordon, Shonin, Dunn, Garcia-Campayo, Demarzo & Griffiths, 2017).

Previous research highlights mindfulness a personal and organizational resource for promoting work-life balance (Allen & Kiburz, 2012). At the trait level, working parents with more mindful dispositions report greater satisfaction with work-family balance, better sleep quality and more vitality (Allen & Kiburz, 2012). Dispositional mindfulness also negatively relates to turnover intentions as mediated by work-family balance (Raza et al., 2018). In response to a call for practical strategies and interventions for managing work-family balance (Eby, Casper, Lockwood, Bordeauz & Brinley, 2005), researchers have also begun to investigate whether mindfulness-based training can help in the management of work-family balance (Kiburz, Allen & French, 2017; Michel, Bosch & Rexroth, 2014; Montes-Maroto, Rodríguez-Muñoz, Antino & Gil, 2018; Morganson, Rotch & Christie, 2015). In intervention research, mindfulness has shown to be a 'cognitive-emotional segmentation strategy' to increase levels of psychological detachment and satisfaction in work-family balance (Michel, Bosch & Rexroth, 2014). In a daily diary study, mindfulness was shown to reduce strain in personal relationships at the state level as researchers found a cross-over effect of daily mindfulness states at work buffering spousal reports of end-of-day work-family conflict (Montes-Maroto et al., 2018).

Work-family scholars are calling for more event-based research like that of Montes-Maroto et al. (2018) to assess within-person variation in work-family episodes to better inform effective intervention design. This is because overall perceptions of work-family balance are shaped by a series of choices individuals make in how to spend the constrained time and energy allotted over the course of a workday or work week (Allen & Kiburz, 2012). In the current study, I expect that the decentering and flexible responding mechanisms of mindfulness will help individuals to perceive these decisions (e.g., opting into a client meeting requiring overnight travel) objectively and respond accordingly without self-judgement (e.g., I'm a bad parent). According to these mechanisms and previous findings, I anticipate state-level and training-induced mindfulness will be positively associated with satisfaction in balance between work and personal life domains.

Hypothesis 3: (a) Naturally occurring state mindfulness and (b) training-induced state mindfulness will be positively related to daily satisfaction with work-life balance at the within-person level.

The Mediating Role of Personality. Mindfulness scholars have begun to investigate potential mediators to explain the effects of mindfulness on workplace outcomes (Glomb et al., 2011; Shahbaz & Parker, 2021). Many of these studies have found evidence of mediators that are closely tied to the outcome of interest (e.g., prosocial behavior via empathy; Hafenbrack et al., 2020 and task performance via increased confidence in problem solving; Forjan, Tuckey & Li, 2020). In the current investigation of mindfulness and wellbeing, I focus on a mediator that appears across organizational literatures as a driver of myriad workplace wellbeing attitudes and behaviors: *personality.*

Researchers are beginning to recognize the connection between mindfulness and personality and explore their joint effects on employee outcomes such as performance, wellbeing, and relationships (Good et al., 2016). Preliminary findings thus far support the claims that the relationships between mindfulness, personality and employee outcomes also occur at the state level as state personality has recently been shown to mediate the relationship between mindfulness and employee outcomes of job satisfaction and performance (Nübold & Hülsheger, 2021). I anticipate this explanatory mechanism of personality extends beyond performance to also inform a gamut of known mindfulness-employee wellbeing relationships. As previously discussed, the downstream effects of mindfulness on employee wellbeing occur due to processes of decentered and flexible thoughts, emotions, and behaviors (Good et al., 2016). If personality is conceptualized by characteristic patterns in *cognitions, emotions, and behaviors*, I argue that personality can be influenced by mindfulness and explain its effects on broad domains of human flourishing at work and home (Blackie et al., 2014; Bono et al., 2012).

Mindfulness and Personality. Atkins & Styles (2015) stated that, "mindfulness extends beyond improving emotional self-regulation…over time it changes how we respond the questions 'who am I?' and 'Am I really separate from you?" (p. 133). Over the past decade, a handful of papers have emerged around the tie between trait mindfulness and personality (Giluk, 2009; Crescintini & Capurso, 2015; Hanley, 2016). Findings from cross-sectional surveys indicate that dispositional mindfulness is related to each of the FFM traits (Costa & McCrae, 1992) at varying degrees: conscientiousness ($r \sim .30$), openness ($r \sim .15$-$.20$), agreeableness ($r \sim .20$), extraversion ($r \sim .12$-$.20$) and neuroticism ($r \sim$-$.45$) (Giluk, 2009; Hanley, 2016). As these relationships indicate, dispositional mindfulness is most strongly related to neuroticism and conscientiousness. The strong negative relationship between neuroticism and mindfulness is

unsurprising given the downstream effects of mindfulness on emotion (Giluk, 2009; Good et al., 2016). The self-regulatory effects of mindfulness on emotional reactivity and reduced automatic behavioral tendencies mirror descriptions of emotional stable individuals whereas neurotic individuals are characterized by impulsivity and increased variability in emotional responses. The strong positive relationship between trait mindfulness and conscientiousness can also be attributed to self-regulation and attentional control – the ability to focus attention and awareness to the present moment even with distractions (Giluk, 2009; Good et al., 2016).

Moreover, researchers have conducted exploratory research to assess whether mindfulness-based training can influence change in personality (Krasner et al., 2009; Crescentini & Capurso, 2015) and identity (Atkins & Styles, 2015). The research between mindfulness-based training and change in personality is nascent; however, there is some emerging evidence from mindfulness-based interventions in employee populations. First, in a pretest-posttest study of physicians, Krasner and colleagues (2009) found that mindfulness-based communication training resulted in changes in physician trait conscientiousness and neuroticism. Furthermore, these personality changes were related to pre-post change in mindfulness scores giving support to the interpretation that the personality change was due to the mindfulness training. Secondly, Crescentini & Capurso (2015) found mindfulness-induced change in trait personality measured with both self-report and implicit measures (i.e., with IAT methods). They conclude there is evidence for change, but this need to be supported with more rigorous research that involves randomized, controlled trials. There is also evidence to make the case that the dispositional relationship between mindfulness and the Big Five at the trait level extends to the state-level. In fact, results of growth curve modeling have shown that over time, state mindfulness induced by meditation practices over time aggregate to more mindful and less distressed dispositions (i.e.,

states producing trait change; Kiken et al., 2015). Capturing daily state levels of mindfulness and personality over 4 weeks, Nübold and Hülsheger (2021) reported significant within-person correlations between mindfulness and each of the Big Five expressed as states: conscientiousness (r = .29), openness (r = .29), agreeableness (r = .35), extraversion (r = .30) and neuroticism (r = -.43). As you can see these are similar to and, in most cases, stronger relationships than those found at the dispositional level by previous researchers (Giluk, 2009; Hanley, 2016). In testing change in those states, they found effects of a low-dose mindfulness intervention on change in agreeableness and emotional stability which mediated the relationships between mindfulness and job satisfaction and performance all measured daily at the within-person level.

Mindfulness, Personality and Employee Wellbeing. According to whole trait theory, personality – measured as an aggregated collection of states – is more dynamic that previously thought (Fleeson, 2001) and variable expression of personality has implications for promoting wellbeing (Blackie et al., 2014). Given the correspondence between the mindfulness mechanisms discussed in the preceding section and this theoretical conceptualization of personality, I posit that decentering and flexible responding are social-cognitive mechanisms that enable this personality variability which opens up the possibility to think, feel and behave in ways that support, rather than derail, wellbeing.

With the mindfulness-personality and mindfulness-wellbeing links established, understanding the final link between personality and wellbeing is critical for supporting claims in the current research. Through exposure in industry and pop psychology, personality traits are prescribed to individuals (e.g., commercialized Big Five personality-based assessments like the Hogan Suite) and these trait labels feed into individual self-concept and identity (e.g., “I am extraverted, that’s just who I am”). Self-concept and personality are consistently strong

predictors of subjective wellbeing largely due to how we feel about ourselves, our reactions, and how we align or misalign to the external environment (Diener, Suh, Lucas & Smith, 1999).

Like mindfulness, personality has been integrated into the science and practice of improving wellbeing in employee populations (Evans, Brewis & Robertson, 2021; Bliese et al., 2017). While in much of this work researchers and practitioners have spotlighted external factors that affect worker wellbeing (e.g., demands, resources, control, and support), there is an interaction between these external factors and individual factors including personality (Evans et al., 2021). For example, personality differences help explain unique perceptions of identical demands associated with the same job (Bakker et al., 2010). In relationship to the wellbeing outcomes in the present research, personality traits are shown to explain individual differences in work-family experiences (Allen et al., 2012; Allen & Paddock, 2015), resiliency (Eschelman, Bowling & Alarcon, 2010), and indices of subjective wellbeing (e.g., life- and job-satisfaction; Steel et al., 2019). Neuroticism and extraversion, in particular, are regularly associated with employee wellbeing outcomes such as positive affect (Fleeson et al., 2002). Furthermore, emotional intelligence – a construct debated to be highly similar to facets of personality – has shown to mediate the trait-level relationships between mindfulness and subjective wellbeing indices of positive/negative affect and life satisfaction (Schutte & Malouff, 2011).

Although traits are effective in describing individual differences, they have been criticized for not fully explaining within-individual variation in behaviors and outcomes (Jayawickreme et al., 2019). In subsequent tests of whole trait theory, participants of a 10-day diary study displayed a level of within-individual variability in personality states, particularly in neuroticism and extraversion, were found to mediate the relationship between goals and subjective wellbeing (Heller, Komar & Lee, 2007). Other research at the state level reveals that

day-to-day variation in happiness is largely attributed to how open to experience, agreeable, extraverted, conscientious, and emotionally stable individuals are feeling and behaving that day more so than their trait levels of each of the big five (Howell et al., 2017). Findings from Howell and colleagues (2017) demonstrate how expressions of personality within individuals can explain daily subjective wellbeing even after controlling for trait level influence.

More recently, researchers have suggested that shifting personality states can cumulate to effectively change personality traits in order to produce long term improvements in wellbeing (Blackie et al., 2014). Despite growing interest in the relationship between mindfulness and personality, no one has yet to investigate the mediating effect of dynamic personality in the mindfulness-wellbeing relationship at the state level. Given the theoretical mechanisms of mindfulness and WTT, I argue that mindfulness will promote beneficial personality states which will in turn, have positive impacts on daily worker subjective wellbeing, resilience, and work-life balance. As such, I hypothesize that state personality is the explanatory link between mindfulness – as a naturally fluctuating state – and daily employee wellbeing.

Hypothesis 4: Personality states will mediate the positive relationship between (a) naturally occurring and (b) training-induced state mindfulness and daily employee wellbeing.

***Trait-specific Musings*.** Though I do not make specific hypotheses for each of the Big 5, I anticipate the mediating effect expected in Hypothesis 4 to be stronger for some of the FFM traits than for others. Previous investigations of dynamic personality states have revealed greater within-individual variance in conscientiousness, neuroticism, and extraversion than in agreeableness and openness (Judge et al., 2014; Fleeson, 2001). Greater within-individual variance affords greater opportunity for state mindfulness to drive that variance. Additionally,

the strength of relationships typically found between each FFM trait and mindfulness varies. As mentioned previously, mindfulness is most strongly related to neuroticism and conscientiousness; both of which are comprised of tendencies that benefit from the self-regulatory effects of mindfulness. Finally, there are also stronger relationships between some personality traits and their facets with wellbeing outcomes. Greater emotional stability, extraversion and agreeableness are linked with subjective wellbeing and positive relationships (Sun, Kaufman & Smillie, 2018).

State neuroticism – expressed in tendencies to act impulsively, worry about the past and future, and feel greater sensitivity to stress and intense emotions (DeYoung, Quilty, Peterson, 2007) – is the most likely of the personality states to mediate the mindfulness-wellbeing relationships. At the daily level, a greater awareness on the present moment will refocus cognition away from anxiety and rumination which degrade satisfaction with life and impede work-life balance and recovery from daily stress (Crain et al., 2017). Emotionally, the nonjudgmental attention inherent to mindfulness is likely to reduce the felt intensity of negative evaluations which turn into negative emotions (Brown & Ryan, 2003; Hölzel et al., 2011). This includes reducing negative *self*-evaluations associated with the self-conscious facet of neuroticism (DeYoung et al., 2007). The decentering mechanism may help sever that connection of intense negative evaluations as attributions of the self and allow them to belong to the experience instead. Behaviorally, the impulsivity and quick to anger facets of neuroticism are prime targets for the mindful mechanism of response flexibility that comes from creating space between stimulus and response (Brown et al., 2007). By making an intentional choice of how to react, individuals are less likely to engage in a downward spiral of intense fearful, sad, hopeless or self-shaming thoughts and act on those with “out of control” behavior.

Moreover, my confidence in neuroticism is bolstered by the plethora of research linking lower levels of neuroticism (i.e. greater emotional stability) to greater wellbeing in and outside of work domains. Emotional stability as a trait (DeNeve & Cooper, 1998) and as a state (Heller et al., 2007) has been shown repeatedly as a strong predictor of subjective wellbeing. At the facet level, lower levels of withdrawal (marked by expressions of self-consciousness, rumination, anxiety and depression) are associated with higher life satisfaction and positive relationships (Sun et al., 2018). If mindfulness reduces these subfacets of neuroticism, the experience of improved emotional stability throughout the day is likely to aid individuals in bouncing back from stressors, remaining positive, and managing to balance time and energy between work and personal demands of the day.

Notably, neuroticism is of greater interest in this investigation than the other FFM traits as trait neuroticism has been associated with greater variability in the other FFM states (Judge et al., 2014). Due to my interest in the relationships at the within level, I do not intend to control for individual differences in personality at the trait level. However, it is possible that individuals higher in neuroticism could provide a better chance to see the intraindividual effects of mindfulness on personality as they are more likely to show greater fluctuation in expression of personality states.

Second to neuroticism, I expect the self-regulatory benefits of mindfulness to also aid in promoting conscientious tendencies (i.e. showing self-discipline, working in an orderly and organized fashion, thinking and acting deliberately). This is largely due to the level of alert attention and intentional focus associated with mindfulness (Bishop et al., 2004). Focused attention also affords individuals greater immunity to distraction and control over productivity (Tang et al., 2007). Therefore, self-discipline and productivity may allow employees to better

segment their work and non-work tasks for the day contributing to work-life balance (Michel et al., 2014). It also provides autonomy of mind to pay attention to the positive, to focus on the present moving forward from stressors earlier in the day. Therefore, I suspect neuroticism and conscientiousness states will be more likely to mediate the relationship between mindfulness and wellbeing outcomes than agreeableness, openness or extraversion.

However, emerging research showcases relationships between mindfulness and other constructs that are more akin to agreeableness and openness. In the case of agreeableness, mindfulness has been shown to aid in managing interpersonal conflict (Kay & Skarlicki, 2020), drive prosocial behavior at work (Hafenbrack et al., 2020; Sawyer et al., 2022), and promote empathy which in turn supports work-family outcomes (Chen, Allen & Hou, 2020). In a recent ESM investigation, state mindfulness has shown to prompt other-oriented perspective taking, gratitude and expressions of prosociality (Sawyer et al., 2022) – all of which constitute cognitions, emotions or behaviors associated with facets of agreeableness (DeYoung et al., 2007). As such, I see potential for mindfulness-driven agreeableness to positively influence employee wellbeing day-to-day.

Support for the relationships between mindfulness and openness and mindfulness and extraversion is more mixed. Mindfulness and openness tendencies (i.e. daydreaming, valuing aesthetics and intellect, receptivity to experiences, exploring ideas and abstract thought) are connected in studies demonstrating the mindfulness-training induced states of creativity (Byrne & Thatchenkery, 2019). In another study, state mindfulness was positively associated with employee creativity measured by engaging in problem solving, divergent thinking and idea generation (Cheung, Huang, Chang, & Wei, 2020). Yet, mind wandering is a sub-facet of openness and is considered to some as counter to mindfulness (Reb, Narayanan & Ho, 2015).

Similarly, there is conflicting evidence surrounding the relationship between mindfulness and extraversion tendencies (i.e., showing enthusiasm, positivity and assertiveness, thinking and working at a high pace, acting warmly toward others, seeking excitement and stimulation) as it promotes some subfacets of extraversion and derails others (Giluk, 2009). For example, mindfulness is shown to increase positive affect (Baer, Smith & Allen, 2004) yet is operationally (as a trait and a practice) a lower energy state of awareness and activity. Of note, extraversion – particularly the enthusiasm facet – is a strong predictor of wellbeing (Sun et al., 2018). While likely to show strong relationships with the outcomes, it is unclear whether state extraversion will be driven by state or induced mindfulness. For both extraversion and openness, the decentering and response flexibility mechanisms of mindfulness may help individuals create the space to act more or less extraverted, curious and creative; yet, this desire to flex in this direction is largely context dependent. Therefore, I expect the mediating effects of openness or extraversion to be weaker than those of neuroticism, conscientiousness, and agreeableness.

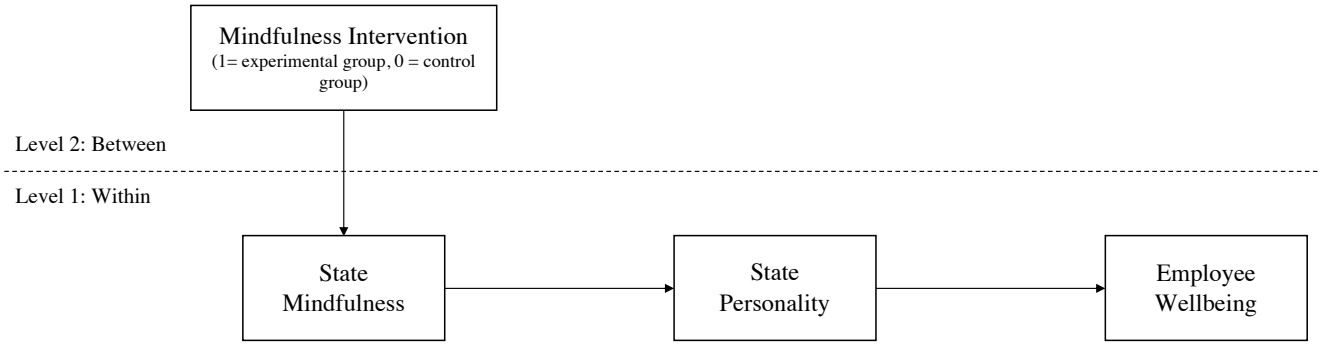

Figure 1.3. Hypothesized multi-level model.

CHAPTER 2

METHOD

Participants and Procedure

A sample of working adults in the U.S. and Australia was recruited through social media and online community advertisements (i.e., LinkedIn, Facebook, Instagram). To determine eligibility, participants were screened and those who were not (a) working full-time (at least 35 hours/week), (b) living in the United States or Australia, nor (c) at least 18 years of age or older were disqualified. Participants who were planning to be on leave from work at any point during the two-week study period were also excluded from the study. Participants were incentivized by payment of $20 with potential to earn an extra $1 per day of full completion up to $10 bonus ($30 potential total compensation).

For adequate power to assess variation at the within-person level as well as compare results between a control and intervention group, 140 individuals were invited to participate to allow for partial participation and dropout. Of the 140 invited, 132 people (94%) started and completed at least some part of the study. The majority of participants were women (73.5%), White (82.6%) and married or living with a partner (73.5%) with the average age of participants being 31.82 years. All participants had at minimum a high school degree or equivalent, with 43.9% having completed a 4-year college degree, 34.9% having completed a master's degree and 10.6% having completed a doctoral degree. Participants were working full-time an average of 41.03 hours per week and the majority (75%) were working from home due to the COVID-19

pandemic. Almost a third of participants (29.5%) were managers supervising an average of 12.49 people. One person oversees 500 volunteers and was removed in this average as an outlier.

Participants were also asked about their previous and current experience with mindfulness-based activities (e.g., meditation, yoga, use of mindfulness smartphone applications). A quarter of participants (25.0%) currently practice mindfulness in some form and 38.6% have practiced mindfulness in the past but do not currently practice or regularly practice. Of the 33 people who currently practice, most (72.7%) practice once or more times a week.

Using experience sampling methodology (ESM), participants completed twice daily surveys over two weeks (10 working days) along with a baseline and follow up survey. Meaningful use of ESM designs was justifiable with theoretical rationale for dynamic within-person variation and evidence of a substantial proportion of error due to within-person variation (PWV; Podsakoff, Spoelma, Chawla & Gabriel, 2019). According to their recent review of ESM research in applied psychology, an average 46% of variance in personality measures across person-centric personality research (e.g., Fleeson, 2001; Judge et al., 2014) was attributable to intraindividual sources (Podsakoff et al., 2019). Using Podsakoff and colleagues' (2019) described approach to calculating within-person variance (PWV) from intraclass correlation coefficients (PWV = 1.00 – ICC(1)), I estimated from previous mindfulness ESM studies (Hülsheger et al., 2013; Nübold & Hülsheger, 2021; Sawyer et al., 2022) that an average 48% of variance in mindfulness measures was attributed to within-person factors.

After qualifying, participants were randomly assigned to a passive control group or mindfulness group. Both groups proceeded through the study at the same time. During the 10-working day study period, an interval-contingent protocol was followed, and participants completed two daily surveys; the first survey assessed mindfulness and personality states

(completed between 11:00 a.m. to 1:00 p.m.) and the second survey assessed mindfulness, personality and wellbeing states (completed between 5:00 p.m. to 7:00 p.m.). In addition to the daily surveys, participants were asked to complete (a) a baseline survey on the Sunday before the study period began capturing baseline levels of trait mindfulness, personality, and employee wellbeing and (b) an end of week-two follow-up survey assessing change in all variables. Participant survey responses were linked with a unique five-digit code to protect confidentiality. Participants (N = 132) completed on average 17.21 of the daily surveys (out of 20) with the total number of daily surveys completed was 2,255 out of a potential 2,640 surveys (85.4%).

Mindfulness Intervention

Half of the participants were randomly selected and assigned to the mindfulness intervention condition. During the second week of the study period, this experimental group engaged in an abbreviated self-administered mindfulness training program similar to that of Hülsheger and colleagues' program (2013, 2015). Participants in the mindfulness intervention group received an email on the Sunday prior to the second week of the study with information on mindfulness meditation and the importance of daily practice. The information included a guide for incorporating the other informal practices into their daily work and life routine along with recommended YouTube video resources.

Each day during the second week, experimental group participants completed a short 5-minute mindfulness meditation practice prior to answering the first daily survey questions. The mindfulness practice was embedded as an audio file in the introduction of the morning survey. Similar to practices used by Hülsheger and colleagues (2013; 2015), daily practices varied to incorporate different guided meditations and techniques derived from MBCT (Segal, Williams, & Teasdale, 2002) and MBSR (Kabat-Zinn, 1991). These included a breathing meditation, body

scan meditation, and loving kindness meditation. A variety of practices serves three purposes; (1) it adheres to the foundations of MBSR and MBCT, (2) mitigates participant fatigue that may arise if engaging in the same video every day, and (3) accommodates for differences in meditative preferences. For example, some participants could become actively disengaged if they disliked a feature of a repeating practice such as the speaker's voice. The core elements of mindfulness were embedded across practices including a focus on the present, attention to internal and external sensations and nonjudgmental awareness. After the audio file plays each day, participants were asked to honestly declare if they (a) listened and followed along with the entire practice, (b) listened to some of the practice or was engaged in another activity at the same time, or (c) did not listen to the audio file (without impact to their study payment) to account for active and disengaged participation levels.

Measures: Baseline and Follow-up Survey

Scales can be found in Appendix A.

Mindfulness. Dispositional mindfulness was assessed with the 15-item Mindfulness Attention and Awareness Scale (MAAS; Brown & Ryan, 2003). The 6-point Likert scale (1 = Almost Always to 6 = Almost Never) is unidimensional and demonstrated adequate internal consistency (α = .89). An example item states, "I find it difficult to stay focused on what's happening in the present."

Personality. Five factor model personality traits will be assessed using the 44-item Big Five Inventory (BFI; John & Srivastava, 1999) and the 65-adjective checklist (Goldberg, 1992). Participants will be instructed to rate the items according to the extent that the item reflects them in general on a 1 (strongly disagree) to 7 (strongly agree) scale. Similar to personality measures used in research by Judge and colleagues (2014), each Big Five trait will be measured in a

composite factor with items from both personality inventories. Coefficient alphas for each trait were as follows: Agreeableness (α = .88), Extraversion (α = .93), Conscientiousness (α = .91), Openness (α = .88), and Neuroticism (α = .89).

Affect. Trait affectivity was assessed using the 20-item Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988). The PANAS asks participants to respond to a series of adjectives associated with positive and negative emotions in varying degree of intensity on a scale from (1=very slightly or not at all to 7=extremely). Example positive affect items include, "excited" and "afraid". Acceptable evidence of internal consistency was found for both positive affect (α = .88) and negative affect (α = .84).

Job Satisfaction. Job satisfaction was measured using the 3-item Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale (MOAQ-JSS; Cammann et al., 1983) on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). An example item states, "All in all I am satisfied with my job." The measure presented sufficient internal consistency (α = .79).

Life Satisfaction. Life satisfaction was measured with the 5-item Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen & Griffin, 1985) using a 7-point response scale (1 = very dissatisfied to 7 = very satisfied). An example item states, "In most ways my life was close to my ideal." Internal consistency of the measure was adequate (α = .87).

Subjective Wellbeing. Trait-level subjective wellbeing was computed as a composite of life satisfaction, job satisfaction and positive affectivity. Internal consistency of this combined measure was good (α = .88).

Resiliency. The 6-item Brief Resilience Scale (BRS; Smith et el., 2008) was used to assess individual resiliency as a trait. Participants responded on a 7-point Likert scale (1=

strongly disagree to 7= strongly agree). An example item states, “I tend to bounce back quickly after hard times.” The BRS demonstrated adequate internal consistency (α =.86).

Work-life Balance. Satisfaction with work-life balance was measured with Valcour’s (2007) 5-item measure on a 7-point scale (1 = very dissatisfied to 7 = very satisfied). A sample item states, “how satisfied are you with how well your work life and your personal or family life fit together?” Internal consistency of the scale is high (α = .95).

Measures: Daily A.M. Survey

Scales can be found in Appendix B.

Mindfulness. State mindfulness was measured with an abbreviated, 5-item measure of the MAAS (Brown & Ryan, 2003). Participants were asked to respond according to their agreement considering the previous four hours of their day and items were adapted to past tense (e.g., “I rushed through activities without being really attentive to them”). Coefficient alphas estimated on each day ranged from α = .83 to α = .92.

Personality. Daily state levels of personality were assessed twice a day with an abbreviated 25-item version of the Big Five markers adjective checklist (Goldberg, 1992) as used by William Fleeson in his ESM assessments of personality density distributions (Fleeson & Wilt, 2010). Participants were asked, “How accurately do the following adjectives describe you over the last 4 hours,” using a 7-point scale (1=very inaccurate to 7=very accurate). Personality state items were adapted to present perfect participle; an example agreeableness item states, “I have been cooperative.” The range of coefficient alphas estimated for each trait on each day are as follows: Agreeableness (from α = .74 to α = .86), Extraversion (from α = .65 to α = .73), Conscientiousness (from α = .83 to α = .88), Openness (from α = .74 to α = .83), and Neuroticism (from α = .75 to α = .80).

Measures: Daily P.M. Survey

In addition to the mindfulness and personality items used in the daily morning survey, the afternoon survey also assessed subjective wellbeing, resilience and work-family balance. Scales can be found in Appendix B. All participants, including those in the control group, were asked to also report if they had engaged in any mindful activities during the day and for how long. Participants in the mindfulness group reported activities and time spent in addition to the morning audio recording.

Subjective wellbeing. Daily subjective wellbeing was assessed through a composite of positive affect, and single-item measures of life satisfaction ("As a whole, I am satisfied with my life") and job satisfaction ("All in all I am satisfied with my job."). These items have been shown to be valid as standalone measures in previous research (Fisher, Matthews & Gibbons, 2016) and are recommended for ESM studies to reduce participant fatigue and scale contamination (Gabriel et al., 2019). The positive affect dimension of subjective wellbeing was assessed with four adjectives from the PANAS ("inspired", "proud", "energetic" and "enthusiastic"). Subjective wellbeing items were rated based on the degree to which participants felt that way *today*. Coefficient alphas estimated on each day ranged from $\alpha = .80$ to $\alpha = .86$.

Work-family Balance. Daily work-family balance was measured with the single item identified as acceptable to be used alone by Fisher and colleagues (2016), "In general, I feel that I have an adequate balance between my work and personal/family life." Participants rated the degree to which they agree to the item based on their experiences *today*.

Resilience. Participants' daily resilience were assessed according to their ability to bounce back from stressors encountered during the day. To measure this, I used four reverse-scored items from the "stress" subscale of the short-form Depression, Anxiety and Stress Scale

(DASS; Lovibond & Lovibond, 1993). The following items were chosen as items with the highest factor loadings: “I was intolerant of anything that kept me from getting on with what I was doing,” “I found it hard to wind down,” “I found myself getting agitated,” and “1 felt that I was rather touchy.” The coefficient alphas estimated for this group of items on each day ranged from $\alpha = .78$ to $\alpha = .87$.

Analyses

Preliminary Analyses. Prior to hypotheses testing, I screened the data for outliers and combined the data into two datasets: one with the baseline and follow up data and one with the daily survey responses (ESM data). Following guidance from Christensen and colleagues (2003), I screened for careless responding by correlating two items from the same daily measure that should be strongly related for each participant. Data from careless responders ($N = 3$) and those who completed fewer than 70% of surveys ($N = 23$) were removed. In total, data from 106 participants were retained. The final number of daily surveys analyzed was 2,058 out of a possible 2,120. The sample of 106 participants is well above the minimum recommended level-2 sample size from ESM experts in the field (Gabriel et al., 2019). I then ran descriptive statistics, examined within- and between-individual correlations, and compared baseline levels of mindfulness for each group to ensure there were no systematic differences between randomly assigned groups.

Estimating Density Distributions. Before testing my hypotheses, I explored the between- and within-person variation in mindfulness and each personality trait (Figure 2.1). I followed procedures of Fleeson (2001) and compared total variation to within-person and between-person variation. Total variation is calculated as the SD across all daily timepoints of each trait ignoring individuals. Within-person variation was estimated by calculating the SD for each individual across each trait. The average of these SDs is displayed in the second bar in Figure 2.1. The between-person variation across traits is shown for both the state-level ESM data

as well as the between-person variation from the baseline scores. The first is a calculated by taking the average of each individual's daily reports for each trait and then estimating the SD across participants.

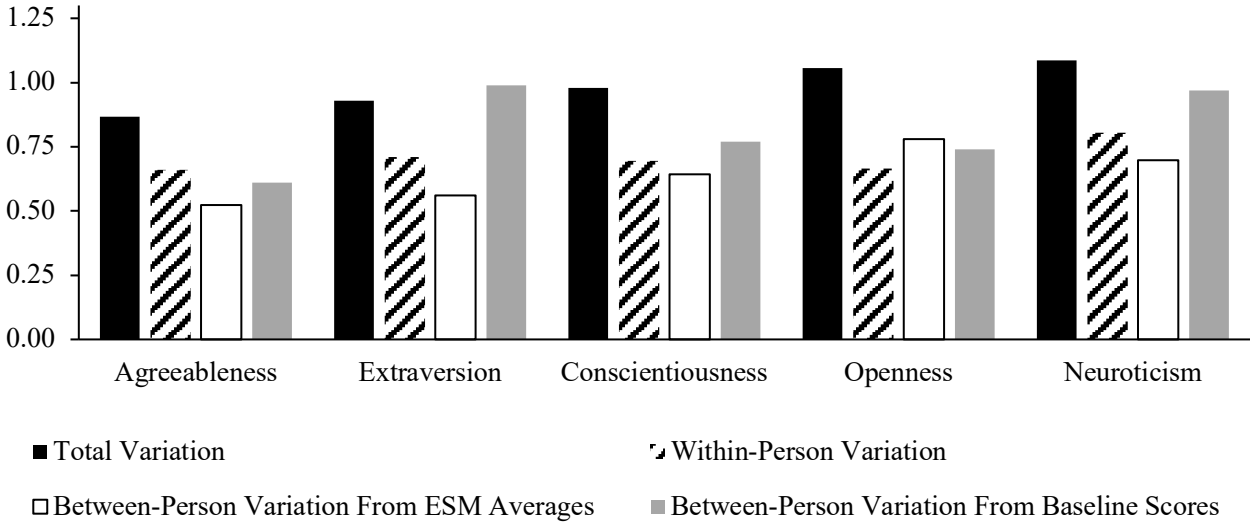

Figure 2.1. Comparison of total, within- and between-person variation of each FFM Trait. The within-person variation bar is the average of 106 within-person standard deviations for each trait, representing how much the typical person's states varied across the 10-day period.

Variance Partitioning. As the final step of preparation before testing my hypotheses, I confirmed the appropriateness of applying multilevel modeling to my nested data structure (i.e. time points within individuals) by assessing the proportion of variance within individuals and between individuals for each variable. Using in Mplus Version 8.5 (Muthén & Muthén, 1998-2017), I estimated an unrestricted multilevel model for each of my Level 1 variables to calculate the intraclass correlation coefficients (ICCs) (Fisher & To, 2012). Table 2.1 depicts sufficient amount of within-person variance in each state-based variable to justify examining the expected

relationships at the within-person level: mindfulness (52%), agreeableness (68%), conscientiousness (61%), extraversion (68%), openness (47%), neuroticism (62%), resilience (73%), satisfaction with work-life balance (39%), and subjective wellbeing (56%).

Table 2.1

Variance composition of Level 1 variables

Construct	Within-individual variance (e^2)	Between-individual variance (r^2)	Within-individual variance (%)
Mindfulness	0.93	0.84	52.40%
Agreeableness	0.51	0.24	67.82%
Extraversion	0.59	0.28	67.71%
Conscientiousness	0.58	0.38	60.86%
Openness	0.52	0.59	46.80%
Neuroticism	0.73	0.45	62.00%
SWB	0.55	0.43	56.33%
Resilience	1.23	0.45	72.98%
SWLB	0.75	1.19	38.85%

Note. Percentage of variance within individuals is calculated as the ratio of within-individual variance divided by the sum of within- and between-individual variance.

Hypothesis Testing. I proceeded to test my hypotheses using mediational multilevel structural equation modeling (MSEM) in Mplus Version 8.5 (Muthén & Muthén, 1998-2017) and taking a hierarchical approach by adding upon each prior model. Applying a MSEM to the data allows me to separate the within- and between-person components of each variable and in turn, interpret the resulting coefficients as describing the within-person relationships controlling for any residual differences at the between-person level. In the model, I designated all level-1 paths to be estimated as random slopes as opposed to fixed slopes for theoretical reasons. In

accordance with the Whole Trait Theory, I anticipate that mindfulness allows for flexibility in expression of personality states without affecting all individuals to the same degree or in the same direction. The model tested is examining within-person variability so estimating random slopes allows for greater nuance across individuals.

To estimate the full model with all outcomes tested concurrently and allowing for estimation of random slopes, I used Bayesian estimation (Asparouhov & Muthén, 2010; Asparouhov et al., 2018; Zyphur & Oswald, 2015) as opposed to maximum likelihood (ML). Bayesian estimation enables more accurate inferences from complex models such as this one and was appropriate for these data particularly in testing for multilevel mediation that can result in nonnormally distributed residuals and more accurately estimates the standard errors/indirect effects (Yuan & MacKinnon, 2009; Zyphur & Oswald, 2015). Mplus flagged inaccurate estimation of these data with attempts to run the random slopes model with ML estimation.

In the first model estimated, I tested the Level-1 within-person direct effect predictions (Hypotheses 1-3). To determine if naturally occurring mindfulness variability within individuals is positively related to their daily subjective wellbeing (H1a), I estimated the standardized path coefficients from daily mindfulness in the morning on afternoon subjective wellbeing (lagged effects). I looked at the same lagged relationships between morning mindfulness and afternoon resilience (H2a) and between morning mindfulness and afternoon satisfaction with work-life balance (H3a).

To test Hypothesis 4 – which argued that daily personality variability will mediate the relationships between naturally occurring daily mindfulness (H4a) and training-induced daily mindfulness (H4b) on daily wellbeing – I followed Preacher et al.'s procedures (2010, 2011) and estimated a 1-1-1 multilevel mediation model where the predictor (mindfulness), mediator

(personality state) and all outcomes (e.g., work-family balance) are all evaluated at Level 1. Finally, to test Hypotheses 1-4b, I added in the intervention group predictor (mindfulness intervention: 1 = experimental group, 0 = control group) in Level 2 of each model to determine if group membership has a cross-level effect on Level 1 state mindfulness and subsequently personality and outcome states.

CHAPTER 3

RESULTS

Table 3.1 presents between-individual descriptive statistics and correlations. Table 3.2 presents within-individual descriptive statistics and repeated measures correlations. Table 3.3 and Table 3.4 depict a breakdown of within-person descriptive statistics and repeated measures correlations by time of day and by experimental group. At the between level, the test of random sampling indicated there were no systematic differences in baseline trait mindfulness levels between the control (M = 3.83, SD = 0.76) and experimental group (M = 3.74, SD = 0.73; t (103) = -0.61, p = .542).

Manipulation Checks

I conducted a series of manipulation checks to evaluate the effectiveness of the low-dose mindfulness intervention for the experimental group in week 2. Aggregated across the daily responses, the experimental mindfulness group (M = 4.84, SD = 1.27) reported marginally higher levels of morning state mindfulness than the control group (M = 4.62, SD = 1.41) during week 2: t (502) = -1.86, p =.063, 95% CI [-.454, .012]. However, the marginal effects of the morning meditation exercise dissipated into the afternoon. Levels of afternoon state mindfulness were not significantly different between the experimental mindfulness (M = 4.79, SD = 1.30) and control (M = 4.65, SD = 1.33) groups: t (500) = -1.24, p = .214, 95% CI [-.368, .082].

At the between-person level, I ran a 2 (Experimental Group: 1=Mindfulness, 0=Control) x 2 (Time: 1 = Baseline, 2 = Follow up) ANOVA. Results indicated there was no effect of Group (F (1,105) = 0.02, p = .883), time (F (1,105) = 0.99, p =.320), nor interaction effect of Group x

Time (F (1,105) = 1.02, p = .314), on levels of trait mindfulness. For the mindfulness experimental group, trait mindfulness held constant from baseline (M = 3.74, SD = 0.73) to follow up (M = 3.74, SD = 0.70): t (104) = -0.002, p = .998, 95% CI [-.275, .275]. For the control group, trait mindfulness also remained the same with a non-significant slight decline from baseline (M = 3.83, SD = 0.76) to follow up (M = 3.62, SD = 0.79): t (102) = 1.36, p = .177, 95% CI [-.095, .510].

Tests of Hypotheses

Table 3.5 depicts results of the hierarchical progression of the MSEM analysis testing Hypotheses 1-3. All estimates are reported in standardized form. As a normal distribution assumption is not used in Bayesian estimation, the estimates are reported with the standard deviation of the posterior distribution (*SD*) instead of the standard error (*SE*) as with frequentist (e.g., ML) estimation. The p-value is also based on the posterior distribution and is reported as a one-tailed significance test. Rather than reporting the probability of rejecting the null in NHST, the Bayesian p-value allows for more straight-forward interpretation as the probability of the parameters set in my model given the observed data. For these results, the p-value represents the proportion of the posterior distribution below zero for positive estimates and the proportion of the posterior distribution above zero for negative estimates (Muthén, 2010). Additionally, as the Bayesian estimates are median or most probable estimates in the posterior distribution, they are reported with 95% confidence intervals where the smaller the confidence interval, the more pronounced the peak indicating better estimates (Zyphur & Oswald, 2015).

Hypothesis 1 suggested state mindfulness – as naturally occurring (H1a) and following mindfulness training (H1b) – is positively associated with daily subjective wellbeing indices of positive affect, life satisfaction and job satisfaction. Hypothesis 1a was supported with results

indicating that morning state mindfulness was positively related to daily subjective wellbeing in the afternoon (β = .184, p < .001, 95% CI = [.116, .250]). The addition of the experimental condition to the model at the between level did not add anything to the model. Although morning mindfulness remained positively related to end-of-day subjective wellbeing, the induced mindfulness training had no cross-level effect on morning state mindfulness (β = .089, p = .119, 95% CI = [-.056, .232]), nor on daily subjective wellbeing (β = .022, p = .382, 95% CI = [-.125, .167]). Moreover, average levels of subjective wellbeing did not differ between control (M = 4.37, SD = 1.12) and mindfulness (M = 4.41, SD = 1.03) groups during week 2: t (495) = -.451, p = .652, 95% CI [-0.224, 0.141]. Thus, Hypothesis 1b was not supported.

Hypothesis 2 suggested state mindfulness – as naturally occurring (H2a) and following mindfulness training (H2b) – is positively associated with daily resilience to stress. Providing support for Hypothesis 2a, results indicated a beneficial effect of morning state mindfulness on daily resilience (β = .163, p < .001, 95% CI = [.098, .231]). However, as stated previously, the induced mindfulness training had no effect on morning state mindfulness. On average, the experimental mindfulness group reported greater daily resilience (M = 4.66, SD = 1.75) than the control group (M = 4.36, SD = 1.63) during week 2: t (498) = -2.555, p = .011, 95% CI [-.526, -.069]. Nonetheless, the induced mindfulness training had no effect on daily resilience (β = .104, p = .095, 95% CI = [-.052, .258]). Therefore, Hypothesis 2b was not supported.

Hypothesis 3 suggested state mindfulness – as naturally occurring (H3a) and following mindfulness training (H3b) – is positively associated with daily satisfaction with work-life balance. Hypothesis 3a was supported by the effect of morning state mindfulness on daily satisfaction with work-life balance measured in the afternoon (β = .080, p = .021, 95% CI = [.003, .144]). However, results indicate the mindfulness training condition during week 2 had no

effect on morning mindfulness nor daily satisfaction with work-life balance (β = .004, p > .476, 95% CI = [-.135, .142]). There was no difference in daily satisfaction with work-life balance between control (M = 5.19, SD = 1.74) and mindfulness (M = 5.27, SD = 1.78) groups during week 2: t (499) = -.631, p = .582, 95% CI [-.308, .158]. Thus, Hypothesis 3b was not supported.

Hypothesis 4 predicted that dynamic FFM personality states of agreeableness, openness, conscientiousness, neuroticism and extraversion would mediate the relationships between mindfulness and employee wellbeing outcomes. Providing partial support for H4a, results across all five models show evidence of mediation by every FFM trait at the state level for at least one wellbeing outcome. Results of analyses for H4 are described by each mediating FFM trait below in order of the strength of their indirect effects. Tables 3.11 and 3.12 depict the estimated indirect and total indirect effects.

Neuroticism. Table 3.6 shows the full results of the neuroticism mediational model. Results suggest afternoon state neuroticism mediated the relationship between morning mindfulness and daily employee wellbeing across all wellbeing outcomes at the within-person level. Morning mindfulness was negatively related to afternoon neuroticism (β = -.218, p < .001, 95% CI [-.277, -.149]), which in turn, was negatively related to daily subjective wellbeing (*indirect effect* = .074, p < .001, 95% CI [.037, .117]), resilience to daily stressors (*indirect effect* = .126, p = .001, 95% CI [.055, .190]), and satisfaction with work-life balance (*indirect effect* = .035, p = .020, 95% CI [.002, .077]). Afternoon state neuroticism fully mediated the relationship between morning mindfulness and end-of-day satisfaction with work-life balance (MFN → N 'a' path: β = -.218, p < .001 and N → SWLB 'b' path: β = -.164, p < .001) as the direct effect between mindfulness and satisfaction with work-life balance was not significant ('c' path: β = .040, p = .140). The mediating effect of state neuroticism supports Hypothesis 4a.

Adding the dummy-coded experimental condition in Level 2 had no cross-level direct effect on morning mindfulness (β = .086, p = .122, 95% CI [-.060, .227]) nor on afternoon neuroticism (β = -.076, p = .135, 95% CI [-.211, .059]) during week 2. Despite lack of training effect, state neuroticism continued to mediate the relationship between morning mindfulness and afternoon subjective wellbeing (*indirect effect* = .066, p = .026, 95% CI [-.001, .134]) and resilience (*indirect effect* = .119, p = .012, 95% CI [.016, .242]) during week 2. Results of the serial mediation indicate that state mindfulness mediated the relationship between the mindfulness intervention and neuroticism in addition to neuroticism mediating the relationship between state mindfulness and resilience (*total indirect effect* = .151, p = .047, 95% CI [-.025, .345]). The total indirect effect approached significance for the serial mediation explaining the relationship between the experimental treatment allocation and subjective wellbeing (*total indirect effect* = .092, p = .054, 95% CI [-.021, .215]). In addition, the experimental mindfulness group showed lower average levels of afternoon neuroticism (M = 3.43, SD = 1.14) than the control group (M = 3.69, SD = 1.06) during week 2: t (500) = 2.590, p = .010, 95% CI [.062, .449]. These results provide partial support for Hypothesis 4b.

Agreeableness. Table 3.7 shows the full results of the agreeableness mediational model. Results suggest afternoon state agreeableness mediated the relationship between morning mindfulness and daily employee wellbeing across all wellbeing outcomes at the within-person level. Morning mindfulness positively predicted afternoon agreeableness (β = .139, p < .001, 95% CI [.069, .201]) which is, in turn, positively related to daily subjective wellbeing (*indirect effect* = .052, p = .001, 95% CI [.020, .092]), resilience to daily stressors (*indirect effect* = .043, p = .024, 95% CI [.001, .088]), and satisfaction with work-life balance (*indirect effect* = .025, p = .042, 95% CI [-.003, .056]). The standardized path estimates indicate that within-person

variability in agreeableness partially explained the relationships between mindfulness and wellbeing day-to-day. The mediating effect of state agreeableness contributes support for Hypothesis 4a.

The cross-level effect of experimental group had no effect on morning mindfulness (β = .080, p = .143 95% CI [-.066, .221]) nor afternoon agreeableness (β = .033, p = .329, 95% CI [-.112, .177]) during week 2. All within and total indirect effects estimated were non-significant. There was also no difference in average levels of afternoon state agreeableness between the mindfulness group (M = 5.31, SD = 0.86) and the control group (M = 5.19, SD = 0.92) during week 2: t (492) = -1.550, p = .122, 95% CI [-.279, .033]. With these results and the reduced statistical power in week 2 observations, the indirect effects via agreeableness were non-significant in week 2 and do not provide support for Hypothesis 4b.

Extraversion. Table 3.8 shows the full results of the extraversion mediational model. Naturally occurring state mindfulness in the morning positively predicted afternoon state extraversion (β = .136, p < .001, 95% CI [.069, .200]). However, results indicate afternoon extraversion only mediated the relationship between mindfulness and daily subjective wellbeing (*indirect effect* = .045, p = .002, 95% CI [.015, .077]). The indirect effects through extraversion were non-significant for the mindfulness-satisfaction with work-life balance (*indirect effect* = .008, p = .233, 95% CI [-.016, .035]) and mindfulness-resilience (*indirect effect* = .025, p = .057, 95% CI [-.007, .060]) relationships. These results contribute partial support for Hypothesis 4a.

As with previous neuroticism and agreeableness models, there is no evidence of a mindfulness training effect on morning mindfulness (β = .100, p = .086, 95% CI [-.045, .239]) nor on afternoon state extraversion (β = .103, p = .113, 95% CI [-.063, .266]) during week 2. Although path estimates indicate that extraversion continued to have a positive effect on

afternoon wellbeing, morning mindfulness was no longer significantly related to extraversion (β = .075, p = .083, 95% CI [-.026, .177]). The indirect effects from state mindfulness to wellbeing outcomes were also non-significant during week 2. Surprisingly, the indirect effects were stronger when the experimental mindfulness condition was added as a predictor. Estimation of the serial mediation indicates that state mindfulness and extraversion mediate the relationship between the experimental mindfulness group and resilience (*total indirect effect* = .101, p = .050, 95% CI [-.020, .249]). The total indirect effect also approached significance for the serial mediation explaining the relationship between the experimental group and subjective wellbeing (*total indirect effect* = .102, p = .054, 95% CI [-.023, .236]). The mindfulness group also demonstrated higher levels of state extraversion in the afternoons (M = 4.40, SD = 0.97) than the control group (M = 4.22, SD = 0.90) during week 2: t (500) = -2.186, p = .029, 95% CI [-.344, -.018]). These results provide additional, albeit minor, support for Hypothesis 4b.

Conscientiousness. Table 3.9 shows the full results of the conscientiousness mediational model. Afternoon state conscientiousness mediated only the relationship between morning state mindfulness and daily subjective wellbeing (*indirect effect* = .040, p = .012, 95% CI [.006, .075]) across both weeks. Morning mindfulness positively predicted afternoon conscientiousness (β = .131, p <.001, 95% CI [.054, .204]) which in turn was positively associated with subjective wellbeing (β = .370, p <.001, 95% CI [.307, .436]). Despite significant 'a' and 'b' paths, the indirect effects through conscientiousness were non-significant for the mindfulness-satisfaction with work-life balance (*indirect effect* = .022, p = .116, 95% CI [-.013, .061]) and mindfulness-resilience (*indirect effect* = .034, p = .068, 95% CI [-.009, .082]) relationships. These results contribute partial support for Hypothesis 4a.

There is no evidence of a mindfulness training effect on morning mindfulness (β = .087, p = .119, 95% CI [-.058, .228]) nor afternoon conscientiousness (β = -.003, p = .482, 95% CI [-.147, .145]) during week 2. Although path estimates indicate that conscientiousness continued to have a positive effect on afternoon wellbeing, the indirect effects were non-significant during week 2. Moreover, there was no difference in conscientiousness between the mindfulness (M = 5.22, SD = 0.96) and control group (M = 5.15, SD = 0.92) during week 2: t (500) = -.860, p = .390, 95% CI [-.238, .093]. These results do not provide support for Hypothesis 4b.

Openness. Table 3.10 shows the full results of the openness mediational model. Morning mindfulness positively predicted afternoon openness (β = .112, p < .001, 95% CI [.040, .178]) which was positively associated with all employee wellbeing outcomes. As with extraversion and conscientiousness, state openness only mediated the relationship between morning mindfulness and afternoon subjective wellbeing (*indirect effect* = .040, p = .026, 95% CI [.000, .079]). Despite significant 'a' and 'b' paths, the indirect effects through openness were non-significant for the mindfulness-satisfaction with work-life balance (*indirect effect* = .021, p = .144, 95% CI [-.021, .059]) and mindfulness-resilience (*indirect effect* = .027, p = .112, 95% CI [-.017, .076]) relationships. These results contribute partial support for Hypothesis 4a.

Finally, there was no evidence of a mindfulness training effect on morning mindfulness (β = .092, p = .111, 95% CI [-.056, .234]) nor afternoon openness (β = .015, p = .416, 95% CI [-.126, .154]) during week 2. Although the 'a' and 'b' path estimates were significant, all of the estimated indirect effects were non-significant during week 2. Moreover, there was no difference in openness between the mindfulness (M = 4.08, SD = 0.96) and control group (M = 4.05, SD = 0.92) during week 2: t (498) = -0.286, p = .775, 95% CI [-.215, .160]). Thus, these results do not provide support for Hypothesis 4b.

In sum, Hypothesis 4 was partially supported particularly in the case of state neuroticism and state agreeableness mediating the relationships between naturally occurring states of morning mindfulness and daily wellbeing (H4a). There is slight evidence suggesting that the mindfulness training had indirect effects on employee wellbeing through neuroticism and extraversion (H4b).

Supplemental Analyses

The results shown in support of Hypothesis 4a inform the directionality of the mindfulness-personality relationship through the temporal separation between morning mindfulness and afternoon personality states. Yet, given the well-established relationships between personality and wellbeing (Anglim et al., 2020; Howell et al., 2017), I considered a possible reverse causal relationship in which personality states could predict change in state mindfulness to address any withstanding concerns of directionality. I explored the alternative model – in which mindfulness mediates the relationship between personality and wellbeing – by estimating the full MSEM mediation model examined in Hypothesis 4a again with the mediator and predictor inputs swapped. To further demonstrate the directionality, I included the morning personality states and the afternoon mindfulness state scores.

I evaluated the model data fit marked by lower Deviance Information Criterion (DIC) scores as a method to compare the hypothesized and alternate Bayesian models (Muthén, 2010). First, I explored the reverse causal relationship between mindfulness and neuroticism. Results indicate the hypothesized model (DIC = 13,228.76) showed superior fit to the alternate model (DIC = 13,333.15) surpassing the threshold difference of at least 10 (Spiegelhalter et al., 2002). Similarly, when exploring the reverse casual effect of agreeableness and mindfulness, the hypothesized model again showed superior fit (DIC = 12,958.63) to the alternate model (DIC =

13,060.44). Additionally, for both neuroticism and agreeableness alternate models, the indirect effect on satisfaction with work-life balance is not significant. This suggests that state mindfulness does indeed predict states of neuroticism and agreeableness which positively influence daily perspective of work and nonwork balance.

I also compared the hypothesized and alternate models for the extraversion, conscientiousness and openness models. Interestingly, the alternate extraversion model demonstrated slightly better fit (DIC = 13,137.73) than the hypothesized model (DIC = 13,190.47), however, there are no significant indirect effects in the alternate model and the predictive relationships are stronger in the hypothesized model (e.g., AM Extraversion → PM Mindfulness: $\beta = .062$, $p = .041$ versus AM Mindfulness → PM Extraversion: $\beta = .136$, $p < .001$). Similarly, the alternative openness model shows slightly better fit (DIC = 12,889.56) than the hypothesized model (DIC = 13,060.28) yet demonstrates weaker relationships and no significant indirect effects to support mediating effects of mindfulness.

An interesting alternate model emerged depicting the reverse conscientiousness-mindfulness relationship. Although the hypothesized model demonstrated better fit (DIC = 13,087.26) than the alternate model (DIC = 13,144.29), results of the alternate model indicated two significant indirect effects. First, morning conscientiousness positively predicted afternoon mindfulness ($\beta = .136$, $p < .001$, 95% CI [.068, .199]) which in turn was positively related to daily subjective wellbeing ($\beta = .356$, $p < .001$, 95% CI [.288, .410]; *indirect effect* = .063, $p = .005$, 95% CI [.017, .119]) and resilience to stress ($\beta = .266$, $p < .001$, 95% CI [.201, .328]; *indirect effect* = .095, $p < .001$, 95% CI [.033, .172]). Results of the alternate model suggest that afternoon mindfulness fully mediated the relationship between morning conscientiousness and daily resilience to stress as the direct effect is nonsignificant ($\beta = .033$, $p = .156$, 95% CI [-.033, .105]).

Taken together, the investigation into these alternative models provides further support of my proposed model with exception to the relationships between mindfulness, conscientiousness and wellbeing which deserve further exploration. Overall, the supplemental analyses add to the interpretation of the hypothesized results as statistically and conceptually sound.

Mindfulness Intervention Efficacy. Given the lack of evidence supporting the efficacy of the experimental mindfulness intervention during week 2, I explored two potential confounding variables that may have interfered: (a) mindfulness group compliance in engaging with the daily mindfulness exercise and (b) self-directed mindfulness practice outside of the daily intervention by participants in both groups.

Compliance Check. During week 2, individuals in the experimental mindfulness group ($N = 54$) were asked to engage with a guided meditation every morning for 5 days and provide an honest report of how actively they participated in the meditation immediately following (total possible observations = 270). With missing data, there were 255 responses to the compliance check during week 2. Of these, individuals reported "listening to and following along with the entire practice" 65% of the time and "listening to some of the practice but stopping before the end" 10% of the time. Participants admitted to "listening to the entire recording but paying attention to other things at the same time (e.g., email)" 17% of the time which is the opposite of mindfulness. Finally, participants completely skipped the exercise 8% of the time. These last two responses would mean that 25% of the time, mindfulness group participants acted essentially as control group participants in not receiving the morning training intervention.

To test whether this impacted the results during week 2, I re-coded the compliance data to create a revised between-level variable to test the effect of the mindfulness intervention training based on degree to which mindfulness group participants engaged in the exercise on each day (0

= did not receive or did not listen to the mindfulness audio at all, 1 = listened to the mindfulness audio while paying attention to other tasks, 2 = listened to and followed along with part of but not all of the mindfulness audio, and 3 = listened to and followed along with the entire mindfulness audio). As expected, all of the control group participants were assigned a "0". I included this variable in at between level as an individual average (cluster mean) – or average degree each person engaged with the intervention across week 2 – as an additional cross-level predictor of each variable in the model in place of the redundant group variable to retest Hypothesis 4b. In effect, it served as a more nuanced measure capturing the manipulation strength of the week 2 intervention per individual. Appendix C provides all total indirect effects resulting from the new manipulation strength mindfulness intervention cross-level predictor.

Results for the neuroticism mediation model with the level 2 mindfulness training manipulation strength predictor showed a cross-level effect of mindfulness intervention on afternoon neuroticism (β = -.143, p = .018, 95% CI [-.275, - .010]) which, in turn, continued to positively impact all daily wellbeing outcomes. Bypassing morning state mindfulness, engagement with the morning mindfulness intervention was negatively associated with afternoon neuroticism which was negatively associated with daily subjective wellbeing (β = -.362, p < .001, 95% CI [-.457, - .266]; *indirect effect* of intervention->N->SWB = .037, p = .018, 95% CI [.002, .078]), satisfaction with work-life balance (β = -.121, p = .015, 95% CI [-.275, - .010]; *indirect effect* of intervention->N->SWLB = .011, p = .043, 95% CI [-.001, .034]), and resilience to daily stressors (β = -.422, p < .001, 95% CI [-.500, - .319]); *indirect effect* of intervention->N-> Resilience = .061, p = .018, 95% CI [.004, .127]). The mindfulness intervention still showed no direct effect on state mindfulness nor on wellbeing outcomes. Path estimates indicate that state neuroticism – as influenced by active engagement with the mindfulness training – now fully

mediated the relationships between morning state mindfulness and daily resilience to stress and between morning state mindfulness and satisfaction with work-life balance that day. Morning state mindfulness no longer directly affected those daily outcomes. Detailed results of the neuroticism model with the revised cross-level moderator are provided in Appendix C.

For all of the other personality state models, results with the addition of the mindfulness intervention strength predictor emerged no different than those shown in results for Hypothesis 4b. The effects of the active participation in the mindfulness group did not differ from the effects of the randomly assigned binary group predictor. All path estimates were similar to those ran in test of Hypothesis 4b and no significant indirect effects were found. Notably, in the extraversion model, the effect of morning mindfulness on afternoon extraversion was no longer significant with the manipulation strength cross-level predictor.

Self-directed Mindfulness Practice. Due to the lack of a controlled environment over the two weeks, I foresaw a risk of self-directed practice effects outside of the experimental group exercises and that individuals assigned to both groups could have engaged in their own self-directed mindfulness practice throughout week 2. In the afternoon survey during week 2, I asked all participants to report whether they engaged in any self-directed mindfulness activities and for how long (in minutes). On average, individuals in the control group reported spending twice as much time on self-directed daily mindfulness practice (M = 34.35 minutes, SD = 28.20) than individuals in the mindfulness group (M = 16.45 minutes, SD = 17.98) during week 2: t (78) = 4.008, p <.001, 95% CI [9.012, 26.802]. Examples of self-reported mindful activities included engaging with mindfulness smartphone applications, yoga, breathing exercises, prayer as well as active mindful activities such as mindful walking, journaling and coloring. Although these durations were self-reported and could not be validated, it is notable to consider whether the

control group spending almost twice as much time in self-directed practice than the mindfulness group could have weakened the efficacy of the experimental group comparison during week 2.

I explored the effect of daily self-directed practice in Model 2 during week 2 with mindfulness training group at Level 2. Daily self-directed practice duration had no effect on morning state mindfulness (β = -.117, p = .175, 95% CI [-.329, .106]), daily resilience (β = -.002, p = .496, 95% CI [-.252, .252]), subjective wellbeing (β =.194, p = .055, 95% CI [-.045, .399]), nor satisfaction with work-family balance (β = .001, p = .498, 95% CI [-.223, .215]). Yet, when accounting for self-directed practice duration, the mindfulness training group cross-level effect on morning state mindfulness approached significance (β = .118, p = .059, 95% CI = [-.030, .259]) and in the expected direction. At the between-individual level, average self-directed practice duration was also positively related to average levels of morning mindfulness (β = .295, p = .052, 95% CI = [-.072, .580]). Similar results occurred when accounting for self-directed practice time in the mediational personality models.

Table 3.1

Correlations and Descriptive Statistics (Between Individuals)

BETWEEN	Baseline											Follow Up	
	M	*SD*	1	2	3	4	5	6	7	8	9	*M*	*SD*
1. Mindfulness	3.79	0.74		.18^{t}	.19^{t}	.41**	.08	-.29**	-.01	-.08	.01	3.68	0.75
2. Agreeableness	5.35	0.61	.10		.13	.27**	.07	-.34**	.15	.33**	.13	5.23	0.59
3. Extraversion	4.70	0.99	.07	.19*		.16	.19^{t}	-.09	.27**	.35**	-.01	4.56	0.89
4. Conscientiousness	5.26	0.77	.46**	.30**	.14		.16	-.14	.08	.15	.04	5.17	0.77
5. Openness	4.86	0.74	.06	.19*	.21*	.21*		-.01	.08	.17	.05	4.65	0.68
6. Neuroticism	4.05	0.97	-.38**	-.31**	-.06	-.27**	-.01		-.38**	-.44**	-.36**	4.00	0.83
7. SWB	3.99	0.69	.18^{t}	.29**	.22*	.33**	.08	-.45**		.45**	.51**	4.10	0.60
8. Resiliency	3.78	0.54	.06	.48**	.30**	.28**	.12	-.56**	.56**		.21*	3.78	0.50
9. WLB	4.94	1.39	.26*	.08	-.04	.14	-.10	-.33**	.39**	.16		5.15	1.27

Note. Variables are assessed between individuals. Correlations below the diagonal represent relationships at baseline (N=105-106) and correlations above the diagonal represent relationships at follow up (N=104). WLB = Satisfaction with Work Life Balance. SWB = Subjective Wellbeing. $^{**}p < .01$ (two-tailed). $^{*}p < .05$ (two-tailed). $^{t}p < .07$ (two-tailed).

Table 3.2

Correlations and Descriptive Statistics (Within Individuals)

WITHIN	*N*	*M*	*SD*	1	2	3	4	5	6	7	8
1. Mindfulness	2051	4.67	1.33								
2. Agreeableness	2051	5.24	0.87	.33							
3. Extraversion	2049	4.30	0.93	.23	.34						
4. Conscientiousness	2050	5.17	0.98	.43	.54	.37					
5. Openness	2048	4.02	1.06	.26	.34	.30	.36				
6. Neuroticism	2049	3.52	1.09	-.40	-.38	-.21	-.29	-.24			
7. SWB	1022	4.45	0.99	.38	.44	.43	.43	.41	-.41		
8. Resilience	1011	4.50	1.30	.27	.36	.19	.19	.24	-.49	.32	
9. WLB	1021	5.16	1.40	.13	.18	.12	.22	.26	-.19	.26	.19

Note. Variables are assessed at the daily level across morning and afternoon surveys. N = 1011-2051 observations across 106 individuals. WLB = Satisfaction with Work Life Balance, SWB = Subjective Wellbeing. All correlations are significant $^{**}p < .01$.

Table 3.3

Correlations and Descriptive Statistics (Within Individuals – H1-4a)

WITHIN	*N*	*M*	*SD*	1	2	3	4	5	6	7	8
1. Mindfulness (AM)	1029	4.69	1.79								
2. Agreeableness (PM)	1022	5.23	0.76	.15							
3. Extraversion (PM)	1021	4.32	0.86	.15	.33						
4. Conscientiousness (PM)	1021	5.19	0.92	.15	.53	.36					
5. Openness (PM)	1020	4.05	1.15	.15	.35	.28	.35				
6. Neuroticism (PM)	1021	3.53	1.19	-.24	-.36	-.22	-.29	-.29			
7. SWB (PM)	1022	4.45	0.99	.21	.44	.43	.42	.42	-.43		
8. Resilience (PM)	1011	4.50	1.70	.17	.36	.19	.20	.27	-.50	.33	
9. WLB (PM)	1021	5.16	1.97	.09	.18	.12	.21	.27	-.20	.26	.20

Note. Variables are assessed within individuals at the daily level and demonstrate lagged relationships between morning mindfulness and afternoon state personality and wellbeing. N =1011-1029 observations from 106 employees. WLB = Satisfaction with Work Life Balance, SWB = Subjective Wellbeing. All correlations are significant **$p < .01$.

Table 3.4

Correlations and Descriptive Statistics (Within Individuals Week 2 – H1-4b)

	MFN Group											Control Group	
	M	*SD*	1	2	3	4	5	6	7	8	9	*M*	*SD*
1. Mindfulness (AM)	4.84	1.51		.14	.08	.14	.17*	-.21*	.16*	.23**	-.04	4.62	2.04
2. Agreeableness (PM)	5.31	0.73	.11		.43**	.54**	.32**	-.44**	.48**	.34**	.07	5.19	0.84
3. Extraversion (PM)	4.40	0.93	.14	.37**		.42**	.30**	-.20*	.45**	.19*	.09	4.22	0.79
4. Conscientiousness (PM)	5.22	0.93	.14	.48**	.36**		.39**	-.34**	.42**	.22*	.18**	5.15	0.85
5. Openness (PM)	4.08	1.12	.09	.32**	.31**	.29**		-.37**	.39**	.40**	.18**	4.06	1.15
6. Neuroticism (PM)	3.43	1.30	-.17t	-.31**	-.26**	-.23*	-.22*		-.42**	-.47**	-.01	3.69	1.13
7. SWB (PM)	4.41	1.03	.23*	.44**	.47**	.44**	.37**	-.50**		.28**	.20**	4.37	1.12
8. Resilience (PM)	4.66	1.75	.02	.33**	.22*	.08	.27**	-.44**	.39**		.09	4.36	1.63
9. SWLB (PM)	5.27	1.78	.08	.17*	.20*	.31**	.28**	-.25*	.34**	.28**		5.19	1.74

Note. Correlations below the diagonal represent relationships existing within the experimental mindfulness group ($N = 270$ observations from 54 employees) and correlations above the diagonal represent relationships within the control group ($N = 257$ observations from 52 employees). SWLB = Satisfaction with Work Life Balance, SWB = Subjective Wellbeing, MFN = Experimental Mindfulness Group. **$p < .01$ (two-tailed). *$p < .05$ (two-tailed). t$p < .07$ (two-tailed).

Table 3.5

Multilevel Structural Equation Modeling Direct Effects of Morning Mindfulness on Afternoon Wellbeing (H1-3)

		Mindfulness (AM)			Resilience (PM)			Subjective Wellbeing (PM)			Satisfaction with WLB (PM)		
	Predictor	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI
Model 1 - *Hypothesis 1-3a*													
Level 1	Intercept				5.099***	.830	[3.566, 6.844]	7.037***	.780	[5.448, 8.493]	3.866***	.628	[2.639, 5.104]
	Mindfulness (AM)				.163***	.034	[.098, .231]	.184***	.033	[.116, .250]	.080*	.036	[.003, .144]
	L1 Residual Variance				.950***	.013	[.922, .974]	.928***	.017	[.892, .956]	.967***	.012	[.940, .985]
	R^2				.050***	.013	[.026, .078]	.072***	.017	[.044, .108]	.033***	.012	[.015, .060]
Model 2 - *Hypothesis 1-3b*													
Level 1	Intercept				4.075***	.905	[2.491, 6.040]	6.042***	.757	[4.556, 7.525]	3.627***	.644	[2.375, 4.887]
	Mindfulness (AM)				.146**	.048	[.045, .236]	.184***	.054	[.073, .285]	.032	.051	[-.068, .125]
	L1 Residual Variance				.897***	.026	[.844, .948]	.914***	.022	[.864, .949]	.944***	.026	[.877, .979]
	R^2				.103***	.026	[.021, .123]	.086***	.022	[.051, .136]	.056***	.026	[.021, .123]
Level 2	Mindfulness Training	.089	.074	[-.056, .232]	.104	.079	[-.052, .258]	.022	.075	[-.125, .167]	.004	.070	[-.135, .142]
	L2 Residual Variance	.992***	.015	[.946, 1.000]	.794***	.096	[.582, .949]	.981***	.030	[.888, .999]	.964***	.040	[.852, .999]
	R^2	.008***	.015	[.000, .054]	.206***	.096	[.051, .418]	.019***	.030	[.001, .112]	.036***	.040	[.001, .148]

Note. $N = 1055$ observations across both weeks and 106 employees (Model 1). $N = 270$ observations across 54 employees for the Mindfulness Training Group (coded 1) and $N = 257$ observations across 52 employees for the Control Group (coded 0) during week 2 (Model 2). Est. = standardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. Between-person results omitted. * $p < .05$; ** $p < .01$; *** $p < .001$ (one-tailed).

Table 3.6

Multilevel Structural Equation Modeling Direct Effects of Morning Mindfulness on Afternoon Neuroticism and Wellbeing (H4)

		Neuroticism (PM)			Resilience (PM)			Subjective Wellbeing (PM)			Satisfaction with WLB (PM)		
	Predictor	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI
Model 3 - *Hypothesis 4a*													
Level 1	Intercept	7.961***	.529	[7.051, 9.146]	11.968***	1.282	[9.364, 14.395]	8.963***	1.261	[6.293, 11.217]	7.230***	1.179	[4.738, 9.311]
	Mindfulness (AM)	-.218***	.033	[-.277, -.149]	.063*	.034	[.004, .131]	.101**	.032	[.034, .160]	.040	.035	[-.033, .104]
	Neuroticism (PM)				-.460***	.030	[-.515, -.397]	-.358***	.033	[-.422, -.291]	-.164***	.034	[-.233, -.097]
	L1 Residual Variance	.903***	.016	[.872, .934]	.745***	.026	[.696, .805]	.767***	.022	[.721, .810]	.895***	.018	[.858, .928]
	R^2	.097***	.016	[.066, .128]	.255***	.026	[.195, .303]	.233***	.022	[.189, .279]	.105***	.018	[.072, .142]
Model 4 - *Hypothesis 4b*													
Level 1	Intercept	7.817***	.630	[6.603, 9.075]	9.890***	1.464	[7.226, 13.000	7.907***	1.442	[4.961, 10.637]	7.036***	1.378	[4.318, 9.752]
	Mindfulness (AM)	-.172**	.053	[-.273, -.067]	.057	.048	[-.040, .142]	.105*	.048	[.010, .201]	-.001	.050	[-.103, .097]
	Neuroticism (PM)				-.380***	.046	[-.471, -.287]	-.358***	.049	[-.449, -.260]	-.126**	.051	[-.222, -.021]
	L1 Residual Variance	.864***	.029	[.795, .906]	.697***	.031	[.639, .762]	.716***	.030	[.657, .775]	.848***	.046	[.762, .921]
	R^2	.136***	.029	[.093, .205]	.303***	.031	[.238, .361]	.284***	.030	[.225, .343]	.152***	.046	[.078, .238]
Level 2	Mindfulness Training	-.076	.069	[-.211, .059]	.035	.065	[-.092, .165]	-.016	.073	[-.159, .127]	-.037	.068	[-.170, .097]
	L2 Residual Variance	.655***	.101	[.451, .844]	.403***	.115	[.194, .643]	.936***	.058	[.777, .995]	.822***	.085	[.628, .955]
	R^2	.345***	.101	[.156, .549]	.597***	.115	[.357, .806]	.064***	.058	[.005, .223]	.178***	.085	[.045, .372]

Note. $N = 1055$ observations across both weeks and 106 employees (Model 3). $N = 270$ observations across 54 employees for the Mindfulness Training Group (coded 1) and $N = 257$ observations across 52 employees for the Control Group (coded 0) during week 2 (Model 4). Est. = standardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. Between-person results omitted. Gelman & Rubin (1992) convergence criterion was met at 55,000 iterations.

* $p < .05$; ** $p < .01$; *** $p < .001$ (one-tailed).

Table 3.7

Multilevel Structural Equation Modeling Direct Effects of Morning Mindfulness on Afternoon Agreeableness and Wellbeing (H4)

		Agreeableness (PM)			Resilience (PM)			Subjective Wellbeing (PM)			Satisfaction with WLB (PM)		
	Predictor	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI
Model 3 - *Hypothesis 4a*													
Level 1	Intercept	8.107***	1.074	[6.106, 10.311]	3.095**	1.292	[.695, 5.735]	3.210**	1.192	[.976, 5.626]	3.129**	1.183	[.808, 5.469]
	Mindfulness (AM)	.139***	.034	[.069, .201]	.113***	.031	[.055, .179]	.147***	.032	[.078, .199]	.065*	.032	[.002, .130]
	Agreeableness (PM)				.325***	.033	[.250, .383]	.371***	.033	[.305, .432]	.173***	.033	[.109, .236]
	L1 Residual Variance	.940***	.015	[.911, .968]	.828***	.020	[.786, .864]	.768***	.024	[.721, .812]	.905***	.025	[.867, .954]
	R^2	.060***	.015	[.032, .089]	.172***	.020	[.023, .292]	.232***	.024	[.187, .279]	.095***	.025	[.046, .133]
Model 4 - *Hypothesis 4b*													
Level 1	Intercept	7.370***	1.152	[5.364, 9.869]	2.492*	1.465	[-.140, 5.602]	2.779*	1.326	[.313, 5.499]	1.877	1.227	[-.481, 4.318]
	Mindfulness (AM)	.092*	.053	[-.009, .190]	.082*	.047	[-.011, .170]	.125**	.054	[.025, .225]	.046	.055	[-.065, .145]
	Agreeableness (PM)				.240***	.052	[.131, .340]	.384***	.049	[.287, .476]	.129*	.057	[.014, .233]
	L1 Residual Variance	.886***	.016	[.851, .915]	.777***	.041	[.691, .849]	.726***	.037	[.652, .798]	.899***	.021	[.854, .938]
	R^2	.114***	.016	[.085, .149]	.223***	.041	[.150, .309]	.274***	.037	[.202, .348]	.101***	.021	[.062, .146]
Level 2	Mindfulness Training	.033	.074	[-.112, .177]	.097	.077	[-.053, .248]	-.005	.070	[-.142, .134]	-.001	.068	[-.135, .133]
	L2 Residual Variance	.753***	.101	[.537, .926]	.740***	.101	[.525, .915]	.817***	.093	[.607, .964]	.912***	.060	[.763, .989]
	R^2	.247***	.101	[.074, .463]	.260***	.101	[.085, .475]	.183***	.093	[.036, .393]	.088***	.060	[.011, .463]

Note. $N = 1055$ observations across both weeks and 106 employees (Model 3). $N = 270$ observations across 54 employees for the Mindfulness Training Group (coded 1) and $N = 257$ observations across 52 employees for the Control Group (coded 0) during week 2 (Model 4). Est. = standardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. Between-person results omitted. Gelman & Rubin (1992) convergence criterion was met at 56,800 iterations.

* $p < .05$; ** $p < .01$; *** $p < .001$ (one-tailed).

Table 3.8

Multilevel Structural Equation Modeling Direct Effects of Morning Mindfulness on Afternoon Extraversion and Wellbeing (H4)

		Extraversion (PM)			Resilience (PM)			Subjective Wellbeing (PM)			Satisfaction with WLB (PM)		
	Predictor	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI
Model 3 - *Hypothesis 4a*													
Level 1	Intercept	8.658***	.925	[6.838, 10.492]	3.567**	1.288	[1.130, 6.158]	3.049**	1.173	[.924, 5.481]	2.482*	1.177	[.222, 4.809]
	Mindfulness (AM)	.136***	.034	[.069, .200]	.142***	.036	[.074, .216]	.139***	.032	[.071, .200]	.077*	.036	[.010, .150]
	Extraversion (PM)				.192***	.034	[.127, .258]	.401***	.032	[.339, .465]	.101**	.034	[.030, .163]
	L1 Residual Variance	.927***	.014	[.894, .948]	.883***	.021	[.844, .920]	.765***	.023	[.718, .806]	.926***	.015	[.896, .952]
	R^2	.073***	.014	[.052, .105]	.117***	.021	[.080, .156]	.235***	.023	[.194, .281]	.074***	.015	[.048, .104]
Model 4 - *Hypothesis 4b*													
Level 1	Intercept	8.510***	1.169	[6.402, 10.986]	2.545*	1.524	[-.218, 5.790]	2.971**	1.355	[.466, 5.781]	1.881	1.301	[-.656, 4.469]
	Mindfulness (AM)	.075	.053	[-.026, .177]	.115**	.056	[.001, .225]	.148***	.048	[.058, .244]	.040	.051	[-.057, .141]
	Extraversion (PM)				.222***	.063	[.097, .347]	.432***	.044	[.340, .509]	.166**	.054	[.054, .266]
	L1 Residual Variance	.847***	.034	[.785, .909]	.797***	.042	[.723, .879]	.711***	.037	[.640, .787]	.810***	.033	[.750, .873]
	R^2	.153***	.034	[.091, .215]	.203***	.042	[.121, .277]	.289***	.037	[.213, .360]	.190***	.033	[.127, .249]
Level 2	Mindfulness Training	.103	.084	[-.063, .266]	.083	.080	[-.072, .241]	-.023	.070	[-.160, .115]	-.021	.070	[-.157, .118]
	L2 Residual Variance	.972***	.034	[.872, .999]	.749***	.102	[.527, .922]	.834***	.087	[.634, .967]	.911***	.065	[.745, .990]
	R^2	.028***	.034	[.001, .128]	.251***	.102	[.078, .473]	.166***	.087	[.033, .366]	.089***	.065	[.010, .255]

Note. $N = 1055$ observations across both weeks and 106 employees (Model 3). $N = 270$ observations across 54 employees for the Mindfulness Training Group (coded 1) and $N = 257$ observations across 52 employees for the Control Group (coded 0) during week 2 (Model 4). Est. = standardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. Between-person results omitted. Gelman & Rubin (1992) convergence criterion was met at 55,000 iterations.

* $p < .05$; ** $p < .01$; *** $p < .001$ (one-tailed).

Table 3.9

Multilevel Structural Equation Modeling Direct Effects of Morning Mindfulness on Afternoon Conscientiousness and Wellbeing (H4)

		Conscientiousness (PM)			Resilience (PM)			Subjective Wellbeing (PM)			Satisfaction with WLB (PM)		
	Predictor	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI
Model 3 - *Hypothesis 4a*													
Level 1	Intercept	6.342***	.884	[4.682, 8.132]	4.445***	1.136	[2.287, 6.706]	4.209***	1.045	[2.250, 6.314]	1.654*	.936	[-.085, 3.563]
	Mindfulness (AM)	.131***	.038	[.054, .204]	.139***	.033	[.074, .199]	.137**	.036	[.057, .205]	.056	.036	[-.019, .120]
	Conscientiousness (PM)				.153***	.036	[.078, .216]	.370***	.033	[.307, .436]	.191***	.042	[.122, .285]
	L1 Residual Variance	.910***	.018	[.872, .938]	.867***	.019	[.827, .902]	.772***	.024	[.725, .821]	.903***	.027	[.843, .941]
	R^2	.090***	.018	[.062, .128]	.133***	.019	[.098, .173]	.228***	.024	[.179, .275]	.097***	.027	[.059, .157]
Model 4 - *Hypothesis 4b*													
Level 1	Intercept	6.863***	1.057	[4.913, 9.015]	2.949**	1.287	[.617, 5.635]	3.640***	1.188	[1.428, 6.080]	.422	.989	[-1.394, 2.492]
	Mindfulness (AM)	.126*	.054	[.018, .225]	.122**	.050	[.022, .215]	.174***	.047	[.083, .263]	.010	.048	[-.092, .090]
	Conscientiousness (PM)				.093*	.054	[-.008, .199]	.335***	.052	[.224, .428]	.226***	.058	[.110, .339]
	L1 Residual Variance	.849***	.021	[.808, .888]	.799***	.039	[.729, .881]	.741***	.032	[.669, .799]	.824***	.035	[.743, .879]
	R^2	.151***	.021	[.112, .192]	.201***	.039	[.119, .271]	.259***	.032	[.201, .330]	.176***	.035	[.121, .256]
Level 2	Mindfulness Training	-.003	.074	[-.147, .145]	.092	.078	[-.059, .246]	.013	.071	[-.126, .150]	.006	.064	[-.119, .133]
	L2 Residual Variance	.859***	.079	[.676, .976]	.762***	.098	[.553, .931]	.862***	.078	[.679, .977]	.770***	.090	[.576, .927]
	R^2	.141***	.079	[.024, .324]	.238***	.098	[.069, .447]	.138***	.078	[.023, .321]	.230***	.090	[.073, .423]

Note. $N = 1055$ observations across both weeks and 106 employees (Model 3). $N = 270$ observations across 54 employees for the Mindfulness Training Group (coded 1) and $N = 257$ observations across 52 employees for the Control Group (coded 0) during week 2 (Model 4). Est. = standardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. Between-person results omitted. Gelman & Rubin (1992) convergence criterion was met at 52,000 iterations.

* $p < .05$; ** $p < .01$; *** $p < .001$ (one-tailed).

Table 3.10

Multilevel Structural Equation Modeling Direct Effects of Morning Mindfulness on Afternoon Openness and Wellbeing (H4)

		Openness (PM)			Resilience (PM)			Subjective Wellbeing (PM)			Satisfaction with WLB (PM)		
	Predictor	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI
Model 3 - *Hypothesis 4a*													
Level 1	Intercept	6.849***	.561	[5.722, 7.943]	3.890***	1.186	[1.649, 6.272]	3.632***	1.054	[1.677, 5.821]	2.088*	1.014	[.170, 4.130]
	Mindfulness (AM)	.112***	.036	[.040, .178]	.144***	.032	[.080, .205]	.110**	.039	[.038, .187]	.049*	.029	[-.006, .111]
	Openness (PM)				.206***	.036	[.132, .273]	.359***	.042	[.276, .434]	.240***	.034	[.170, .302]
	L1 Residual Variance	.919***	.014	[.886, .942]	.828***	.019	[.785, .860]	.721***	.034	[.660, .784]	.866***	.018	[.828, .898]
	R^2	.081***	.014	[.058, .114]	.172***	.019	[.140, .215]	.279***	.034	[.216, .340]	.134***	.018	[.101, .172]
Model 4 - *Hypothesis 4b*													
Level 1	Intercept	6.172***	.624	[4.929, 7.381]	2.518**	1.173	[.416, 5.005]	2.591**	.977	[.797, 4.636]	1.232	.924	[-.473, 3.138]
	Mindfulness (AM)	.085*	.047	[-.012, .176]	.120**	.051	[.025, .224]	.143**	.047	[.045, .231]	.040	.053	[-.064, .135]
	Openness (PM)				.305***	.050	[.207, .399]	.289***	.051	[.187, .385]	.209***	.053	[.108, .311]
	L1 Residual Variance	.927***	.029	[.860, .959]	.803***	.034	[.727, .863]	.687***	.032	[.626, .750]	.781***	.027	[.724, .825]
	R^2	.073***	.029	[.041, .140]	.197***	.034	[.137, .273]	.313***	.032	[.250, .374]	.219***	.027	[.175, .275]
Level 2	Mindfulness Training	.015	.072	[-.126, .254]	.080	.075	[-.067, .227]	.003	.067	[-.122, .129]	-.004	.067	[-.134, .128]
	L2 Residual Variance	.913***	.062	[.758, .992]	.756***	.099	[.540, .921]	.666***	.092	[.490, .844]	.824***	.077	[.654, .950]
	R^2	.087***	.062	[.008, .242]	.244***	.099	[.079, .460]	.334***	.092	[.156, .510]	.176***	.077	[.050, .345]

Note. $N = 1055$ observations across both weeks and 106 employees (Model 3). $N = 270$ observations across 54 employees for the Mindfulness Training Group (coded 1) and $N = 257$ observations across 52 employees for the Control Group (coded 0) during week 2 (Model 4). Est. = standardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. Between-person results omitted. Gelman & Rubin (1992) convergence criterion was met at 65,000 iterations.

* $p < .05$; ** $p < .01$; *** $p < .001$ (one-tailed).

Table 3.11

Summary of Hypothesized Indirect Effects Across Both Weeks (H4a)

Hypothesized Indirect Effect	Est.	*SD*	95% CI
Mindfulness --> Agreeableness --> Subjective Wellbeing	.052**	.018	[.020, .092]
Mindfulness --> Agreeableness --> Satisfaction with WLB	.025*	.015	[-.003, .056]
Mindfulness --> Agreeableness --> Resilience	.043*	.022	[.001, .088]
Mindfulness --> Conscientiousness --> Subjective Wellbeing	.040*	.017	[.006, .075]
Mindfulness --> Conscientiousness --> Satisfaction with WLB	.022	.019	[-.013, .061]
Mindfulness --> Conscientiousness --> Resilience	.034	.023	[-.009, .082]
Mindfulness --> Extraversion --> Subjective Wellbeing	.045**	.016	[.015, .077]
Mindfulness --> Extraversion --> Satisfaction with WLB	.008	.013	[-.016, .035]
Mindfulness --> Extraversion --> Resilience	.025	.017	[-.007, .060]
Mindfulness --> Neuroticism --> Subjective Wellbeing	.074***	.020	[.037, .117]
Mindfulness --> Neuroticism --> Satisfaction with WLB	.035*	.019	[.002, .077]
Mindfulness --> Neuroticism --> Resilience	.126**	.033	[.055, .190]
Mindfulness --> Openness --> Subjective Wellbeing	.040*	.020	[.000, .079]
Mindfulness --> Openness --> Satisfaction with WLB	.021	.020	[-.021, .059]
Mindfulness --> Openness --> Resilience	.027	.024	[-.017, .076]

Note. $N = 1055$ observations across both weeks and 106 individuals. Est. = unstandardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. *$p < .05$ **$p < .01$ ***$p < .001$ (one-tailed).

Table 3.12

Summary of Hypothesized Total Indirect Effects Across Week 2 (Hyp 4b)

Hypothesized Indirect Effect	Est.	*SD*	95% CI
Exp. Group --> Mindfulness --> Agreeableness --> Subjective Wellbeing	.066	.059	[-.047, .187]
Exp. Group --> Mindfulness --> Agreeableness --> SWLB	.009	.028	[-.042, .069]
Exp. Group --> Mindfulness --> Agreeableness --> Resilience	.076	.072	[-.059, .226]
Exp. Group --> Mindfulness --> Conscientiousness --> Subjective Wellbeing	.015	.065	[-.111, .146]
Exp. Group --> Mindfulness --> Conscientiousness --> SWLB	.013	.046	[-.073, .108]
Exp. Group --> Mindfulness --> Conscientiousness --> Resilience	.044	.064	[-.082, .172]
Exp. Group --> Mindfulness --> Extraversion --> Subjective Wellbeing	.102	.066	[-.023, .236]
Exp. Group --> Mindfulness --> Extraversion --> SWLB	.026	.023	[-.038, .103]
Exp. Group --> Mindfulness --> Extraversion --> Resilience	.101*	.068	[-.020, .249]
Exp. Group --> Mindfulness --> Neuroticism --> Subjective Wellbeing	.092	.060	[-.021, .215]
Exp. Group --> Mindfulness --> Neuroticism --> SWLB	.035	.034	[-.027, .107]
Exp. Group --> Mindfulness --> Neuroticism --> Resilience	.151*	.094	[-.025, .345]
Exp. Group --> Mindfulness --> Openness --> Subjective Wellbeing	.059	.077	[-.090, .214]
Exp. Group --> Mindfulness --> Openness --> SWLB	.005	.061	[-.113, .130]
Exp. Group --> Mindfulness --> Openness --> Resilience	.061	.103	[-.139, .270]

Note. $N = 270$ observations across 54 employees for the Mindfulness Training Group (coded 1) and $N = 257$ observations across 52 employees for the Control Group (coded 0) during week 2. Est. = unstandardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. Exp. Group = randomly assigned experimental mindfulness training or passive control group (level 2); SWLB = Satisfaction with Work Life Balance. ** $p < .05$ ** $p < .01$ *** $p < .001$ (one-tailed).*

CHAPTER 4

DISCUSSION

Day to day, employees navigate myriad challenges that impact their wellbeing from competing work and non-work demands to newly introduced stressors that subtly drain energy (e.g., zoom fatigue, Shockley et al., 2021). Recently, individuals across diverse employee populations have struggled to keep up with demands and are experiencing heightened rates of burnout in the US and abroad (Abramson, 2022). As such, the need for evidence-based prevention, intervention, and sustainable employee wellbeing resources is imperative (Jones-Chick & Kelloway, 2021). Despite a plethora of research indicating the benefits of mindfulness in the workplace as one such resource, the literature offers less clarity about the mechanisms by which mindfulness promotes worker wellbeing – largely overlooking long-known ties between personality and wellbeing.

In this investigation, I set out to better understand the relationships between mindfulness and worker wellbeing through dynamic within-individual personality states. Conducting a two-week experience sampling study, I found support for the salutatory effects of mindfulness on state personality change and subsequent daily employee wellbeing. Confidence in the causal effect of mindfulness on personality and employee wellbeing was strengthened by the temporal separation between measures. Relationships were strongest for the mediating effects of neuroticism and agreeableness. When individuals were mindful as they started their day, they were more likely to be emotionally stable and agreeable into the evening. As a result, they were

more likely to experience greater resilience to daily stressors, greater subjective wellbeing and greater satisfaction with their work-life balance.

Although results support my predictions at the within-person level that personality states – particularly neuroticism and agreeableness – mediate the relationships between morning mindfulness and daily employee wellbeing, results of the quasi-experimental portion of the study showed minimal evidence of a the cross-level effect of the low-dose mindfulness training on mindfulness or personality states during week 2. Supplementary analyses suggest the efficacy of the mindfulness induction may have been impacted by (a) the compliance of the mindfulness group participants only fully engaging with the morning exercise 65% of the time and (b) the control group engaging in daily self-directed mindfulness activities for twice as much time as the mindfulness group participants. I extend discussion of the investigation's findings and limitations as well as implications for research and practice below.

Study Findings and Theoretical Implications

Findings from this research make noteworthy contributions to the personality and workplace wellbeing literatures. First, I offer additional evidence for the effect of state mindfulness – going beyond dispositional mindfulness – on a range of daily employee wellbeing outcomes. As expected, when individuals were more mindful in the morning, they reported greater resilience to stress, subjective wellbeing and satisfaction with work-life balance that day. Despite long-standing research supporting these relationships, this study aids in understanding how mindfulness affects employee wellbeing at a daily, within-individual level. Moreover, the temporal separation further highlights the causal effect of mindfulness on wellbeing.

More notably, I extend the research by showing the mediating effect of personality states in these known mindfulness-employee wellbeing relationships. These relationships add exciting

evidence to the dynamic personality literature and advance Whole Trait Theory (Fleeson & Jayawickreme, 2015) by identifying an antecedent to personality malleability and potentially fruitful avenue to facilitate personality change (Beckmann & Wood, 2017). Results show that afternoon states of all FFM traits – particularly neuroticism – can be partially explained by mindfulness states earlier in the day. Hence, I strengthen my proposition of mindfulness as a social-cognitive mechanism that contributes to the explanatory part of WTT (Fleeson & Jayawickreme, 2015). Moreover, the direction of the relationships suggest that mindfulness shifts personality states into levels that have been recognized and evidenced as beneficial (Anglim et al., 2020). Findings suggest that inducing greater mindfulness could help individuals experience lower levels of neuroticism and higher levels of extraversion most frequently tied to wellbeing (Bono et al., 2012; Howell et al., 2017) as well as higher levels of conscientiousness known to benefit performance (Debusscher, Hofmans, DeFruyt, 2016). If the theoretical propositions of WTT are supported (Jayawickreme et al., 2019), then by making a practice of intentionally and nonjudgmentally focusing on the present moment, people have the potential to see advantageous trait-level change in their personality through recurrent shifts in their daily personality states.

The findings of the current research also contribute to the recent advancements in studying the state-level relationships between personality and wellbeing (Anglim et al., 2020; Howell et al., 2017) by extending the relationships to the context of work. While I anticipated stronger relationships for the neuroticism and conscientiousness models, the results revealed that *all* of the FFM traits – measured as afternoon states – mediated the relationship between mindfulness and at least one daily wellbeing outcome: employee subjective wellbeing. When individuals were expressing higher levels of openness, agreeableness, extraversion and

conscientiousness along with lower levels of neuroticism, they reported higher levels of life satisfaction, job satisfaction and positive emotions.

More research at the facet level is needed to understand how each of the big five influence positive affect and evaluations of daily life and job satisfaction. Yet, the findings contribute to theoretical underpinnings of mindfulness mechanisms (Shapiro et al., 2006). The consistent significant effects on subjective wellbeing across all models suggests the shifts in the big five may be representative of the primary, 'decentering' mechanism of mindfulness (Shapiro et al., 2006). Decentering is a cognitive mechanism that produces more objective, less biased evaluations of individuals' current situation. Mindful awareness may have allowed for participants to evaluate their life, job and mood that day without previous notions of self-concept based on past experiences. Unlike subjective wellbeing, shifts in daily resilience to stress and work-life balance are more likely to require flexible behavioral responses. Where select big five states did not mediate relationships for resilience to stress and satisfaction with work-life balance, it could be said that the secondary mechanism of mindfulness, 'response flexibility,' as a behavioral mechanism, was not captured in those personality states.

Breaking down the results across the FFM, neuroticism and agreeableness were the only two traits that mediated all mindfulness-wellbeing relationships. The mediating model with agreeableness showed that when individuals were more mindful in the morning and subsequently more compassionate and polite in the afternoon, they were more likely to be happier and more satisfied with their current situation across work and life domains. In addition, they were more resilient to stressful events, reporting less agitation and greater tolerance to adversity as well as greater ease in winding down that day. As a relationally oriented trait, agreeableness states may have been stimulated by the mindfulness mechanism of decentering which researchers have seen

promotes a stronger orientation toward others (as a result of shifting focus away from a self-narrative; Hölzel et al., 2011). This may have prompted prosocial behavioral responses to be more cooperative in managing work and non-work conflicts as well as activate greater social support that is critical for bouncing back from stress. These relationships may have been particularly strong on days that individuals reported multifaceted, work-family and social stressors (e.g., "lack of sleep due to teething baby and struggling with office politics after returning to work from maternity leave"). Given previous investigations that demonstrate social manifestations of mindfulness in the form of gratitude, prosocial behavior and empathy (Hafenbrack et al., 2020; Sawyer et al., 2022), agreeableness is another logical biproduct which may have aided participants in mitigating work-related and non-work-related social conflicts on those days (Kay & Skarlicki, 2020).

Similarly, results indicated neuroticism states mediated all mindfulness-wellbeing relationships. When individuals were naturally more mindful in the morning and subsequently less volatile and withdrawn in the afternoon, they were more satisfied with their life, job and work-family balance that day and found it easier to recover from stressful events. Like agreeableness, these relationships provide support for the decentering mechanism of mindfulness in being able to focus on the present moment without negative influence of insecure self-views characteristic of neuroticism (Brown & Cordon, 2009). By providing a more objective lens to evaluate the current situation, decentering may have helped participants let go of anxious or emotionally laden perspectives of their life and work situation that day. Mindfulness may have also lessened the self-created barriers to wellbeing that come from derailing behaviors associated with being in a neurotic state by promoting greater response flexibility through less impulsivity (Brown et al., 2007). I believe the strong evidence for the mediating effect of state neuroticism

supports both the primary decentering and secondary response flexibility mechanisms of mindfulness that foster beneficial self-regulation in the workplace (Glomb et al., 2011). These results contribute to the conversation on mindfulness and dynamic personality within the organizational science domain and complement findings to a concurrent investigation in which results also highlighted state neuroticism and agreeableness as mediators in relationships between mindfulness and employee outcomes (Nübold & Hülsheger, 2021).

This study also informs research on the design, implementation and efficacy of low-dose mindfulness interventions. Failing to show that the week 2 mindfulness training intervention increased mindfulness states offers critical information on what makes shorter mindfulness interventions effective. While many features of the current study's intervention align with other effective workplace mindfulness interventions (e.g., measurement scale, multi-modal delivery materials, randomly assigned groups, MBSR-based training components; Bartlett et al., 2019; Eby et al., 2019), the training duration and session lengths were abbreviated. The results suggest the daily 5-minute mindfulness training over one week was not sufficient in altering daily mindfulness states nor end of week trait mindfulness as compared to the average 8-week courses (Eby et al., 2019). Fortunately, other intervention research indicates slightly longer low-dose training can be effective over the course of 30-days and with 10-minute guided sessions (Nübold & Hülsheger, 2021).

Additionally, given supplemental results pertaining to compliance, this study cautions future researchers from deploying fully self-directed (albeit guided) training methods without ensuring adequate buy-in and engagement from participants. More recent self-directed interventions delivered digitally and asynchronously rather than face-to-face suggest smartphone applications may increase active participation through more engaging user interface, incentive

from receiving free access to the app, and the ability to customize the program according to preferences (e.g., Headspace, Bostock Crosswell, Prather, & Steptoe, 2019; Howells, Ivtzan, & Eiroa-Orosa, 2016; Nübold & Hülsheger, 2021). The self-directed delivery of the current program also provided interesting findings around individual mindfulness practices outside of the prescribed training. Controlling for additional independent practice across both the control and mindfulness groups enhanced the efficacy of the mindfulness training in inducing state mindfulness. As such, this research highlights the importance of capturing participant experience metrics including compliance or adherence to the exercises as well as additional mindfulness practice outside of the training. In all, the current intervention findings contribute to critical reviews of mindfulness interventions with the aims to improve research in this space going forward (Jamieson & Tuckey, 2017).

Despite the lack of training effect on mindfulness, the addition of the training intervention in the mediated models produced a few notable findings. First, the training intervention had a direct effect on afternoon neuroticism after accounting for participant compliance and level of active engagement with the training. It is unclear why the mindfulness training did not induce immediate mindfulness states yet influenced neuroticism later in the day. Perhaps the training provided mindfulness group participants the capacity to emotionally regulate throughout the day or when needed. This may indicate that mindfulness training had a distinct effect on neuroticism (that had no impact on the other big five states) from that of the effect of naturally occurring state mindfulness. As such, this could inform research attempts to better understand the disconnect between the disparate effects of mindfulness' forms: dispositional, state, and training (Bravo et al., 2018).

Secondly, without accounting for compliance or practice effects, there were two total indirect effects that emerged during the intervention week indicating that afternoon state neuroticism and extraversion played a mediating role in explaining daily resilience to stress. The result for the extraversion model is surprising as the indirect effect from state mindfulness to resilience via extraversion was not significant at the within-level across both weeks. This result is notable as extraversion has stood above other individual difference traits in predicting wellbeing and flourishing at work (Bono, Davies, & Rasch, 2012) yet the current results overall yielded few significant relationships in the extraversion models. Extraversion has been linked to wellbeing via positive affect, enthusiasm and an approach-orientation which likely aided in appraising and actively resolving stressors during week 2 (Bono et al., 2012). It is possible that contextual factors in week 2 such as particular stressful events activated salutatory extraverted states which would point to the need to account for situational factors in future research.

Limitations and Future Research Directions

Despite the comprehensive nature of the current study, there are several limitations to account for when considering its findings. The first limitation pertains to the lack of diverse representation in the participant sample as most participants were White (83%) and women (74%). Additionally, the sample was highly educated with 90% of people holding at least a 4-year degree, half of which reported having a graduate degree (45%). The sample homogeneity limits my ability to extend findings beyond these groups and generalizations of the research will apply mostly to highly educated white women. This could be influencing the strength of relationships arising for the neuroticism and agreeableness models as research has shown that women, on average, score higher on FFM measures of agreeableness and neuroticism (Chapman et al., 2007; Costa, Terracciano & McCrae, 2001). Another limitation of this study was the sole

use of self-report measures and their potential to inject same-source bias into the results (Podsakoff et al., 2003). Although self-report measures are typically used in ESM research and in measuring less observable internal states of mindfulness, personality and subjective wellbeing, further research could strengthen the current findings through other-report data of outcomes such as spousal reports of work-life balance (e.g., van Steenbergen, Kluwer, & Karney, 2014).

Although not severe limitations, there are three additional considerations to take in evaluating the impact of this research that in turn, open fruitful avenues for future research.

Contextual Factors. First, this research intentionally omitted contextual factors (e.g., situational strength) in the present investigation because further understanding of the current relationships was required as a precursor to examining situational influence. As a result, the results overlooked the unusual and salient context of COVID-19 affecting all participants in the study. The data were collected during the first alpha-variant wave of the pandemic and most participants (75%) were working from home and adapting to the new challenges that presented. In open-ended descriptions of daily stressors and in the follow-up survey, many reported experiencing unusual working conditions and additional stressors compared to their pre-pandemic situation. Although there is little evidence yet to suggest the relationships between personality and wellbeing were moderated by acute conditions of the pandemic (e.g., stay at home restrictions), there is some evidence that extraversion had a reduced effect on positive affect during a period of lockdown (Anglim & Horwood, 2021). This could explain the fewer than expected significant relationships found in the extraversion models. There was also a heavy focus during the initial months of the pandemic on adaptability and stress management as well as providing humanistic and empathetic support for coworkers. As such, mechanisms described by

Trait Activation Theory might suggest that neuroticism and agreeableness were particularly activated during this extraordinary period of time (Tett & Burnett, 2003).

I recommend taking a contextual approach in future research on mindfulness and personality in the workplace to fully marry the trait and social-cognitive theories of personality. Capturing either naturally occurring or experimentally manipulated contextual features will be necessary in confirming mindfulness as a socio-cognitive antecedent to the explanatory part of WTT as Fleeson and Jayawickreme (2015) state the explanatory part is subject to situational features that evoke variation of the trait. Research to date has examined task-related situational cues (e.g., task urgency, importance, and difficulty) in predicting situation contingent personality states and subsequent performance (Wood et al., 2019). Yet, situational cues evoking emotional stability and agreeableness for wellbeing are likely to be more varied. Moreover, the situation-trait debate has been introduced to the mindfulness literature as researchers posit that mindfulness may not be an inherent trait but rather influenced by situational cues like attentional pull of tasks (Reina & Kudesia, 2020). Therefore, there could be overlooked situational factor(s) that prompted more or less mindfulness in individuals (on mornings without a mindfulness exercise) that proceeded to influence personality states and wellbeing that day.

Facet-level Relationships. Like the choice to omit contextual factors, I chose to first explore the relationships at the broad domain level of personality and mindfulness in the current study to make way for more specific facet-level examinations. Like others have noted (Howell et al., 2017), research that examines all of the big five simultaneously forgoes the rich facet-level information that can provide more actionable insight. Extraversion, for example, presents an interesting case for facet-level investigation with mindfulness as both extraversion and mindfulness are linked to wellbeing, yet mindfulness is more likely to evoke the enthusiasm

facets of extraversion and have null or opposite effects on the assertive and high activity-based facets (Giluk, 2009). Future research focused on one or two of the FFM traits would contribute greater understanding of implications at the facet level. In fact, a recent meta-analytic investigation found incremental prediction of wellbeing by personality facets beyond the domain level traits (Anglim et al., 2020).

In addition to extraversion, neuroticism is also prime for more concentrated research as people with higher trait neuroticism have greater within-person variability in personality states (Judge et al., 2014). Therefore, neuroticism might play a dual role in the relationships in this research – both mediating the relationship between mindfulness and wellbeing, but also affecting the dynamic nature of the other personality states. Facet-level relationships could also show how the mindfulness mechanisms discussed here affect neuroticism facets. For example, I expect decentering is likely to assuage anxious and insecure cognitions while response flexibility decreases impulsivity – in turn, aligning the mechanisms with DeYoung and colleagues' (2007) facet structure of neuroticism.

Intervention Design Limitations. As mentioned, the mindfulness intervention design in the current research lacked manipulation strength to effectively induce mindfulness states. There are several factors that may have reduced the training efficacy. First, the one-week duration of the intervention falls short of typical 4- to 8-week mindfulness interventions (Eby et al., 2019). Second, the 5-minute mindfulness meditation practices were also shorter as more recent research has found better success with 10-minute session lengths or varied session lengths that increase as participants become more familiar (e.g., Bostock et al., 2019). Low-dose mindfulness intervention designs are important for delivering training at scale and in more cost-effective ways, and further reviews of both successful and non-successful programs are needed to

determine how ‘low you can go’. In conducting these reviews in the future, I recommend researchers source both published and unpublished, filed research to learn from training interventions that failed to produce intended effects.

Third, I believe the educational component of the current intervention in the email leading up to the week of mindfulness exercises was understated. Most face-to-face mindfulness interventions spanning weeks include more involved educational components (e.g., live lectures) beyond sharing informational materials to teach individuals about mindfulness including what it means to engage in a mindfulness practice (Eby et al., 2019). Evidence that more detailed education surrounding mindfulness is needed appeared in the two additional confounding factors: (a) self-reported compliance to the prescribed training and (b) self-directed, independent practice outside of the prescribed training. Given that mindfulness group participants reported half-heartedly engaging with or skipping the morning practice 35% of the time, there is a significant opportunity to increase engagement with the exercises by better informing participants of the benefit of the training and that listening while doing other things (i.e., attempting to multitask) negates that benefit.

Additionally, tracking independent practice from control and mindfulness group participants outside of the training introduced another factor that influenced the effectiveness of the intervention. Albeit non-significant, the relationship between daily practice duration and morning state mindfulness was in the negative direction. The more time individuals spent on daily self-directed mindfulness practice, the less mindful they were. This surprising result requires further examination but could be explained due to self-report of activities that weren’t actually mindful. For example, some participants reported their time spent engaging in spiritual prayer. Praying can be a mindful, reflective activity but can also be judgement-laden and

therefore, not mindful, particularly if anxiously asking for certain prayers to be answered or ruminating on past mistakes and therefore, asking for forgiveness. Other reported activities included time spent exercising (e.g., running) which again can be mindful if focusing on the sensations in the moment (e.g., attention to breathing, physical sensation of each foot hitting the pavement). However, it would not be considered mindful if the mind is wandering or not focused on the present while running. As such, considering the growing commercial market for mindfulness, it is crucial for further research to incorporate in-depth educational components and to investigate whether people are actually practicing mindfulness in its true beneficial form.

Exploration of other research suggest other factors that could have affect mindfulness-based training interventions and deserve further attention. While the current study focused on within-person states, other researchers suggest individual differences at the between level like personality may alter the impact of mindfulness training (Tang & Braver, 2020). Conscientiousness, in particular, has been identified as a common culprit of indirectly enhancing training studies through greater participant motivation to learn and adherence to training instructions (Tang & Braver, 2020). As such, my findings from the supplemental reverse causal analyses deserve further attention regarding the relationships between conscientiousness, mindfulness and wellbeing. Future research should examine the two-way relationships between mindfulness and personality traits (e.g., neuroticism) and if trait-level differences like conscientiousness impact the efficacy of the training.

This also points to another individual difference that could have strengthened the effects of the mindfulness intervention on personality states: individual motivation to change their personality. Previous intervention research by Hudson and Fraley (2015) found that expression of specific behavior-based goals attributed to the Big give contributed to volitional trait-level

increases in conscientiousness, extraversion and emotional stability. Therefore, asking participants in future research to express and commit to goals related to trait-specific change may enhance the effectiveness of mindfulness-based training on inducing personality states. Moreover, researchers have recently begun to ask who and how many people have this meta-cognitive awareness of their personality and want to change and if so, why they want to change (Baranski et al., 2021; Thielmann & de Vries, 2021). Baranski and colleagues (2021) found there is indeed a case for volitional personality change with 60.4% of their 13,278-person sample claiming that they are currently attempting to change their personality. The desire to increase emotional stability was a common goal which magnifies the importance of the current study's findings. There are also individual differences in why people want to change their personality including for socially desirable purposes as well as more intrinsic, values-driven purposes (Thielmann & de Vries, 2021). Further research incorporating both the degree of desire to change as well as the motivational driver of change could greatly inform the benefit of mindfulness-based personality change interventions.

Finally, interdisciplinary efforts to marry the research on behavioral science and mindfulness could prove a fruitful avenue for future research efforts to develop effective *and sustainable* mindfulness habits in the workplace. For example, research on mindfulness-amplified practices that aid in building wellbeing promoting habits (e.g., taking breaks) and breaking wellbeing inhibiting habits (e.g., checking emails late at night or on weekends) could advance the practical recommendations for mindfulness-based workplace wellbeing programs. In fact, there is initial evidence that suggests daily intention setting and self-monitoring can aid in disrupting undesirable workplace habits and promoting alternative behaviors for a better work experience (Sonnentag, Wehrt, Weyers, & Law, 2022). Technology can serve as a critical tool

for disrupting poor habits as well as building and sustaining mindfulness-based wellbeing habits, yet more research is needed to determine best methods of personalizing frequency, timing, and content of cues to sustain habit change into long-term trait change (Hermsen, Frost, Renes, & Kerkhof, 2016). Foundations and latest advancements in nudge theory (Thaler & Sunstein, 2008) - including research on effective technology-enabled behavioral nudges - could help to inform scheduled or event-triggered cues with a recommended approach to engender a mindful or salutatory personality state. Taken together, the future of mindfulness-based intervention research presents exciting opportunities to explore the unique and combined effects of goal setting, nudge-based technology-delivered cues and mindfulness-based habits for improving workplace wellbeing.

Practical Implications

This research presents noteworthy implications for practice. Findings from this study offer organizations and individual employees a new framework for professional and personal growth and wellbeing. Coaches and managers within organizations can help individual employees to understand that personality is malleable. Educating individuals on the dynamic nature of personality and the benefits of expressing aspects of personality traits can help them move past limitations of a rigid self-concept. In turn, individuals can gain a sense of autonomy over their own default personality and subsequent wellbeing on a day-to-day basis (Hudson & Fraley, 2015). Integrating mindfulness mechanisms like ‘decentering’ and ‘flexible responding’ as relatable concepts into these efforts can further help individuals proactively shift into desired personality states in order to evaluate their wellbeing objectively and respond advantageously to stressors. Organizations looking to support their employees’ wellbeing should invest in longer-term programs that equip employees with (1) an opportunity to gain self-awareness of their

default individual differences as a baseline (e.g., personality assessment), (2) coaching from a manager or external professional debriefing their assessment and how their typical styles may be impacting their wellbeing, and (3) practical, self-administrable tools to aid in volitional personality change (e.g., mindfulness-based training or smartphone applications).

Although the mindfulness training experiment in this study failed to promote state mindfulness, it does not diminish the pre-existing research demonstrating the effectiveness of other mindfulness-based training programs (Bartlett et al, 2019; Lomas et al., 2018). The factors that likely contributed to its ineffectiveness discussed previously can inform the design of more conducive programs in current corporate mindfulness initiatives. From the current research, I recommend practitioners designing mindfulness-based programs deliver longer exercises over the course of more than one week and to put measures in place to gain buy-in and commitment from participants. Mindfulness practitioners and coaches in organizations should convey the importance of regular practice, offer education and guided training on what mindfulness is and how to integrate it into work routines. This should include caution of practices that may be popular in mainstream media (e.g., mindful coloring) but are not mindful if the individual is not practicing intentional, nonjudgmental awareness on the present moment (e.g., if they are ruminating or thinking of future tasks while coloring). Continued collaboration between mindfulness academics and practitioners is needed to track and review all evaluated mindfulness training programs to update best practice when designing new programs.

Moreover, organizations and practitioners should not make tradeoffs, forgoing core components and teachings of mindfulness in attempts to implement cost-effective, feasible and less intrusive mindfulness programs. Organizations should be cautious to offer one-off sessions without properly educating their employees on what mindfulness is and why it’s important.

Other mindfulness scholars have voiced similar cautions as mindfulness evolves away from its Buddhist teachings and shifts closer to a fad, band-aid corporate solution (Nübold & Hülscheger, 2021; Van Dam et al., 2018). However, there is hopeful evidence surrounding secular training programs that retain the rigor of effective long-term programs (e.g., MBSR, Kabat-Zinn, 1990) yet are delivered digitally in shorter exercises (Bostock et al., 2019). As remote work continues to common practice in feasible professions, there is a greater need to increase adherence to digitally delivered intervention programs (Nahum-Shani et al., 2022). This is critical for improving the physical and psychological health of desk and deskless workers alike (Hesketh, 2021). Behavioral science research on technology-enabled habit formation could provide useful techniques to encourage uptake and better engage people in regular practice until mindfulness training becomes a routine.

Conclusion

Through this research, I have demonstrated the effect of mindfulness on state personality change and subsequent daily employee wellbeing. Being more mindful in the morning is associated with subjectively more positive levels of all FFM personality traits – particularly neuroticism and agreeableness – in the afternoon. However, inefficacious results of the experiment during week 2 reveal greater need to understand the factors that make a low-dose mindfulness training program engaging and effective. Nonetheless, it is promising to see that active engagement in as little as 5-minutes of mindfulness meditation may afford individuals greater emotional stability which aids in their resilience to stress that day. Findings and limitations from this research point to fruitful avenues for continued exploration of mindfulness as a part of behavioral interventions on dynamic personality states. To foster wellbeing, individuals and organizations should place greater emphasis on building mindfulness as a regular

habit by increasing education of the practices that effectively induce a present, nonjudgmental awareness on the present moment.

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APPENDICES

Appendix A: Baseline & Follow-up Measures

Mindfulness Attention & Awareness Scale (MAAS; Brown & Ryan, 2003)

1	I could be experiencing some emotion and not be conscious of it until sometime later.
2	I break or spill things because of carelessness, not paying attention, or thinking of something else.
3	I find it difficult to stay focused on what's happening in the present.
4	I tend to walk quickly to get where I'm going without paying attention to what I experience along the way.
5	I tend not to notice feelings of physical tension or discomfort until they really grab my attention.
6	I forget a person's name almost as soon as I've been told it for the first time.
7	It seems I am "running on automatic" without much awareness of what I'm doing.
8	I rush through activities without being really attentive to them.
9	I get so focused on the goal I want to achieve that I lose touch with what I am doing right now to get there.
10	I do jobs or tasks automatically, without being aware of what I'm doing.
11	I find myself listening to someone with one ear, doing something else at the same time.
12	I drive places on "automatic pilot" and then wonder why I went there.
13	I find myself preoccupied with the future or the past.
14	I find myself doing things without paying attention.
15	I snack without being aware that I'm eating.

Resiliency **(**CD-RISC-10; Campbell-Sills & Stein, 2007)

1	I am able to adapt when changes occur.
2	I can deal with whatever comes my way.
3	I try to see the humorous side of things when I am faced with problems.
4	Having to cope with stress can make me stronger.
5	I tend to bounce back after illness, injury or other hardships.
6	I believe I can achieve my goals, even if there are obstacles.
7	Under pressure, I stay focused and think clearly.
8	I am not easily discouraged by failure.
9	I think of myself as a strong person when dealing with life's challenges and difficulties.
10	I am able to handle unpleasant or painful feelings like sadness, fear, and anger.

Big Five Inventory (BFI; John & Srivastava, 1999)

1	Is talkative	23	Tends to be lazy (R)
2	Tends to find fault with others (R)	24	Is emotionally stable, not easily upset (R)
3	Does a thorough job	25	Is inventive
4	Is depressed, blue	26	Has an assertive personality
5	Is original, comes up with new ideas	27	Can be cold and aloof (R)
6	Is reserved (R)	28	Perseveres until the task is finished
7	Is helpful and unselfish with others	29	Can be moody
8	Can be somewhat careless (R)	30	Values artistic, aesthetic experiences
9	Is relaxed, handles stress well (R)	31	Is sometimes shy, inhibited (R)
10	Is curious about many different things	32	Is considerate and kind to almost everyone
11	Is full of energy	33	Does things efficiently
12	Starts quarrels with others (R)	34	Remains calm in tense situations (R)
13	Is a reliable worker	35	Prefers work that is routine (R)
14	Can be tense	36	Is outgoing, sociable
15	Is ingenious, a deep thinker	37	Is sometimes rude to others (R)
16	Generates a lot of enthusiasm	38	Makes plans and follows through with them
17	Has a forgiving nature	39	Gets nervous easily
18	Tends to be disorganized (R)	40	Likes to reflect, play with ideas
19	Worries a lot	41	Has few artistic interests (R)
20	Has an active imagination	42	Likes to cooperate with others
21	Tends to be quiet (R)	43	Is easily distracted (R)
22	Is generally trusting	44	Is sophisticated in art, music, or literature

Affect (PANAS; Watson, Clark, & Tellegen, 1988)

1	Interested	11	Irritable
2	Distressed	12	Alert
3	Excited	13	Ashamed
4	Upset	14	Inspired
5	Strong	15	Nervous
6	Guilty	16	Determined
7	Scared	17	Attentive
8	Hostile	18	Jittery
9	Enthusiastic	19	Active
10	Proud	20	Afraid

Job Satisfaction (MOAQ-JSS; Cammann et al., 1983)

1	All in all, I am satisfied with my job.
2	In general, I don’t like my job.
3	In general, I like working here.

Big Five Markers (Goldberg, 1992)

1	Artistic	23	Anxious	45	Organized
2	Creative	24	Emotional	46	Practical
3	Deep	25	Envious	47	Prompt
4	Imaginative	26	Unemotional	48	Sloppy
5	Innovative	27	Extraverted	49	Systematic
6	Intellectual	28	Introverted	50	Thorough
7	Introspective	29	Quiet	51	Careful
8	Philosophical	30	Reserved	52	Careless
9	complex	31	Shy	53	Harsh
10	Unsophisticated	32	Talkative	54	Helpful
11	Unreflective	33	Timid	55	Kind
12	Uninquisitive	34	Assertive	56	Pleasant
13	Simple	35	Bold	57	Rude
14	Anxious	36	Daring	58	Selfish
15	Emotional	37	Energetic	59	Sympathetic
16	Envious	38	Unadventurous	60	Generous
17	Unemotional	39	Withdrawn	61	Agreeable
18	Unexcitable	40	Conscientious	62	Considerate
19	Fearful	41	Disorganized	63	Cooperative
20	High-strung	42	Haphazard	64	Trustful
21	Insecure	43	Inconsistent	65	Warm
22	Irritable	44	Neat		

Life Satisfaction (Diener et al., 1985)

1	In most ways my life is close to my ideal.
2	The conditions of my life are excellent.
3	I am satisfied with my life.
4	So far, I have gotten the important things I want in life.
5	If I could live my life over, I would change almost nothing.

Work-family balance (Valcour, 2007)

On average, how satisfied are you with the following…	
1	the way you divide your time between work and personal or family life.
2	the way you divide your attention between work and home.
3	how well your work life and your personal or family life fit together.
4	your ability to balance the needs of your job with those of your personal or family life.
5	the opportunity you have to perform your job well and yet be able to perform home-related duties adequately

*Note: “family life” was altered to read “personal or family life”

Appendix B: Daily Measures

Indicate the extent to which you agree with the following items **over the previous 4 hours today**.

Mindfulness Attention & Awareness Scale (MAAS; Brown & Ryan, 2003)

1	I found it difficult to stay focused on what was happening in the present.
2	It seemed I am "running on automatic" without much awareness of what I was doing.
3	I rushed through activities without being really attentive to them.
4	I performed jobs or tasks automatically, without being aware of what I was doing.
5	I found myself preoccupied with the future or the past.

Big Five Markers (Goldberg, 1992)

1	Helpful	14	Bold
2	Pleasant	15	Energetic
3	Sympathetic	16	Anxious
4	Cooperative	17	Emotional
5	Trustful	18	Insecure
6	Organized	19	Irritable
7	Practical	20	Relaxed
8	Prompt	21	Artistic
9	Thorough	22	Creative
10	Careful	23	Imaginative
11	Reserved	24	Intellectual
12	Talkative	25	Introspective
13	Assertive		

Subjective Wellbeing

1	I am satisfied with my life (Life Sat; Diener et al., 1985)
2	All in all, I am satisfied with my job (Job Sat; MOAQ-JSS; Cammann et al., 1983)

(Positive Affect; PANAS; Watson, Clark, & Tellegen, 1988)

3	Excited
4	Enthusiastic
5	Inspired
6	Proud

Work-family Balance (Fisher, Matthews & Gibbons, 2016)

1	In general, I feel that I have an adequate balance between my work and personal/family life

Resilience	
Stress (DASS; Lovibond & Lovibond, 1993)	
Today…	
1	I found it hard to wind down (RS)
2	I found myself getting agitated (RS)
3	I felt that I was rather touchy (RS)
4	I was intolerant of anything that kept me from getting on with what I was doing (RS)

APPENDIX C: Results of Supplemental Analysis of Training Manipulation Strength

Total indirect effects of the hypothesized relationships (Hypothesis 4b) with the revised between level mindfulness intervention variable. In this model tested, the effect of the mindfulness training during week two is captured at the between level as the average degree to which individuals engaged with the mindfulness training exercise across week 2. Participant engagement was a daily self-report question to check compliance and was coded as 0 (control group and those who reported not listening to the mindfulness exercise audio at all), 1 (mindfulness group participants who listened to the audio while also doing something else), 2 (mindfulness group participants who listened and followed along to a part of the exercise but not all of it) and 3 (mindfulness group participants who listened and engaged with the full recording). The daily compliance score was averaged by cluster (individual) and entered into the model at level 2 replacing the between level group comparison of experimental group (coded 1) and control group (coded 0). It serves as a more nuanced manipulation strength variable to account for the lack of compliance amongst some experimental group participants.

Summary of Indirect Effects of Mindfulness Training Across Week 2

Total Indirect Effects	Est.	*SD*	95% CI
Intervention Strength --> Agreeableness --> Subjective Wellbeing	.014	.019	[-.022, .053]
Intervention Strength --> Agreeableness --> SWLB	.004	.007	[-.007, .019]
Intervention Strength --> Agreeableness --> Resilience	.015	.021	[-.025, .059]
Intervention Strength --> Conscientiousness --> Subjective Wellbeing	.013	.019	[-.023, .054]
Intervention Strength --> Conscientiousness --> SWLB	.009	.014	[-.016, .039]
Intervention Strength --> Conscientiousness --> Resilience	.004	.011	[-.012, .032]
Intervention Strength --> Extraversion --> Subjective Wellbeing	.028	.021	[-.013, .071]
Intervention Strength --> Extraversion --> SWLB	.008	.009	[-.004, .030]
Intervention Strength --> Extraversion --> Resilience	.020	.018	[-.010, .061]
Intervention Strength --> Neuroticism --> Subjective Wellbeing	.037*	.019	[.002, .078]
Intervention Strength --> Neuroticism --> SWLB	.011*	.009	[-.001, .034]
Intervention Strength --> Neuroticism --> Resilience	.061*	.031	[.004, .127]
Intervention Strength --> Openness --> Subjective Wellbeing	.002	.026	[-.050, .054]
Intervention Strength --> Openness --> SWLB	.001	.020	[-.038, .042]
Intervention Strength --> Openness --> Resilience	.003	.036	[-.069, .075]

Note. $N = 270$ observations across 54 employees for the Mindfulness Training Group and $N = 257$ observations across 52 employees for the Control Group (coded 0) during week 2. Est. = unstandardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. Intervention Strength = the degree to which participants engaged in the mindfulness intervention across the second week (individual average entered at level 2); SWLB = Satisfaction with Work Life Balance.
** $p < .05$ ** $p < .01$ *** $p < .001$ (one-tailed).*

Supplemental Analysis - Summary of Hypothesized Total Indirect Effects Across Week 2 (4b)

Hypothesized Indirect Effect	Est.	*SD*	95% CI
Int. Strength --> Mindfulness --> Agreeableness --> Subjective Wellbeing	.037	.033	[-.023, .107]
Int. Strength --> Mindfulness --> Agreeableness --> SWLB	-.001	.013	[-.024, .027]
Int. Strength --> Mindfulness --> Agreeableness --> Resilience	.036	.047	[-.063, .124]
Int. Strength --> Mindfulness --> Conscientiousness --> Subjective Wellbeing	.003	.033	[-.064, .067]
Int. Strength --> Mindfulness --> Conscientiousness --> SWLB	.022	.031	[-.039, .079]
Int. Strength --> Mindfulness --> Conscientiousness --> Resilience	.029	.036	[-.035, .109]
Int. Strength --> Mindfulness --> Extraversion --> Subjective Wellbeing	.046	.032	[-.016, .113]
Int. Strength --> Mindfulness --> Extraversion --> SWLB	.005	.028	[-.050, .057]
Int. Strength --> Mindfulness --> Extraversion --> Resilience	.031	.038	[-.046, .107]
Int. Strength --> Mindfulness --> Neuroticism --> Subjective Wellbeing	.053	.034	[-.012, .121]
Int. Strength --> Mindfulness --> Neuroticism --> SWLB	.026	.024	[-.019, .076]
Int. Strength --> Mindfulness --> Neuroticism --> Resilience	.092*	.049	[.003, .194]
Int. Strength --> Mindfulness --> Openness --> Subjective Wellbeing	.015	.037	[-.062, .087]
Int. Strength --> Mindfulness --> Openness --> SWLB	-.010	.032	[-.072, .054]
Int. Strength --> Mindfulness --> Openness --> Resilience	.004	.045	[-.084, .094]

Note. $N = 270$ observations across 54 employees for the Mindfulness Training Group and $N = 257$ observations across 52 employees for the Control Group (coded 0) during week 2. Est. = unstandardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. Int. Strength = the degree to which participants engaged in the mindfulness intervention across the second week (individual average entered at level 2); SWLB = Satisfaction with Work Life Balance. * $p < .05$ ** $p < .01$ *** $p < .001$ (one-tailed).

Supplemental Analysis

Multilevel Structural Equation Modeling Direct Effects of Morning Mindfulness on Afternoon Neuroticism and Wellbeing (H4)

		Neuroticism (PM)			Resilience (PM)			Subjective Wellbeing (PM)			Satisfaction with WLB (PM)		
	Predictor	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI	Est.	*SD*	95% CI
Model 3 - *Hypothesis 4a*													
Level 1	Intercept	7.961***	.529	[7.051, 9.146]	11.968***	1.282	[9.364, 14.395]	8.963***	1.261	[6.293, 11.217]	7.230***	1.179	[4.738, 9.311]
	Mindfulness (AM)	-.218***	.033	[-.277, -.149]	.063*	.034	[.004, .131]	.101**	.032	[.034, .160]	.040	.035	[-.033, .104]
	Neuroticism (PM)				-.460***	.030	[-.515, -.397]	-.358***	.033	[-.422, -.291]	-.164***	.034	[-.233, -.097]
	L1 Residual Variance	.903***	.016	[.872, .934]	.745***	.026	[.696, .805]	.767***	.022	[.721, .810]	.895***	.018	[.858, .928]
	R^2	.097***	.016	[.066, .128]	.255***	.026	[.195, .303]	.233***	.022	[.189, .279]	.105***	.018	[.072, .142]
Model 4 - *Hypothesis 4b - Supplemental Analysis*													
Level 1	Intercept	8.039***	.653	[6.840, 9.480]	9.944***	1.545	[7.070, 13.177]	8.110***	1.431	[5.080, 10.705]	7.146***	1.375	[4.339, 9.755]
	Mindfulness (AM)	-.164**	.050	[-.259, -.064]	.035	.052	[-.064, .137]	.093*	.047	[.002, .184]	.004	.049	[-.088, .107]
	Neuroticism (PM)				-.422***	.045	[-.500, -.319]	-.362***	.048	[-.457, -.266]	-.121*	.057	[-.229, -.007]
	L1 Residual Variance	.860***	.034	[.797, .925]	.712***	.036	[.637, .777]	.706***	.035	[.629, .767]	.900***	.031	[.840, .957]
	R^2	.140***	.034	[.075, .203]	.288***	.036	[.222, .363]	.294***	.035	[.233, .371]	.100***	.031	[.043, .160]
Level 2	Mindfulness Training	-.143*	.068	[-.275, -.010]	.020	.069	[-.114, .158]	-.061	.075	[-.205, .091]	-.019	.071	[-.156, .121]
	L2 Residual Variance	.628***	.104	[.411, .823]	.404***	.115	[.199, .653]	.931***	.060	[.769, .993]	.823***	.083	[.635, .955]
	R^2	.372***	.104	[.177, .589]	.596***	.115	[.347, .801]	.069***	.060	[.007, .230]	.177***	.083	[.045, .365]

Note. $N = 1055$ observations across both weeks and 106 employees (Model 3). $N = 270$ observations across 54 employees for the Mindfulness Training Group (coded 1) and $N = 257$ observations across 52 employees for the Control Group (coded 0) during week 2 (Model 4). Est. = standardized path coefficient; *SD* = standard deviation of the posterior distribution; CI = 95% credibility interval. Between-person results omitted. Gelman & Rubin (1992) convergence criterion was met at 55,000 iterations.

* $p < .05$; ** $p < .01$; *** $p < .001$ (one-tailed).