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Helping Employees Help the Environment: An Intervention to Increase Environmental Organizational Citizenship Behaviors (OCB-E) Via a Subtle Stimulus

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**HELPING EMPLOYEES HELP THE ENVIRONMENT: AN INTERVENTION TO
INCREASE ENVIRONMENTAL ORGANIZATIONAL CITIZENSHIP BEHAVIORS
(OCB-E) VIA A SUBTLE STIMULUS**

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ABSTRACT

HELPING EMPLOYEES HELP THE ENVIRONMENT: AN INTERVENTION TO INCREASE ENVIRONMENTAL ORGANIZATIONAL CITIZENSHIP BEHAVIORS (OCB-E) VIA A SUBTLE STIMULUS

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Researchers' understanding of the relationships between environmentally-oriented organizational citizenship behaviors (i.e., OCB-Es) and other workplace variables have improved since the turn of the century, but both our comprehension of the behaviors and the effectiveness of interventions targeting them require much more investigation. Further, there is very little research that examines the role of positive affect in promoting these behaviors, even though scholars have suggested that it may be the "silver bullet" (Kals & Müller, 2012) to facilitating employees' voluntary environmental actions. To that end, the aim of the current research is to take an initial step towards understanding how organizations can use a subtle affective stimulus intervention to increase employees' OCB-Es, as well as how stable personality traits may moderate this relationship. The current experimental field-study was designed to increase OCB-Es via repeated exposure to a positively valenced subtle stimulus (i.e., a picture of a person smiling). In addition to examining positive affect as a mediator of this relationship, I also investigated how certain personality traits (i.e., openness to experience and conscientiousness) may both moderate the relationship between positive affect and OCB-Es and directly affect them.

Although neither the proposed relationship between the subtle stimulus and positive affect nor the indirect effect of the stimulus on OCB-Es via positive affect for two of the three performance dimensions were supported, results did demonstrate a mediation effect of the

smiling picture on eco-initiative OCB-Es via positive affect. Additionally, the path analytic results found a direct relationship between openness to experience and eco-civic engagement OCB-Es, and a moderation effect of openness on the relationship to positive affect and eco-initiative OCB-Es. Unfortunately, the direct and moderation effects for conscientiousness and OCB-Es failed to demonstrate significance. Theoretical and practical implications, limitations, and future directions based on these findings are discussed.

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CHAPTER I

INTRODUCTION

The energy consumption and waste produced by commercial enterprises may be responsible for as much as 60% of man-made climate change (Loria, 2015). Thus far, the vast majority of psychological research related to environmental sustainability consists of studying habits for individuals' personal lives and/or in the home (Lo, 2015). While that is obviously an important pursuit in its own right, there is still much work to be done concerning a setting in which most adults spend the majority of their time: the workplace. This is a troubling gap, as societal pressure increasingly trends toward "going green". Further, to the extent that organizations have felt this push they have largely responded by making changes at the firm-level (e.g., constructing LEED certified offices) to the exclusion of considering the benefits of a bottom-up approach. This is unfortunate, as actions at the individual level also provide a myriad of benefits, such as reducing operational costs, enhancing firm reputation, improving employee satisfaction, and even reducing turnover rates (Boiral, 2009; Lamm, Tosti-Kharas, & Williams, 2013).

When organizations do attempt to reduce their carbon footprint by enacting policies at the employee level, they may require employees to integrate pro-environmental behaviors (PEBs) into their routines as part of a job duties or organizational expectations (e.g., a construction company requiring its architects to design houses for customers that include a solar paneled roof). Such required behaviors comprise 13-29% of the total number of employee PEBs (Hill, Ones, Dilchert, Wiernik, Klein, & D'Mello, 2011; Ones & Dilchert, 2012). This means that the majority of workplace PEBs (i.e., 71-77%) are voluntary, and may be conceptualized as

organizational citizenship behaviors directed toward environmental improvement that are not rewarded or required (i.e., OCB-Es; Daily, Bishop, & Govindarajulu, 2009).

The current work focuses on OCB-Es because, as mentioned, they are more prevalent in the workplace and under employees' control to a larger degree than required PEBs. Exclusively targeting OCB-Es rather than multiple behavioral outcomes in the currently proposed intervention should allow for a deep level of insight into the effectiveness of using a subtle stimulus to increase environmentally sustainable behaviors. This includes investigating a potential underlying mechanism that is both common to the employee experience and salient in the workplace (i.e., positive affect).

To that end, the proposed experimental field study seeks to address several research questions. First, is it possible to influence employees' OCB-Es using subtle stimuli? Can this be accomplished by inducing a positive affective state? Additionally, as the effects of a given stimulus may vary from person to person, how might more stable, dispositional traits influence both which employees are more likely to perform OCB-Es in general, as well as moderate the relationship between positive affect and these behaviors?

Given these research aims, the current study hopes to make several potential contributions. First, while organizational researchers' understanding of the relationships between workplace PEBs and other variables has rapidly improved in recent years (Boiral, Paillé, & Ranieri, 2015), there are still comparatively few interventions targeting them, and none, to this author's knowledge, that specifically focus on OCB-Es. This gap may be due, in part, to the assumption that research has already covered voluntary PEBs in other contexts. However, the unique conditions found in organizational settings (e.g., inability to control the thermostat) make it difficult to directly apply findings from empirical studies related to environmental

sustainability in other settings to the workplace (Lo, 2015). Thus, an empirical investigation of a targeted OCB-E intervention should help fill critical gaps in the current body of research on this topic.

Further, the studies of workplace PEBs that do exist produce underwhelming findings (Unsworth, Dmitrieva, & Adriasola, 2013). Weak results may stem, in part, from the idea that the decision to engage in PEBs is typically motivated by weighing the benefits of nebulous, long-term environmental concerns against more demanding, short-term, personal interests (Lo, 2015; Renwick, Jabbour, Müller-Camen, Redman, & Wilkinson, 2016). Unobtrusively building employees' personal resources (i.e., via positive affect) may increase the likelihood that voluntary OCB-Es become part of daily routines, but such a notion has not yet been put to the empirical test. To that end, another primary aim of this proposed study is to examine the effectiveness of using a subtle stimulus to increase employees' OCB-Es.

Tangentially, according to Ones and Dilchert (2012), "modeling pro-environmental performance in ways similar to those used by I-O psychologists to model job performance... may be especially useful" (pg. 455). Thus, another goal of the current study is to answer the call from previous research (Andersson, Jackson, & Russell 2013; Verdugo, 2012; Ones & Dilchert, 2012) to advance the integration of OCB-Es into organizational literature by developing a deeper understanding of employees' positive affect and its relevance to OCB-Es. Previous research (e.g., Hu, Xan, Yao, & Garden, 2017; Ilies, Scott, & Judge, 2006; Judge, Scott, & Ilies, 2006) has suggested that automatic emotional processing is a relevant theoretical underpinning that explains the link between situational workplace factors and citizenship behavior, but it has never been considered in the context of either required organizational PEBs or OCB-Es.

Finally, the third aim of this study is related to Ones and Dilchert's (2012) suggestion that researchers and practitioners alike need to better understand why the behaviors with an environmental impact differ across employees. Therefore, the current research considers the direct relationship between certain personality traits (i.e., openness to experience, conscientiousness) and OCB-Es as well as how these constructs may moderate the relationship between affect and OCB-Es. For this intervention to achieve success in terms of affecting as many members of the target population as possible, one must consider when, how, and why employees will respond to the stimulus presented to them. Existing work on contextual performance supports the influence of dispositional factors on employees' propensity to engage in OCBs (Ilies et al., 2006). As they relate to OCB-Es specifically, comprehending what stimulates the tendency to engage in environmentally friendly behaviors is important, in part because individuals' environmental actions only have measurable impacts when they occur on a regular basis (Markowitz, Goldberg, Ashton, & Lee, 2012).

In the following sections, this proposal first defines and reviews the relevant previous literature on PEBs and OCB-Es. This is followed by presenting the theoretical rationales underlying the relationships proposed in the current conceptual model (Figure 1). Subsequently, the method section details the study's sample, procedure, and measures. Finally, I will explain the results and discuss their theoretical and practical implications.

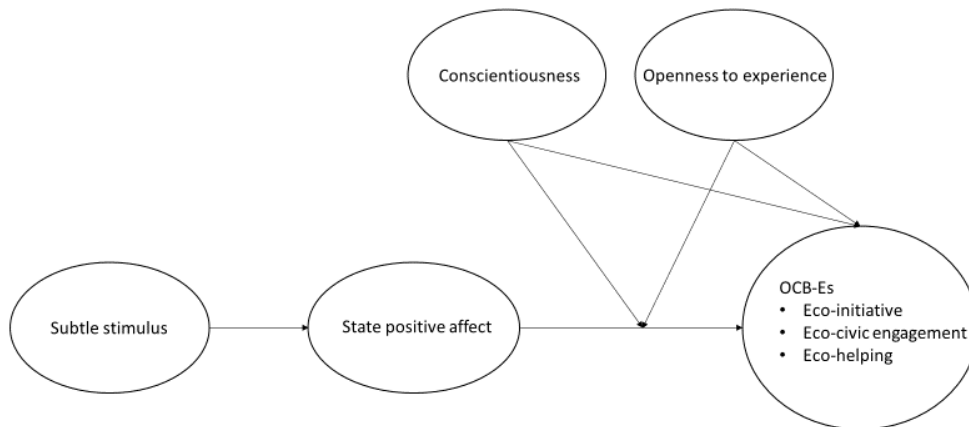


Figure 1. An overview of the proposed conceptual model of the effect of the subtle stimulus on OCB-Es via positive affect and moderating personality constructs.

Literature Review of Workplace PEBs and OCB-Es

Defining the constructs. Researchers have referred to PEBs by many names (though the differences are largely conceptual rather than in measurement; Boiral et al., 2015; Ones & Dilchert, 2012), including ecological behaviors, environmental behaviors, environmental actions, responsible environmental behaviors, conservation behaviors, environmentally responsible behaviors, environmentally significant behaviors, pro-ecological behaviors, environmentally conscious behaviors, environmentally friendly behaviors, sustainable behaviors, eco-friendly behaviors, and green behaviors. Regardless of the nomenclature, these terms all reflect the themes that comprise the definition of PEBs, or “individual behaviors contributing to environmental sustainability” (Mesmer-Magnus, Viswesvaran, & Wiernik, 2012, pg. 159).

Until the turn of the century, workplace PEBs were generally analyzed through an environmental management perspective (Boiral et al., 2015; Lamm et al., 2013), which emphasized the value of individual behaviors as part of larger organizational change processes. This traditional approach taken by organizations tends to involve indirect measures aimed at

mitigating environmental impact at the organizational level (e.g., funding community environmental programs; Ones & Dilchert, 2012). This is unfortunate, because as summarized by Boiral and colleagues (2015), activities that “impact environmental sustainability are indeed very diverse, complex and therefore difficult to integrate within formal management systems” (pg. 532). Further, even large-scale initiatives often require buy-in and action from organizational members (Boiral et al., 2015).

To that end, a more recent avenue of thought has focused on grounding individual PEBs in an I-O psychology perspective (Boiral et al., 2015). Unlike environmental management, this approach does not treat individual behaviors as a unidimensional construct that only takes on meaning when considered in aggregate. Rather, researchers pay closer attention to the differences between types of behavior. In Ones and Dilchert’s (2012) taxonomy, PEBs at the individual level are an umbrella concept that can be further distilled into 5 categories of behaviors that directly or indirectly impact the environment through personal or organizational resource consumption (Lamm et al., 2013). Such behaviors consist of a) conserving (i.e., reusing, repurposing, and recycling), b) working sustainably (i.e., changing how work is done), c) avoiding harm (i.e., preventing pollution), d) taking initiative (i.e., supporting others’ PEBs), and e) influencing others (i.e., initiating programs and policies; Ones & Dilchert, 2012a). This approach was also one of the first to distinguish voluntary and required workplace PEBs.

This taxonomy, however, is insufficient in that does not define where the line between required and voluntary behavior falls. Boiral and Paillé (2012) attempted to remedy that concern by developing a three-factor measure of OCB-Es based on Organ’s (1988) categories of OCBs (i.e., helping, sportsmanship, organizational loyalty, organizational compliance, individual initiative, self-development). The first factor, eco-initiative, relates to employee-driven

enterprises in which individuals promote voluntary actions that target sustainably improving organizational functioning. The second type of OCB-E, eco-civic engagement, involves contributions to organizational green initiatives (e.g., participation in a company sponsored event), and is most closely tied to organizational loyalty and self-development OCBs. Finally, eco-helping refers to “assistance concerning environmental issues, helping colleagues to... adopt more environmentally responsible behavior” (Boiral & Paillé, 2012, pg. 441). This is the least widely studied category of behaviors but perhaps the most critical to the effectiveness of organizational environmental endeavors. As this taxonomy finds its roots in the commonly accepted classification of OCBs and simultaneously offers thorough coverage of the aspects of OCB-Es (Terrier, Kim, & Fernandez, 2016), the current research is organized around this three-factor conceptualization.

A final consideration worth noting is Zacher and Bissing-Olson’s (2018) suggested continuum for OCB-Es from basic (i.e., easily integrated into existing routines) to proactive (i.e., requires developing new habits). Basic behaviors often stem from task-related activities (e.g., printing work-related documents) in which PEBs are easily carried out and/or easily integrate into a pre-existing pattern of behavior (e.g., making double-sided printing a default setting on employees’ computers). Conversely, proactive PEBs require personal initiative and/or higher levels of effort (e.g., taking the stairs instead of the elevator); as will be referenced in the discussion about personality traits, engaging in proactive PEBs entails changing or creating new habits, rather than simply building on existing behavioral patterns.

Overview of previous research. While the descriptions above provide the definitions used in academic study, it is also critical to briefly touch upon how they have been employed in previous research. As alluded to in the preceding section, organizational researchers’

understanding of the relationships between PEBs and other workplace variables has recently improved, especially regarding the increasing focus on the individual (versus organizational) level. However, most of the studies (Egri & Herman, 2000; Lamm et al., 2013) have focused on managerial, rather than employee, behaviors and determinates of PEBs (e.g., values or leadership styles; Amisano, 2017; Boiral et al., 2015; Pryiankara, Luo, Saeed, Nubuor, & Jayasuriya, 2018; Wang, He, Meng, Locatelli, Yu, & Yan, 2017).

For those authors who do conduct employee-level investigations, the most commonly studied theoretical rationales are rooted in a norms perspective (e.g., the value belief norm theory; Ones & Dilchert, 2012). This is exemplified by a study conducted by Smith and O'Sullivan (2012), which analyzed psychosocial determinants of PEBs, including internal attribution, social norms, perceived control, and moral norms. The results generally painted a picture of individuals in the workplace who are forced to prioritize whichever needs are most pressing in the moment. Put differently, employees must constantly juggle the importance of environmental objectives with the plethora of goals (e.g., task efficiency, career ambitions; Lo, 2015; Unsworth et al., 2013).

However, such academic tunnel vision inadvertently ignores other potentially critical constructs (e.g., affect), leaving us with a woefully inadequate comprehension of broader workplace PEBs (Boiral et al., 2015), narrower subsets of PEBs (e.g., OCB-Es), and the effectiveness of interventions targeting these behaviors (Unsworth et al., 2013). The current study aims to help diversify approaches in this area by focusing on affect, as discussed in more detail below.

The Role of Affect and the Subtle Stimulus

Understanding the values and norms related to OCB-Es may provide a foundation for advancing the integration of organizational and environmental literature, but it is equally important to consider other factors that may shape the behaviors. To that end, the following section first explores the reasoning underlying employing positive affect as a mediating mechanism, followed by an explanation of how such reasoning may influence OCB-Es.

Before continuing, however, it is important to specify that previous research has debated the uni- vs. multi-dimensional structure of affect (Russell & Carroll, 1999), but the current study subscribes to the multidimensional conceptualization (Watson, Clark, & Tellegen, 1988; Watson, Wiese, Vaidya, & Tellegen, 1999), in which positive and negative affect are separate unipolar dimensions as opposed to opposite ends of a bipolar spectrum. This perspective has received substantial empirical support for the two dimensions functioning via different physiological mechanisms (e.g., Watson, 2000) and having significantly different associations with other constructs (e.g., Watson & Pennebaker, 1989), even if they are correlated to some degree.

The experience of positive affect. To understand the experience of emotional states, consider theoretical models of automatic emotional processing (Zajonc, 2000), which propose that individuals can quickly and automatically evaluate the affective valence (i.e., positive or negative) of stimuli they encounter both within and outside their consciousness. Grounded in an evolutionary perspective, automatic emotional processing rests on the idea that humans developed the ability to peripherally scan the environment for the purposes of assessing both the importance and threat level of a given stimulus (indicated by an automatic emotional response; Calvo & Nummenmaa, 2007); these initial appraisals drive ensuing approach or avoidance behaviors in potentially life-threatening situations.

Stated differently, emotional responses generate from a basic appraisal to determine the motivational relevance (i.e., personal significance; Mauss & Robinson, 2009) of a stimulus (e.g., picture of a smiling face), as well as its motivational congruence, or desirability. The rudimentary emotional reactions evoked by a given cue can have immediate consequences (Winkielman, Berridge, & Wilbarger, 2005; Zajonc, 1980). Any visual symbol can constitute a stimulus but, interestingly, the ease of evaluation improves as the cues used for interpreting surroundings become closer to a literal mirror; people tend to have stronger responses to facial expressions as compared to other stimuli (e.g., positively valenced words or unfamiliar symbols; Izard, 1977, Greenwald, Klinger, & Liu, 1989). Thus (as will be explained in more detail below), in the currently proposed study, I will expose participants to a picture of a non-threatening, positively-valenced picture of a person smiling as the subtle stimulus, as it is the most likely visual cue to evoke a positive emotional response.

The subtle stimulus and positive affect. The primary and secondary appraisal processes used by our ancestors continue to shape individuals, including in organizational contexts. In general, recognition of the importance considering the role of affect on employee outcomes has increased in the past few decades, and psychological literature has established that mere exposure to a subtle stimulus can influence perceptions, attitudes, and subsequent behavior. Affective Event Theory (AET; Weiss & Cropanzano, 1996) posits that situational workplace factors directly stimulate affective experiences, which in turn influence employees' attitudes and behaviors. Given the ubiquity of affective stimuli in the work environment, employees' emotional states may be largely attributable to affective influences in the workplace. Interventions based in AET suggest that using affective stimuli to induce positive emotions can increase desired workplace behaviors (Weiss & Cropanzano, 1996).

A recent field experiment conducted by Hu and colleagues (2017) tested this rationale by investigating whether employee well-being and performance increased when call-center workers were induced to experience positive affect via exposure to a subtle affective stimulus of a smiling face embedded in the background of a survey (versus a blank survey background). They found that the stimulus (which can serve as an “affective event” in work environments; Hu et al., 2017) significantly augmented participants’ positive affect, which subsequently related to increases in extra-role performance. The findings from this study support the notion that not only does affect mediate the link between perceived stimuli and performance (as will be explored in more detail below), but also that the valence of an affective state influences this relationship. Taking these points together, I propose the following:

Hypothesis 1: The subtle stimulus positively influences employees’ positive affect.

The influence of positive affect. Emotional appraisal processes based on the recognition of an emotional stimulus, as well as the actions that result from changes in affective states, means that affect (especially positive) may be the “silver bullet” that connects nature-related signals and employees’ voluntary PEBs (Kals & Müller, 2012; Veitch, Dulvy, Koldewey, Lieberman, Pauly, Roberts, & Baillie, 2012). Findings from research in the environmental psychology domain consistently suggest that negative emotions do not play an important role in explaining PEBs (e.g., Davis, Green, & Reed, 2009; Kals & Müller, 2012). This may be because negative emotions produce action tendencies akin to fight-or-flight responses geared toward avoiding or mitigating perceived threats as quickly as possible. Employees may cope with negative emotions stemming from events encountered in an organizational context either by attempting to complete tasks more efficiently (e.g., in response to negative feedback; Dalal,

2005) implying that there is no opening to increase perceived extraneous activities (e.g., OCB-Es).

Conversely, when the appraisal of a stimulus culminates in experiences of positive emotions, it produces cognitive action tendencies designed to maintain or increase pleasurable feelings (Spector & Fox, 2002). Unlike experiencing negative emotions, positive emotional states have consistently been linked to long-term benefits (e.g., well-being). More importantly in the context of the current research, they also lead to behavioral changes, because positive affective states help individuals build and maintain personal resources (Fredrickson, 2000). Specifically, the broaden-and-build theory (Fredrickson, 2000) suggests that the experience of positive emotions creates emotional reserves that allow individuals to consider alternative courses of action (i.e., thought-action tendencies) that may then continue to build resources. By focusing on positive emotions, individuals can build a foundation on which to expand, or broaden, their personal outlook and attentional focus.

To date, only one field study has explicitly examined the role of positive emotions on workplace PEBs (Bissing-Olson, Iyer, Fielding, & Zacher, 2013), which is unfortunate, as there are multiple reasons that positive affect likely influences employee PEBs, especially OCB-Es. First, circling back to the broaden-and-build theory, the broadened attentional focus resulting from positive affect likely increases OCB-Es (i.e., versus when employees experience negative affect). This is especially possible since OCBs in general tend to be linked with affect (Motowidlo & Kell, 2012). More specifically, organizational members are more likely to consider engaging in alternative, environmentally friendly behaviors regardless of task relevance or efficiency because they have the personal resources to do so.

Relatedly, another reason for the relationship between positive affect and OCB-Es is that there is evidence demonstrating that humans have evolved to feel connected to the natural world (Davis, Green, & Reed, 2009). Biophilia, or an affection for the natural environment and its components (Grinde & Patil, 2009; Wilson, 1984), is an evolutionary remnant from our ancestors, who relied directly on their natural surroundings to fulfill basic needs. In modern times, one can find evidence of this affinity everywhere from national and international initiatives that set aside millions of acres of land in parks or heritage sites, to the billions of dollars in revenue generated by nature-focused tourism activities (e.g., camping, safari tours), to commercial real-estate trends (e.g., placing more value on properties with scenic views or near water; Davis et al., 2009). In short, individuals' affective connection to the environment is unique among the relationships between humans and their surroundings because it is so deeply rooted in our DNA (Davis et al., 2009).

Taken together, these points suggest that when employees feel positively after exposure to the subtle stimulus, they not only have the personal resources to devote to engaging in voluntary citizenship behaviors, but also may focus these personal resources on actions related to the connection to nature ingrained in all humans.

Hypothesis 2: The subtle stimulus positively influences employees' a) eco-initiative, b) eco-civic engagement, and c) eco-helping OCB-Es via its effects on positive affect.

The Role of Personality

While the use of an affective stimulus should increase employee engagement in OCB-Es, there are individual differences that must also be considered. Personality, or individual differences in characteristic patterns of affect, attitude, or behavior (Barrick, Mount, & Judge, 2001) could help paint a clearer picture for researchers attempting to increase employees' workplace behaviors in general; after all, personality represents "the most basic situationally

stable characteristics of individuals that can be used to predict patterns of behavior” (Markowitz et al., 2012; pg. 86). Further, multiple papers published within the last decade (e.g., Hirsh, 2010; Hirsh & Dolderman, 2007; Markowitz et al., 2012) have examined relationships among the Big Five personality traits and more proximal predictors of PEBs (e.g., environmental attitudes, connection to nature, behavioral goals). The findings from such previous research consistently point to the importance of considering personality traits as predictors of workplace OCB-Es in their own right (Markowitz et al., 2012). The strength of certain dispositional characteristics likely plays a fundamental role in understanding both which employees may perform OCB-Es, as well as who may engage in these behaviors in reaction to positive affect induced by a subtle affective stimulus.

In the context of the current research, conscientiousness and openness to experience may be especially relevant for the prediction of OCB-Es. First, previous literature (e.g., Podsakoff, MacKenzie, Paine, & Bachrach, 2000) has demonstrated support for conscientiousness and openness as having the strongest relationships with OCBs (Borman, Penner, Allen, & Motowidlo, 2001) and workplace PEBs (Markowitz et al., 2012), respectively. This implies that this relationship should extend to OCB-Es as well, though the connections have not been tested empirically. With that point in mind, recall that PEBs are generally motivated by the combination of self-interest and concern for the environment (Lo, 2015). Of the Big 5, conscientiousness and openness to experience are both self-oriented (unlike extraversion and agreeableness; Costa & McCrae, 1996), and higher levels likely result in goal-direct and/or novel behaviors (unlike emotional stability, which is characterized by impulse control; Costa & McCrae, 1996). I expand on this rationale in more detail in the following paragraphs.

Openness to experience. First, I expect that openness to experience will have a positive influence on employees' OCB-Es. Individuals high in openness, which is characterized by curiosity, broad-mindedness, and aesthetic appreciation (Barrick & Mount, 1991), may possess an ideal combination of sensitivity to the potential impact of their actions, an innate interest in novelty, and a disposition that welcomes related new behaviors. Within the context of discretionary employee behavior, this trait may be especially relevant because proactive OCB-Es can entail changes to the process of task completion (Ones & Dilchert, 2012). Additionally, OCB-Es require abstract thinking, flexibility, and creativity (Brick & Lewis, 2016), all of which are qualities found in those who have higher levels of openness to experience.

These points mean that employees with a propensity for broad mindedness may consider re-using the same disposable cup all day or take the time to adjust their default printer settings to double sided printing (i.e., eco-initiative). Intellectually curious organizational members may wonder how much electricity could be saved by shutting the lights at the end of the day, and subsequently suggest policy changes to management (i.e., eco-civic engagement). Additionally, higher levels of aesthetic appreciation may be demonstrated by walking to lunch instead of ordering out, and asking coworkers to join them (i.e., eco-helping).

This trait has also been widely supported as having the strongest correlation between personality and basic measures of individuals' PEBs (Brick & Lewis, 2016; Hartig, Kaiser, & Bower, 2001; Markowitz et al., 2012). For example, one illuminating study by Markowitz and colleagues (2012) defining what it means to be a pro-environmental individual found that those "who appreciate aesthetic beauty, are creative and inquisitive, and who hold a relatively wide breadth of interests tended to self-report participating more frequently in a set of PEBs" (pg. 96).

In contrast, employees low on openness may not be interested in discovering novel work practices because they have difficulty with abstract thought. Unlike their more open counterparts, positive emotions induced by work events may not result in extra-role behaviors as these employees are typically rigid, narrow-minded, and unwilling to stray from established routines (Barrick & Mount, 1991). Based on these considerations, I hypothesize the following:

Hypothesis 3: Openness has a positive relationship with a) eco-initiative, b) eco-civic engagement, and c) eco-helping OCB-Es.

In addition to a direct relationship, openness to experience is also expected to moderate the relationship between affect induced by subtle affective stimuli and OCB-Es. Previous literature in this domain exploring the moderating effect of personality on the relationship between state affect and performance has not generally considered openness to experience (e.g., Ilies, Scott, & Judge, 2006). However, returning to the broaden-and-build theory, when individuals experience positive emotional states they gravitate toward approach behaviors that maintain or enhance similar desirable feelings (Fredrickson, 2000). Highly open individuals may find approach behaviors a form of novelty in and of themselves, which would enhance the relationship between such actions and the experience of positive affect.

Further, it is feasible that these behaviors could take an eco-friendly form due to the tendency for highly open individuals to have high levels of aesthetic appreciation (Barrick & Mount, 1991; Markowitz et al., 2012). This is because, as mentioned above, humans are attracted to and find beauty in nature, and in fact empirical evidence supports a large correlation between aesthetic appreciation and an affinity for nature (Markowitz et al., 2012). Thus, the relationship between positive affect and OCB-Es should increase because the connection may be amplified by the appreciation of nature's beauty in open employees.

Additionally, the relationship between positive affect and OCB-Es may be enhanced for highly open employees because the greater availability of personal resources (i.e., resulting from experienced positive affect) allow employees to act out their open disposition in a manner appropriate for the organizational setting (Markowitz et al., 2012). More specifically, as highly open individuals enjoy solving intellectual problems (LePine, Colquitt, & Erez, 2000), they may see actions such as seeking alternative, environmentally-friendly approaches to task-completion as enjoyable. As the experience of state positive affect can allow individuals to devote attention to areas beyond their typical work tasks, these employees could have more bandwidth to experiment with OCB-Es. Along those lines, because they are curious, the broader scope of thought-action tendencies incurred by positive affect may take the form of investigations into the current environmental policies of the organization, or exploration into how to raise the temperature of the workplace thermostat.

When individuals who are lower in openness experience the same degree of positive affect after exposure to the stimulus, they may not consider directing energy toward behaviors that reflect an appreciation for nature. These employees tend to be inflexible, prefer routine, and excel in tasks that do not require abstract thought (McCrae & Costa, 2003). As expressed in the introduction, organizations rarely espouse the need for OCB-Es, so employees low on openness are unlikely to consider engaging in more of them as a response to positive affect induced by the subtle stimulus. Their lower intellectual curiosity (McCrae & Costa, 2003) may not incline them to stray from their normal work patterns, implying that the existing relationship between positive affect and OCB-Es would not increase. Thus, openness to experience may positively moderate the effect of positive emotional states on working sustainably such that the relationship between

positive emotional states and this OCB-Es are enhanced when individuals have higher levels of openness to experience.

Hypothesis 4: Openness to experience moderates the effect of positive affect on a) eco-initiative, b) eco-civic engagement, and c) eco-helping behaviors such that the positive relationship between positive affect and OCB-Es is enhanced when individuals have higher levels of openness.

Conscientiousness. In addition to openness, conscientiousness may also play an important role in understanding which employees engage in OCB-Es. Conscientious individuals are characterized by rationality, thoughtfulness, self-discipline, responsibility, taking initiative, and demonstrating goal-directed behaviors (McCrae & Costa, 2003). These traits can be grouped into two broader underlying factors, both of which may be relevant to performing OCB-Es: dependability and achievement (Landy & Conte, 2016). First, given the descriptors above, it is not illogical to conclude that conscientious employees may consider it their duty to engage in OCB-Es, regardless of the relevance to their job roles. Indeed, research has consistently found a stronger relationship between conscientiousness and extra-role behavior in general compared to other personality traits (Podsakoff, MacKenzie, Paine, & Bachrach, 2000). It has also been associated with an overall propensity for “good citizenship” (Ones & Dilchert, 2012); in other words, conscientious employees likely need little prompting from their organization to engage in OCB-Es (Lamm et al., 2013).

Relatedly, because they tend to feel fulfilled by a sense of accomplishment, conscientious individuals may be attracted to task-related, or basic, (Brick & Lewis, 2016; Zacher & Bissing-Olson, 2018) OCB-Es. These are commonly integrated with previously established habits (e.g., conserving resources by using the recycling) and likely require self-discipline and/or lend themselves to specific goals. For example, employees may create a schedule for days where they order takeout lunch instead of delivery and take it upon themselves to perform eco-helping

behaviors by encouraging coworkers to join in their efforts. Because they are easily measurable, such behaviors can provide concrete benchmarks of achievement (LePine et al., 2000). The drive toward achievement may especially enhance eco-initiative OCB-Es, as these are employee-driven actions that can involve concrete milestones to measure achievement (e.g., the amount of paper saved by printing double sided).

This does not imply that other types of OCB-Es, such as taking initiative to work sustainably, will not demonstrate a positive relationship with conscientiousness. On the contrary, conscientious employees may engage in these OCB-Es out of an innate sense of responsibility and/or because engaging in such behaviors engenders a sense of personal achievement. Indeed, actions such as printing double sided or petitioning managers to order LED lightbulbs may lead to feelings of accomplishment. Conversely, employees with low levels of conscientiousness may lack the organization to follow through with such behaviors or lose interest in the endeavor. Taken together, these points suggest that higher levels of conscientiousness in employees may be positively related to engaging in OCB-Es.

Hypothesis 5: Conscientiousness has a positive relationship with a) eco-initiative, b) eco-civic engagement, and c) eco-helping OCB-Es.

Like openness to experience, conscientiousness may also serve as a moderating factor for affect and OCB-Es. As conscientious individuals often exhibit dedication to accomplishing goals (Barrick et al., 2001), the relationship between positive affect and OCB-Es may benefit. This is because these employees are already predisposed to engage in performance that incurs a sense of achievement, and when they experience positive affect they may have the expanded resources to actually devote energy toward accomplishing goals related to voluntary environmental behaviors (i.e., rather than or in addition to their regular task-related behaviors; Fredrickson, 2000). For example, an individual may regularly take the time to turn off the lights in his or her own office,

but after experiencing positive affect in response to the stimulus, the same individual may build upon the sense of achievement by also turning off the lights in other empty rooms to prolong the positive affect. In other words, conscientious employees may already perform OCB-Es because they are predisposed to take initiative and diligent enough to follow through with these behaviors on a consistent basis, but it may also moderate the relationship in that the experience of positive affect may provide a space to increase the intensity or frequency of OCB-Es in the pursuit of feelings of personal accomplishment.

Additionally, the tendency towards “good citizenship” for conscientious individuals may also explain why this trait would moderate the link between positive affect and OCB-Es. As previously discussed, employees tend ignore workplace PEBs not because of a lack of interest, but rather because they prioritize short-term goals over more abstract concerns (e.g., environmental conservation; Lo, 2015). Conscientious individuals tend to follow social norms (Milfont & Sibley, 2012); in the context of the current study, this may constitute one explanation for the increased relationship between experiencing positive affect as a result of the stimulus and OCB-Es. More specifically, when individuals experience positive affect, they may be more inclined to act on their innate sense of responsibility by performing behaviors positively associated with nature, especially because they are fulfilling their duty as a good citizen. This rationale is especially relevant for OCB-Es that directly affect the organization (e.g., attending a work-organized park clean-up on the weekend; eco-civic engagement) or its members (e.g., teaching colleagues to change their printer settings to double-sided; eco-helping).

Conversely, the relationship between positive affect and OCB-Es is likely to be weak for employees low on conscientiousness, as they have a lower sense of responsibility. Eco-initiative, eco-helping, and eco-civic engagement behaviors may not be high priority for these employees

regardless of their affective state. Further, a lack of organization in individuals with lower levels of conscientiousness may also mean that even if these employees experience positive affect in response to the stimulus, the actual relationship with OCB-Es is not expected to change because such employees do not have the tools to follow through with behaviors that require a change in routine (i.e., proactive OCB-Es). In summation, it may be that conscientiousness moderates the effect of positive emotional states on OCB-Es such that the positive relationship between positive emotional states and these OCB-Es is enhanced when individuals have higher levels of conscientiousness.

Hypothesis 6: Conscientiousness moderates the effect of positive affect on a) eco-initiative, b) eco-civic engagement, and c) eco-helping OCB-Es such that the positive relationship between positive affect and OCB-Es is enhanced when individuals have higher levels of conscientiousness.

Moderated Mediation

Beyond examining the above hypotheses individually, testing the indirect effect of the subtle affective stimuli on OCB-Es via positive affect and/or goal activation as moderated by each personality trait may provide a more comprehensive picture of the utility of the proposed intervention. Previous research (Hu et al., 2017) has tested the relationship of a subtle affective stimulus on extra-role behavior, but it would be myopic to assume those results apply to OCB-Es as well. Additionally, given the proposed moderation effects for both conscientiousness and openness to experience on the relationships between the mediator of interest and OCB-Es, it follows that each of these traits may enhance the mediational relationships. Therefore, the following hypotheses are presented:

Hypothesis 7: The indirect effect of the subtle stimulus on OCB-Es via positive affect is more strongly positive for employees with higher levels of openness to experience.

Hypothesis 8: The indirect effect of the subtle stimulus on OCB-Es via positive affect is more strongly positive for employees with higher levels of conscientiousness.

CHAPTER II

METHOD

Participants and Procedure

Participants. Data were obtained from 89 full-time employees from a large consulting firm headquartered in the United States participated in this field study. Among the participants, 33% were men. The mean age was 39.14 years ($SD = .88$), mean organizational tenure was 3.63 years ($SD = 4.16$). All participants have been working for their current employer for at least 3 months prior to participation. To maintain the fidelity of the experimental setting, all employees reporting that they work remotely (i.e., from home) were removed prior to analysis.

Procedure. Volunteers were recruited via announcements posted to the organization's internal social media platform (i.e., Yammer). Participants who completed the initial survey (through a link included in the announcement) were contacted by the researcher within 1 business day. This study used a between-subjects design, meaning that each participant was exposed to either the experimental ($n = 49$) or control condition ($n = 40$) as determined by a random number generator.

This study uses a convenience/salience intervention (i.e., through a prompt provided), which generally produces moderate to large effect sizes in laboratory settings (Ones & Dilchert, 2012). However, whether this effectiveness translates to work settings for PEBs is unknown (Ones & Dilchert, 2012). The methodology is described in more detail in the following paragraphs.

Pre-manipulation survey. The social media announcement (Appendix A) informed employees of an opportunity to participate in a study investigating workplace experiences and informed them that individuals who completed all portions of the study would be entered into a drawing for a \$70 gift card to the coffee shop of their choice. The post included a link to the pre-

manipulation survey, which included control variables and baseline measures of affect. The post was presented on a blank backdrop (i.e., not containing the subtle stimulus).

Experimental manipulation. Within the next 1-2 business days, all participants who completed the baseline survey received email messages every half hour from 8am to 4:30pm. As depicted in Appendix B, each email contained a 2-sentence message asking about conference call usage within the previous half-hour (as this is a common practice for members within the organization) along with the subtle stimulus (i.e., a picture of a woman smiling). To confirm exposure to the subtle stimulus, each email required participants to send a “read receipt”; to qualify for study completion, participants had to open 16 of the 17 emails. On average, participants indicated 14 incidences of exposure ($SD = 4.40$). The *only* purpose of these messages was to expose participants to the subtle stimulus. Participants in the control condition received the same messages as those in the experimental condition presented without any accompanying visual (i.e., on a white backdrop).

Post-manipulation survey. At 4:45pm the same day, participants received a final email inviting them to complete a survey (Appendix C), which included measures of state affect, personality, and performance outcomes (i.e., OCB-Es). The email was sent with a white backdrop and did *not* contain the subtle stimulus.

Finally, to determine participants’ awareness of the purpose of the picture (i.e., subtle stimulus), the researcher followed a funnel debriefing procedure in which participants answer increasingly specific questions about the research (e.g., “what do you think the purpose of the study is”; “did you find anything strange or suspicious in the study”; “did anything on the surveys affect what you did”; Bargh & Chartrand, 2000; Ruys & Stapel, 2008). Participants did not indicate any awareness of the research purpose.

Measures

Positive and negative affect. 10 adjectives from Positive and Negative Affect Schedule (PANAS; Watson, Tellegen, & Clark, 1988; Appendix D) measured positive affect and 10 words measured negative affect. In the pre-manipulation surveys, participants were asked to indicate the accuracy of these adjectives in describing their emotional state on a scale from 1 (not at all) to 5 (extremely) accurate. The baseline measure assessed trait positive affect ($\alpha = .89$) and negative affect ($\alpha = .73$); in the post-manipulation survey, employees were given the same adjectives and asked to indicate how accurately each adjective described their feelings at work during the course of the day of participation. The average reliability for state positive affect was $\alpha = .96$; reliability for state negative affect was $\alpha = .71$.

Personality traits. Openness to experience and conscientiousness were measured on a scale from 1 (strongly disagree) to 5 (strongly agree), using 2 10-item subscales from the 50-item International Personality Item Pool (IPIP; Goldberg, 1999; Appendix E). Sample items include, “I have a vivid imagination” for openness to experience ($\alpha = .85$) and, “Pay attention to details” for conscientiousness ($\alpha = .82$).

OCB-Es. Engagement in OCB-Es was captured using Boiral and Paille’s (2012) measure discussed in the introduction, in which participants were asked how often they performed behaviors on a scale from 1 (daily) to 5 (less than once per month); it may be located in Appendix F. The 3-factor measure includes 3 items targeting eco-initiative (e.g., “I voluntarily carry out environmental actions and initiatives in my daily work activities”; $\alpha = .78$), 4 items focused on eco-civic engagement (e.g., “I stay informed of my company’s environmental

initiatives”; $\alpha = .88$), and 3 items focused on eco-helping behaviors (e.g., “I encourage my colleagues to express their ideas and opinions on environmental issues” $\alpha = .86$).

Debriefing. Per Bargh and Chartrand (2000), if < 5% of participants show awareness of the priming influence on their responses, one may assume that the results may reflect this influence. I assessed participants awareness of the manipulation at the end of the post-manipulation survey through their measure (Appendix G), which is often used in empirical studies of this kind (e.g., Hu et al., 2017; Shantz & Latham, 2009). A sample item is, “What do you think the experiment was trying to uncover?”

Control variables. Control variables included age, education, organizational tenure, and trait positive affect. Markowitz and colleagues (2012) profiled the pro-environmental individual as someone who is typically younger and more highly educated. Organizational tenure is assessed because employees’ behaviors may be influenced by their level of comfort with the organization in general, which could be due to their familiarity with the organization based on the amount of time they have spent as a member.

CHAPTER III

RESULTS

Table 1 displays means, standard deviations, and correlations among study variables.

Prior to analysis all data were cleaned and regression assumptions tested; missing values analysis (MVA) showed that all variables had < 5% missing data using pairwise deletion. The study hypotheses and moderated mediation models were tested using path analytic procedures (Edwards & Lambert, 2007; Preacher, Rucker, & Hayes, 2007).

Table 1.

Bivariate correlations for all study variables.

	M	SD	1	2	3	4	5	6	7	8	9	10
1. Age	39.14	.88	-									
2. Gender	1.7	.54	-.22*	-								
3. Org. tenure	3.63	4.16	.39**	.06	-							
4. Trait PA	3.09	.63	.12	.16	.01	-						
5. Trait NA	2.09	.54	-.13	.01	.02	-.22*	-					
6. Affective stimulus	.55	.50	-.03	.07	.03	.15	-.11	-				
7. State PA	3.03	1.11	.16	.16	.01	.98**	-.22*	.15	-			
8. Openness	3.94	.51	.04	.04	.15	.25*	-.04	.14	.25*	-		
9. Conscientiousness	3.84	.50	.07	.06	.20	.15	-.34*	.14	.11	.25*	-	
10. Eco-initiative	3.67	1.04	.15	.14	.09	.30*	-.21	.29**	.30**	.12	.12	-
11. Eco-civic engagement	3.11	1.04	.04	.14	.07	.27*	-.04	.12	.27*	.38**	.18	.50**
12. Eco-helping	3.03	1.08	.04	.13	.03	.30**	-.02	.05	.30**	.23*	.09	.42

Note. * $p < .05$. ** $p < .01$. $N = 88-89$.

To address the possibility that the sample size could incur low statistical power (and thus increase the likelihood of Type II error; Cohen, 1992), power analyses were conducted using G*Power. Specifically, given the input parameters of a total sample size of $N = 77$, $\alpha = .05$, and the number of predictors tested, and a medium effect size of $f^2 = .15$, the achieved power

was calculated to be .80. This signals that the likelihood of detecting significant effects (if they exist) are acceptable as prescribed by conventional standards of .80 (Cohen, 1992).

Hypothesis 1 (Table 2) predicted that the subtle stimulus positively influences employees' positive affect. After controlling for trait positive affect and demographic variables (i.e., age, gender and organizational tenure), path analysis results did not support this relationship ($\beta = .16, p = .17$), thus, Hypothesis 1 was not supported.

Table 2.

Path Analyses predicting State PA and OCB-Es

Variables	First stage DV = Positive affect		Second Stage DV = Eco-initiative		Second stage DV = Eco-civic engagement		Second stage DV = Eco- helping	
	β	SE	β	SE	β	SE	β	SE
Age	.13	.08	.10	.10	.06	.12	.08	.13
Gender	-.14	.17	-.15	.18	-.13	.23	-.06	.25
Org. tenure	.06	.13	-.11	.09	-.09	.13	-.15	.11
Trait PA	.02	.10	.05	.12	.12	.15	.10	.16
Subtle stimulus	.16	.16	.27**	.16	.11	.20	.06	.23
State PA			.24*	.12	.20	.15	.29**	.17
Openness to experience			.07	.16	.29**	.21	.15	.23
Conscientiousness			.05	.17	.16	.22	.07	.23
Openness X PA			.55*	.25	-.40	.31	.17	.35
Conscientiousness X PA			-.08	.26	-.42	.33	-.16	.35

Note. "Gender": 0 = male, 1 = female. Components of interaction are mean-centered. $N = 88-89$.

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

To test hypotheses 2a-c, the indirect effect of the affective stimulus on each type of OCB-Es via positive affect was tested via path analytic procedures (Edwards & Lambert, 2007) using the Process Macro (Hayes, 2009) in SPSS. Further, to test the significance of the mediational effects the Monte Carlo technique was used to construct 90% confidence intervals (to gain a higher level of statistic power per the small sample size). 90% and/or 95% bias-corrected bootstrapping confidence intervals are also used because bootstrapping does not impose any specific

distribution of the coefficients when testing for significance. The bias-corrected confidence intervals account for any skewness and bias present in the distribution of the estimated coefficients (Hayes, 2009). As displayed in Table 3, for Hypothesis 2a, results supported the indirect effect of the stimulus on eco-initiative at a 90% confidence interval and also when tested using $CI_{95\%} = [.0310, .2236]$. Thus, Hypothesis 2a was supported. However, the results did not support an indirect effect using a 90% confidence interval between the stimulus and eco-civic engagement behaviors (Hypothesis 2b), or for eco-helping behaviors (Hypothesis 2c). Thus, Hypotheses 2b and 2c were not supported.

Hypotheses 3a-c state that openness to experience has a positive direct relationship with eco-initiative, eco-civic engagement, and eco-helping OCBs (all path analytic results shown in Table 2). The findings showed a nonsignificant relationship between Openness and eco-initiative ($\beta = .07, p = .54$), meaning the Hypothesis 3a was not supported. The results of the analyses for Hypotheses 3b demonstrated support for a direct relationship between openness to experience and eco-civic engagement ($\beta = .29, p < .01$). However, the findings did not support the relationship between openness and eco-helping behaviors ($\beta = .15, p = .16$).

Hypotheses 4a-c posit that openness to experience moderates the relationship between positive affect on eco-initiative, eco-civic engagement, and eco-helping OCBs such that the positive relationship between positive affect and OCBs is enhanced when individuals have higher levels of openness. The results indicated that the interaction effect between openness and positive affect did significantly relate to eco-initiative OCBs ($\beta = .55, p < .05$); thus Hypothesis 4a was supported. Depicted in Figure 2, simple slopes tested the relationship for the effect of positive affect on these behaviors at low (-1 SD below the mean; $\beta = .30, p = .65$) and high (1 SD above the mean; $\beta = .873, p = .24$) levels of openness to experience but did not find

significant trends in either direction. The results did not support a significant interaction effect between positive affect and openness to experience for eco-civic engagement behaviors ($\beta = -.40$, $p = .23$) or eco-helping behaviors ($\beta = .17$, $p = .30$); thus,

Hypotheses 4b and 4c were not supported.

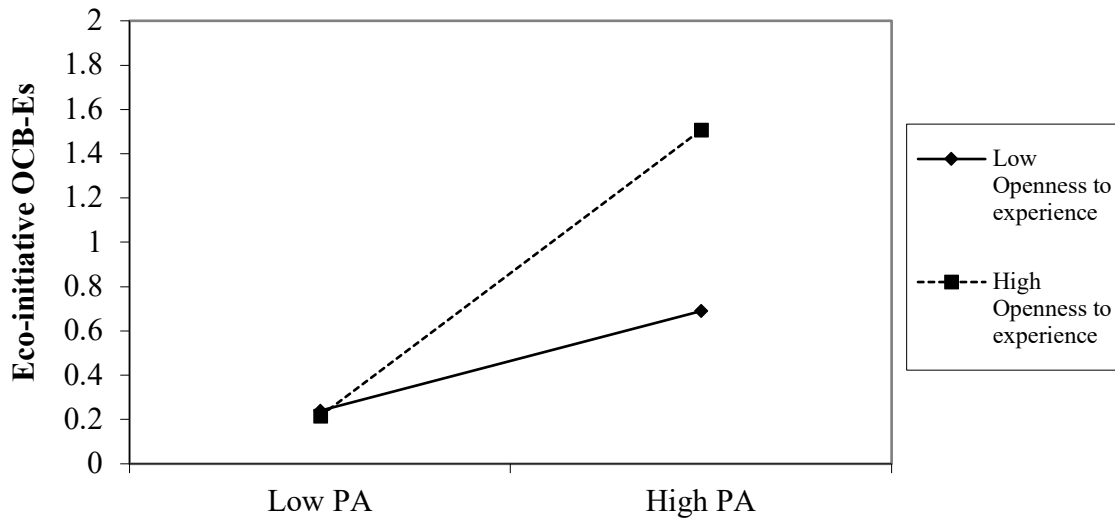


Figure 2. Interaction graph for Hypothesis 4a. Shows the moderating effect of openness to experience on the relationship between PA and eco-initiative OCB-Es such that the positive relationship between openness and PA is enhanced at mean levels of openness to experience.

Hypothesis 5a-c states that conscientiousness has a positive direct relationship with eco-initiative, eco-civic engagement, and eco-helping OCBEs. Results were nonsignificant for the direct relationships of conscientiousness on eco-initiative behaviors ($\beta = .05$, $p = .64$), eco-civic engagement behaviors ($\beta = .16$, $p = .13$), and eco-helping behaviors ($\beta = .07$, $p = .45$).

Hypotheses 6a-c posit that conscientiousness moderates the relationship between positive affect on eco-initiative, eco-civic engagement, and eco-helping OCBEs such that the positive relationship between positive affect and OCBEs is enhanced when individuals have higher levels of openness. For hypothesis 6a, there was no significant interaction effect ($\beta = -.08$, $p = .46$). This was also true for the moderation effect of conscientiousness on the relationship between positive

affect and eco-civic engagement behaviors ($\beta = -.42, p = .34$), as well as on the interaction effect for eco-helping behaviors ($\beta = -.16, p = .15$).

Hypotheses 7 and 8 predict that the indirect effect of the stimulus on OCB-Es via positive affect is more strongly positive for employees with higher levels of openness to experiences or conscientiousness, respectively. The conditional indirect effects of the stimulus on the performance outcomes were examined at three levels of openness (1 SD above the mean, the mean, and 1 SD below the mean). The conditional indirect effect of the stimulus on eco-initiative OCB-Es via positive affect was nonsignificant at higher levels of openness, ($CI_{90\%} = [-0.0755, 0.0723]$), at the mean levels of openness, ($CI_{90\%} = [-0.0050, 0.1819]$), as well as lower levels of openness, ($CI_{90\%} = [-0.0081, 0.2934]$). The conditional indirect effect of the stimulus on eco-civic engagement OCB-Es via positive affect was nonsignificant at higher levels of openness, ($CI_{90\%} = [-0.0400, 0.3240]$), at the mean levels of openness, ($CI_{90\%} = [-0.0285, 0.1762]$), as well as lower levels of openness, ($CI_{90\%} = [-0.0946, 0.1255]$). The conditional indirect effect of the stimulus on eco-helping OCB-Es via positive affect was nonsignificant at higher levels of openness, ($CI_{90\%} = [-0.0350, 0.1942]$), at the mean levels of openness, ($CI_{90\%} = [-0.0138, 0.2207]$), as well as lower levels of openness, ($CI_{90\%} = [-0.0287, 0.2774]$).

Like Hypothesis 7, the data for Hypothesis 8 analyzed OCB-Es at three levels of conscientiousness (1 SD above the mean, the mean, and 1 SD below the mean). The conditional indirect effect of the stimulus on eco-initiative OCB-Es via positive affect was nonsignificant at higher levels of conscientiousness, ($CI_{90\%} = [-0.0137, 0.2037]$), at the mean levels, ($CI_{90\%} = [-0.0088, 0.1543]$), as well as lower levels of the personality trait, ($CI_{90\%} = [-0.0154, 0.1495]$). The conditional indirect effect of the stimulus on eco-civic engagement OCB-Es via positive affect was nonsignificant at higher levels of conscientiousness, ($CI_{90\%} = [-0.0244, 0.2898]$), at the mean

levels of conscientiousness, ($CI_{90\%} = [-0.0147, 0.1687]$), as well as lower levels of conscientiousness, ($CI_{90\%} = [-0.0550, 0.1195]$). The conditional indirect effect of the stimulus on eco-helping OCB-Es via positive affect was nonsignificant at higher levels of conscientiousness, ($CI_{90\%} = [-0.0249, 0.3021]$), at the mean levels of conscientiousness, ($CI_{90\%} = [-0.0124, 0.2180]$), as well as lower levels of conscientiousness, ($CI_{90\%} = [-0.0355, 0.2117]$). Thus, neither hypothesis was supported. All path analytic results are displayed in Figures 3-5.

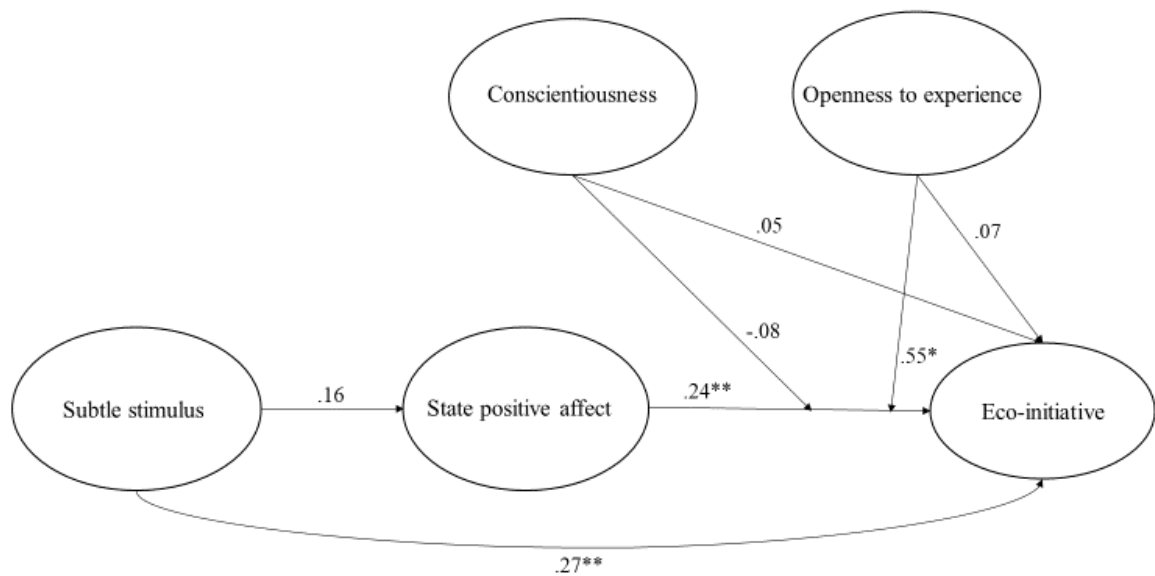


Figure 3. Path model for eco-initiative OCB-Es with standardized weights. $N = 89$.

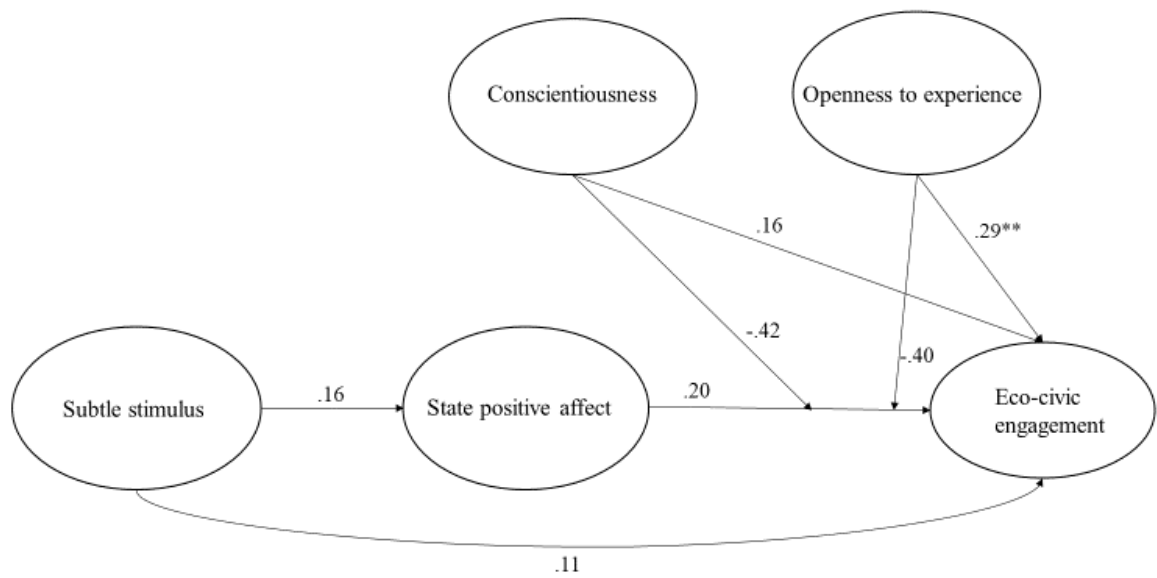


Figure 4. Path model for eco-civic engagement OCB-Es with standardized weights. $N = 89$.

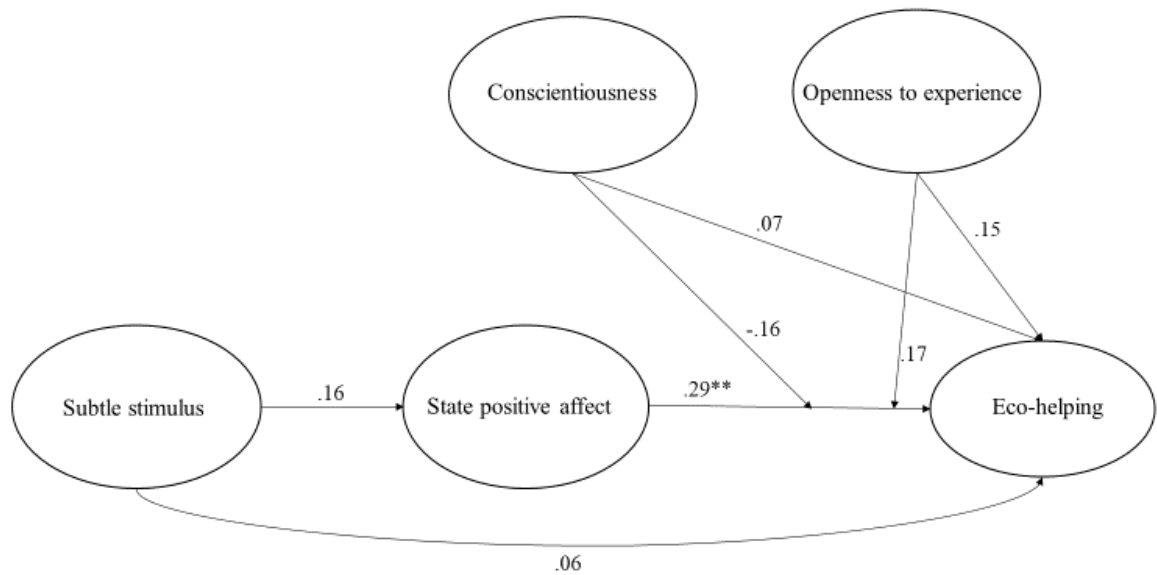


Figure 5. Path model for eco-initiative OCB-Es with standardized weights. $N = 88$.

CHAPTER IV

DISCUSSION

The current experimental field-study investigated whether or not it is possible to increase OCB-Es via repeated exposure to a positively valenced subtle stimulus (i.e., a picture of a person smiling), as well as how discrete personality traits (i.e., openness to experience and conscientiousness) both may directly relate to these behaviors and moderate the relationship between positive affect and OCB-Es. This investigation aimed to answer three research questions, including: 1) is it possible to influence employees' OCB-Es using subtle stimuli? 2) Can this be accomplished by inducing a positive affective state? 3) As the effects of a given stimulus may vary from person to person, how might more stable, dispositional traits influence both which employees are more likely to perform OCB-Es in general, as well as moderate the relationship between positive affect and these behaviors?

Results from this empirical study found mixed support for the proposed hypotheses. Unfortunately, the proposed relationship between the subtle affective stimulus and positive affect was not supported, nor were the hypothesized indirect relationships between the stimulus and OCB-Es via positive affect for two of the three performance dimensions. However, the data did support the hypothesized mediation effect of the smiling picture on eco-initiative OCB-Es via positive affect. Additionally, the results of the path analyses were statistically significant for a direct relationship between openness to experience and eco-civic engagement OCB-Es but not eco-initiative and eco-helping behaviors, and while the interaction effect between openness and positive affect did significantly relate to eco-initiative OCB-Es, support was not demonstrated for the other proposed moderation effects as related to eco-civic engagement and eco-helping behaviors. The direct and moderation effects for conscientiousness and OCB-Es also failed to

demonstrate significance. Theoretical and practical implications, limitations, and future directions based on these findings are discussed in the following sections.

Theoretical Implications and Major Contributions

OCB-Es, the subtle stimulus, and positive affect. Although the results were not as supportive of the influence of a subtle stimulus on OCB-Es as this author hoped, this study and its findings represent an important contribution to organizational literature by explicitly examining potential individual-level influences on employees' voluntary PEBs in a workplace setting via an intervention based in positive psychology. Specifically, one implication from the data is that while the link between the subtle affective stimulus and state positive affect was not significant, the main effect of positive affect on OCB-Es, as well as the support for the indirect effect of the stimulus on eco-initiative OCB-Es suggests that there is credence to considering positive affect as the "silver bullet" (Kals & Müller, 2012) for environmentally friendly workplace behavior. As mentioned in the introduction, humans are innately attracted to nature (i.e., biophilia; Davis et al., 2009), so when they have access to greater personal resources as a result of the experience of positive affect (Fredrickson, 2000), the findings from the current study support the notion that employees are inclined to aim these resources at protecting the environment (e.g., via OCB-Es). This speaks to the utility of targeting employees' OCB-Es via a positive psychological approach.

Relatedly, a major contribution of this study is the support for the specific relationship between state-level positive affect and OCB-Es. The little research in this area that exists has generally focused on trait-level emotions and corporate social responsibility outcomes at (e.g., Andersson, Giacalone, & Jurkiewicz, 2007; Giacalone, Paul, & Jurkiewicz, 2005) or at the within-person level (Bissing-Olson et al., 2013). Because experiencing positive affect signals to

individuals that they are in a non-threatening environment, employees may feel that they can relax and devote resources to long-term interests (e.g., environmental concerns) that may otherwise fall by the wayside. There is extensive research into improving state affect for organizational members with the aim of influencing specific outcomes (e.g., Bissing-Olson et al, 2013; Bono, Glomb, Shen, Kim, & Koch, 2013; Hülshager, Alberts, Feinholdt, & Lang, 2013; Kaplan, Bradley-Geist, Ahmad, Anderson, Hargrove, & Lindsey, 2014). It follows that academicians should conduct additional investigations at the interpersonal- (vs. intrapersonal-) level tying fluctuations in state affect to specific outcomes related to employees' PEBs.

One possible explanation for the unexpected pattern of results regarding the significant influence of the stimulus on eco-initiative OCB-Es via positive affect but not eco-civic engagement or eco-helping behaviors lies in the comparatively solitary nature of eco-initiative behaviors. For this category of OCB-Es, workplace behaviors are self-involved (e.g., recycling in the proper containers, printing double sided; Boiral & Paille, 2012); in contrast, eco-civic engagement and eco-helping behaviors are more intertwined with the actions of others (e.g., joining existing programs or helping colleagues to clean up after a spill). Because they require less dependency on others, eco-initiative OCB-Es may be more likely to result from exposure to the stimulus because the individual can engage in actions on their own terms rather than coordinating with other members of the organization.

Another surprising trend in the results was the overall weak support for the influence of the subtle affective stimulus. According to AET (Weiss & Cropanzano, 1996), situational workplace factors directly stimulate affective experiences, which in turn influence employees' attitudes and actions; this has been repeatedly demonstrated with relatively salient stimuli (Davis et al., 2009; Hu & Kaplan, 2015; Shantz & Latham, 2013; Weiss & Cropanzano, 1996) but has

only been empirically tested with a subtle stimulus in one other organizational field-study (Hu et al., 2017). Although that investigation was promising, the contradictory findings from the current extension of their research suggest that additional examinations in actual organizational contexts may be needed before drawing conclusions about the applicability of automatic emotional processing as related to OCB-Es.

More specifically, there are some striking differences between the characteristics in Hu's organizational setting versus the current research that suggest that the core tenets of AET require a more nuanced description. Unlike the call center where the previous research recruited participants, the roles in a consulting firm generally require a higher degree of task variety and interdependence, implying that in the latter setting there may also be both more varied and numerous "events" to process at any given time. By creating a less "sterile" environment due to the multitude of simultaneous contextual and interpersonal cues facing participants (Elsbach & Pratt, 2008; George, 2009) the impact of any single cue is inevitably diminished, especially if it is less salient. Automatic processing still occurs for individuals in these surroundings, but the influence of any one cue (e.g., a picture) may be masked by the competing stimuli (e.g., noticing an urgent message from a client while trying to respond to the study email, getting an unexpected question from a teammate at the same time the participant opens the study message, overhearing desk mates discuss the latest football game while the participant tries to check his or her email). This rationale means that it is difficult to draw conclusions about the effectiveness of the current manipulation, especially due to the lack of field-studies in similar settings to use in comparison.

OCB-Es and Personality. Turning to the second half of the theoretical model, the rationale described above regarding the differing levels of support for the results related to eco-initiative versus eco-civic engagement and eco-helping OCB-Es may also help explain the

pattern of results for the moderation effect of openness to experience on OCB-Es, echoing conclusions in previous research (Busic-Sontic, Czap, & Fuerst, 2017). As mentioned in the introduction, employees face many competing priorities in the workplace (Lo, 2015; Renwick et al., 2016), so even when they have expanded personal resources due to experienced positive affect, there is potential that they can only devote a certain amount of energy into environmentally friendly behaviors given numerous competing workplace priorities (Lo, 2015; Renwick et al., 2016). When more highly open individuals experience positive affect, they may turn to eco-initiative OCB-Es to maintain their state because the lack of dependency on others means they have more freedom to explore the outcomes of flexible and abstract thinking (Brick & Lewis, 2016; Busic-Sontic et al., 2017). For example, it may require fewer personal resources substitute a non-disposable cup for water (i.e., eco-initiative) versus attending a company training on improving sustainability habits (i.e., eco-civic engagement) or getting coworkers to abandon disposable water cups (i.e., eco-helping).

Interestingly, the simple slopes test for the significant moderation effect did not support the influence of positive affect on OCB-Es at either 1 SD above or below the mean for openness. The latter result follows the rationale posited in the introduction: less open individuals tend to be inflexible and excel in tasks that do not require abstract thought (McCrae & Costa, 2003), for which OCB-Es are more likely to call. However, the lack of a significant relationship at 1 SD above the mean was surprising. Upon reflection, it may be that although abstract thinking is certainly useful for engaging in OCB-Es, it could also mean that the resulting ideas are too nebulous or complex to enact. Relatedly, high degrees of receptivity (McCrae & Costa, 2003) are preferred in this context because they imply that these individuals will be more interested in engaging in OCB-Es. However, if one is overly curious or too high on novelty seeking,

individuals could be so open to mental stimulation that the following through to actually engaging in any specific behaviors suffers. The implication from this finding is that both researchers and practitioners alike should contemplate that when it comes to OCB-Es, or perhaps PEBS more broadly, there may be more intricate relationships between this personality trait and desired outcomes than we have previously considered.

Regarding the other personality trait tested in this study, the nonsignificance of hypotheses regarding conscientiousness are not altogether surprising, as previous research has offered reasons to question a positive linkage between this personality trait and green behaviors (e.g., orderliness linked to traditionalism; Markowitz et al., 2012). From a theoretical perspective, it may be that employees with higher levels of conscientiousness are focused on accomplishments that are more salient to their actual organizational role. With so many cues competing for attention in the work setting, distal, more nebulous environmental concerns often take a backseat to more pressing, daily events (Lo, 2015). This may especially be the case for conscientious employees; as they are already prone to achieving goals and focused on performing their work duties, expending extra effort on actions that tend to be less directly tied to job or task success may not be in their nature.

This same logic informs the nonsignificant moderation effect of conscientiousness on the relationship between positive affect and OCB-Es. When highly conscientious employees experience increased affect, the expanded personal resources are channeled into more traditional organizational behaviors (e.g., increased job performance or OCBs) rather than OCB-Es. In other words, when conscientious employees experience state positive affect, they may be more drawn to achievements that reflect short-term duties (e.g., task performance, individual- or

organizationally-focused OCBs) versus the more nebulous, long-term environmental threats that lend themselves to OCB-Es (Lo, 2015; Renwick et al., 2016).

Finally, another contribution of this research is that the findings should deepen our understanding of the influence of individual differences on employees' engagement in OCB-Es. More specifically, one interesting implication from the results is that more consideration should be given to understanding the role of dispositional traits for OCB-Es versus traditional OCBs. For example, as understood from points mentioned above, conscientiousness is the strongest personality predictor of OCBs (Dalal, 2005; Organ & Ryan, 1995; Podsakoff et al., 2000) but has shown weaker results as related to OCB-Es. By contrast, researchers have regularly highlighted openness to experience as an important predictor of PEBs (Markowitz et al., 2012; Basic-Sontic et al., 2017), but the trait has received mixed reviews as related to OCBs (e.g., Elanain, 2007; Kumar, Bakhshi, & Rani, 2009). Taken together, these points support the position that OCB-Es are related but distinct constructs from general OCBs (Lamm et al., 2013). This suggests that perhaps organizational researchers should dive deeper into the distinctions between the constructs to determine the appropriate antecedents for OCB-Es and, more broadly, all workplace PEBs.

Practical Implications

As discussed in the introduction, organizations stand to benefit greatly from increasing the amount of OCB-Es performed by employees (Hill et al., 2011; Ones & Dilchert, 2012), especially as voluntary behaviors comprise the majority of individual PEBs. Additionally, per Lamm and colleagues (2013), "OCB-Es indirectly help the organization in potentially many different ways, including reducing costs, enhancing firm reputation, and increasing employee satisfaction, commitment, and/or retention" (pg. 165). Further, the experience of positive

emotions broadens one's attentional focus, individuals increase emotional reserves that allow them to consider alternative courses of action (Fredrickson, 2000); in this case, those actions manifest as OCB-Es. As such, this investigation is a helpful step forward for Industrial-Organizational/Human Resource Management professionals seeking avenues for promoting OCB-Es in the workplace. It follows that the current findings lend themselves to recommendations for practitioners, as discussed in more detail in the following paragraphs.

One of the goals of the current study was to investigate whether building employees' personal resources (i.e., positive affect) in an unobtrusive manner might provide an avenue for employees to build OCB-Es into their daily routines. Although the specific intervention employed in this research was largely not supported, the findings surrounding positive affect suggest that incorporating positive psychological approaches into employees' routines could have a beneficial effect on engagement in OCB-Es. This could occur by generally creating a more positive atmosphere, actively encouraging positive emotion as related to the environment (e.g., inducing pride by boasting about green habits already in place; Bissing-Olson et al., 2013), and/or engaging employees in more structured interventions (e.g., the positive reflection or social connectedness interventions; Bono et al., 2013; Kaplan et al., 2014).

The support for the moderation effect of openness on the relationship between positive affect and eco-initiative OCB-Es, as well as its direct effect on civic-engagement OCB-Es should suggest to practitioners that they would do well to select highly open employees for spearheading organizational pro-environmental change efforts. Since workers who have higher levels of openness may be more likely to engage in OCB-Es, these individuals may also possess more passion about exploring ways to "green" the office. As such behaviors may very well help to maintain state positive affect for the actor (Fredrickson & Joiner, 2002), both the organization

and employee stand to benefit from recruiting individuals who are open to experience to participate in green activities.

Limitations

As with all research, while the current findings offer several major theoretical and practical insights, there are several limitations to take into consideration. First, the cross-sectional nature of this study makes it difficult to claim causality. To statistically reduce this risk (i.e., that the affective stimulus impacted employees' OCB-Es, which in turn influenced their affective experience), I conducted post-hoc analyses with the exposure to the stimulus as the predictor, each category of OCB-Es as the proximal outcomes, and positive affect as the distal outcome. Results (see Table 4) showed that none of the indirect effects were significant using one-tailed or two-tailed significance tests ($p > .05$). This further supported the hypotheses that the subtle affective stimulus influenced employees' affective feelings that in turn impacted employees' performance and well-being. Additionally, on a conceptual level, dispositional traits often precede workplace behaviors by influencing employees' predispositions to courses of action (Ilies, Scott, & Judge, 2006). Another consideration related to interpretation of the results is that the current study collected only self-reported data, raising concerns about the possibility that the relationships demonstrated may be due to measurement error rather than the theoretical basis for the hypotheses. However, the author attempted to mitigate this issue by following the best practices outlined in previous research (e.g., Podsakoff & Organ, 1986) and assessing the dependent variable after the items measuring the independent variables.

On a different note, practical constraints to data collection (e.g., the inability to conduct a longitudinal study) may have negatively impacted the success of the intervention. For example, many OCB-Es may occur with relatively low frequency (e.g., compared to task performance), making it difficult to gain a complete picture of the relationships among variables. Additionally, participants were recruited by posting on organizational social media platforms, requiring more effort to voluntarily opt-in. Not only did this limit the amount of exposure to employees who might have volunteered if asked directly, but it also introduced the possibility of indirect range restriction. Further, because it was not feasible to use paper-and-pencil surveys for the current sample (as in the study conducted by Hu and colleagues; 2017) to introduce employees to the stimulus regularly throughout the day, the manipulation was conducted via email. While participants consented to receiving emails during the workday on the half hour, it may still have been an inconvenience. This would explain the lack of a relationship between the stimulus and positive affect. This is consistent with Seligman and colleagues' (2005) general suggestion that "as we continue to develop and test exercises, we must pay particular attention to the ease with which the exercise can be integrated into an individual's daily schedule" (p. 420).

Finally, there is also the role of the work environment to consider in targeting OCB-Es. Recruiting a sample from a large, American corporation with employees based in multiple locations and performing varied types of jobs certainly increases the validity of the results, but it could also lead to certain drawbacks. For example, the employees who participated in this study often have virtual teams; a lack of perceived opportunities to support co-workers may be partially responsible for the lack of significant findings surrounding eco-helping OCB-Es. Additionally, the office buildings have already taken some steps to promote green behavior, so

employees may not have recognized if they were engaging in eco-civic engagement OCB-Es (e.g., using non-disposable cups for water that have been provided by the organization).

Future Directions

Despite the limitations, this study has produced many potential avenues for organizational research. First, the current study sought to build upon the findings from the research conducted by Hu and colleagues (2017); thus, the subtle affective stimulus consisted of someone smiling against a neutral background. However, the indirect effect of the subtle stimulus on OCB-Es might be stronger if it were more directly tied to the outcome of interest. Since the relationship between positive affect and all three types of OCB-Es suggests that those who experience enhanced mood have greater intentions to engage in these behaviors, specifically tying aspects of the natural world into the picture (e.g., someone smiling against a verdant backdrop) may make green behaviors more salient. This is consistent with the notion that aligning conceptual specificity between predictors and outcomes of interest results in stronger theoretical and practical contributions (Landy & Conte, 2016).

Such a rationale is also in line with primary and secondary appraisal processes in which emotion-based reactions derive from evaluation of a stimulus as both motivationally relevant and congruent (Mauss & Robinson, 2009). While previous research has demonstrated that pictures of faces produce the strongest reactions (Izard, 1977, Greenwald et al., 1989), this does not mean that other types of subtle affective stimuli are *not* effective. If the affective stimulus is more closely tied to nature, it could more strongly connect the ideas of experienced positivity with the environment via an additional and/or alternative cognitive pathway, thus prompting the desired specific behavioral state. For example, it may be that the perception of a conceptually relevant

subtle stimulus activates goals (i.e., desired outcomes or behaviors that one hopes to attain; Custer & Aarts, 2005) to act in a more sustainable manner. More specifically, exposition to a stimulus more directly tied to nature could both trigger individuals' biophilia as well as the impetus to act in ways that protect the environment; in the workplace, this could translate into OCB-Es. Taken together, these points suggest that future research would benefit from exploring the effectiveness of other conceptually relevant stimuli as a way to increase OCB-Es via inducing positive affect.

Secondly, another potential area for future research as related to positive affect includes deeper investigation into the nuances of positive affect as related to employee OCB-Es. Given the pattern of results in the current study, this could include deeper investigation into the role of certain types of positive affect or individual differences. For example, the current study focused on inducing general positive affect; however, previous research (Bissing-Olson et al., 2013) has implied that discrete positive emotions (e.g., contentedness) may influence workplace PEBs to varying degrees. Further research into the linkage among types of affect and OCB-Es would have theoretical and practical implications for organizations looking to boost voluntary PEBs among their employees.

Finally, as mentioned, it may be that the delivery method of the stimulus was partially responsible for the results of the current research. In the experiment conducted by Hu and colleagues, the smiling picture was presented to participants as part of a paper-and-pencil survey. Hard copies materials can produce both higher reliability (Idleman, 2003) and response rates (Cronk & West, 2004) compared to web-based delivery. Perhaps this contributed to the small effect sizes found in the current research in conjunction with the diminished effect sizes that one expects to find in field vs. laboratory settings (Ones & Dilchert, 2012). Future research should

delve more deeply into the administration of subtle affective stimuli to understand how it might affect the effectiveness of a given cue.

CHAPTER V

CONCLUSIONS

While the desire for organizations to “go green” has dramatically risen in recent years, industrial-organizational research about how to implement greener practices has not kept pace. The current experimental field-study serves as an initial step towards better understanding how to actively change voluntary pro-environmental behaviors at the individual level. Further, the findings from this study provide greater insight into the role that both state-level (i.e., positive affect) and trait-level (i.e., openness to experience) constructs may play in the occurrence of OCB-Es. More specifically, the results demonstrate that positive affect is a key factor for employees’ voluntary PEBs and suggest that openness to experience may also serve to increase certain types of OCB-Es. This research, and the conclusions drawn from it, provide numerous avenues for future research in an increasingly important organizational domain.

REFERENCES

- Amisano, D. C. (2017). The relationship between ethical leadership and sustainability in small businesses (Doctoral dissertation). Available from Walden University, ProQuest Dissertations and Theses database. (ProQuest No. 10256296)
- Andersson, L. M., Giacalone, R. A., & Jurkiewicz, C. L. (2007). On the relationship of hope and gratitude to corporate social responsibility. *Journal of Business Ethics, 70*, 401-409. <https://doi.org/10.1007/s10551-006-9118-1>
- Andersson, L., Jackson, S. E., & Russell, S. V. (2013). Greening organizational behavior: An introduction to the special issue. *Journal of Organizational Behavior, 34*, 151-155. <https://doi.org/10.1002/job.1854>
- Bargh, J. A., & Chartrand, T. L. (2000). The mind in the middle. In H. Reiss & C. Judd (Eds.), *Handbook of research methods in social and personality psychology* (pp. 253-285). New York, NY: Cambridge University Press.
- Barrick, M. R., & Mount, M. K. (1991). The Big Five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*, 1-26. doi: 10.1111/j.1744-6570.1991.tb00688.x
- Barrick, M. R., Mount, M. K., & Judge, T. A. (2001). Personality and performance at the beginning of the new millennium: What do we know and where do we go next? *Personality and Performance, 9*, 9-30. <https://doi.org/10.1111/1468-2389.00160>
- Bissing-Olson, M. J., Iyer, A., Fielding, K. S., & Zacher, H. (2013). Relationships between daily affect and pro-environmental behavior at work: The moderating role of pro-environmental attitude. *Journal of Organizational Behavior, 34*, 156-175. doi: 10.1002/job.1788

- Boiral, O. (2009). Greening the corporation through organizational citizenship behaviors. *Journal of Business Ethics*, *87*, 221-236. doi: 10.1007/s10551-008-9881-2
- Boiral, O., & Paillé, P. (2012). Organizational citizenship behaviour for the environment: Measurement and validation. *Journal of Business Ethics*, *109*, 431-445.
<https://doi.org/10.1007/s10551-011-1138-9>
- Boiral, O., Paillé, P., & Raineri, N. (2015). The nature of employees' pro-environmental behaviors. In J. Roberston and J. Barling (Eds.), *The psychology of green organizations*. (pp. 12-32). New York, NY: Oxford University Press.
<http://hdl.handle.net/20.500.11794/14043>
- Bono, J. E., Glomb, T. M., Shen, W., Kim, E., & Koch, A. J. (2013). Building positive resources: Effects of positive events and positive reflection on work stress and health. *Academy of Management Journal*, *56*, 1601–1627. doi: 10.5465/amj.2011.0272
- Borman, W. C., Penner, L. A., Allen, T. D., & Motowidlo, S. J. (2001). Personality predictors of citizenship performance. *International Journal of Selection and Assessment*, *9*, 52-69.
<https://doi.org/10.1111/1468-2389.00163>
- Brick, C., & Lewis, G. J. (2016). Unearthing the “Green” personality: Core traits predict environmentally friendly behavior. *Environment and Behavior*, *48*, 635-658. doi: 10.1177/0013916514554695
- Basic-Sontic, A., Czap, N. V., & Fuerst, F. (2017). The role of personality traits in green decision-making. *Journal of Economic Psychology*, *62*, 313-328.
<https://doi.org/10.1016/j.joep.2017.06.012>

- Calvo, M. G., & Nummenmaa, L. (2007). Processing of unattended emotional visual scenes. *Journal of Experimental Psychology: General*, *136*, 347-369. doi: [10.1037/0096-3445.136.3.347](https://doi.org/10.1037/0096-3445.136.3.347)
- Costa, P. T., & McCrae, R. R. (1996). Mood and personality in adulthood. In C. Magai, and S.H. McFadden (Eds.), *Handbook of emotion, adult development, and aging* (pp. 369-383). London, UK: Elsevier
- Cronk, B. C., & West, J. L. (2002). Personality research on the Internet: A comparison of Web-based and traditional instruments in take-home and in-class settings. *Behavior Research Methods, Instruments, & Computers*, *34*, 177-180.
- Custer, R., & Aarts, H. (2005). Positive affect as implicit motivator: On the nonconscious operation of behavioral goals. *Journal of Personality and Social Psychology*, *89*, 129-142. doi: [10.1037/0022-3514.89.2.129](https://doi.org/10.1037/0022-3514.89.2.129)
- Daily, B.F., Bishop, J.W., & Govindarajulu, N. (2009). A Conceptual Model for Organizational Citizenship Behavior Directed Toward the Environment. *Business & Society*, *48*, 243–256.
- Dalal, R. S. (2005). A meta-analysis of the relationship between organizational citizenship behavior and counterproductive work behavior. *Journal of Applied Psychology*, *90*, 1241-1255. <https://www.researchgate.net/publication/7453313>
- Davis, J. L., Green, J. D., & Reed, A. (2009). Interdependence with the environment: Commitment, interconnectedness, and environmental behavior. *Journal of Environmental Psychology*, *29*, 173-180. doi: [10.1016/j.jenvp.2008.11.001](https://doi.org/10.1016/j.jenvp.2008.11.001)
- Egri, C. P., & Herman, S. (2000). Leadership in the North American environmental sector: Values, leadership styles, and contexts of environmental leaders and their

organizations. *Academy of Management Journal*, 43, 571-604.

<https://doi.org/10.5465/1556356>

Elanain, H. A. (2007). Relationship between personality and organizational citizenship behavior:

Does personality influence employee citizenship. *International Review of Business Research Papers*, 3, 31-43.

Elsbach, K. D., and Pratt, M. G. 2008. The physical environment in organizations. *Academy of*

Management Annals, 1, 181–224. doi: 10.1080/078559809

Fredrickson, Barbara. (2000). Cultivating positive emotions to optimize health and

well-being. *Prevention & Treatment*, 3, 0001a. <http://dx.doi.org/10.1037/1522-3736.3.1.31a>

Fredrickson, B. L., & Joiner, T. (2002). Positive emotions trigger upward spirals toward

emotional well-being. *Psychological Science*, 13, 172-175. <https://doi.org/10.1111/1467-9280.00431>

Giacalone, R. A., Paul, K., & Jurkiewicz, C. L. (2005). A preliminary investigation into the role

of positive psychology in consumer sensitivity to corporate social performance. *Journal of Business Ethics*, 58, 295-305. <https://doi.org/10.1007/s10551-004-5970-z>

Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the

lower-level facets of several five-factor models. *Personality Psychology in Europe*, 7, 7-28.

Greenwald, A. G., Klinger, M. R., & Liu, T. J. (1989). Unconscious processing of dichoptically

masked words. *Memory & Cognition*, 17, 35–47. doi: 10.3758/BF03199555

- Grinde, B., & Patil, G. G. (2009). Biophilia: Does visual contact with nature impact on health and well-being?. *International Journal of Environmental Research and Public Health*, 6, 2332-2343. <https://doi.org/10.3390/ijerph6092332>
- Hartig, T., Kaiser, F.G., & Bowler, P.A. (2001). Psychological restoration in nature as a positive motivation for ecological behavior. *Environment and Behavior*, 33, 590-607.
<https://doi.org/10.1177/00139160121973142>
- Hill, L., Ones, D. S., Dilchert, S., Wiernik, B. M., Klein, R. M., & D'Mello, S. (2011, April). *Employee green behaviors in Europe: A cross-cultural taxonomic investigation*. In S. Dilchert (Chair), Focusing on employees to achieve environmentally sustainable organizations. Symposium conducted at the 26th Annual Conference of the Society for Industrial and Organizational Psychology, Chicago, IL.
- Hirsh, J. B. (2010). Personality and environmental concern. *Journal of Environmental Psychology*, 30, 245-248. <https://doi.org/10.1016/j.jenvp.2010.01.004>
- Hirsh, J. B., & Dolderman, D. (2007). Personality predictors of consumerism and environmentalism: A preliminary study. *Personality and Individual Differences*, 43, 1583-1593. <https://doi.org/10.1016/j.paid.2007.04.015>
- Hu, X., & Kaplan, S. (2015). The effects of unconsciously derived affect on task satisfaction and performance. *Journal of Business and Psychology*, 30, 119-135.
<https://doi.org/10.1007/s10869-013-9331-8>
- Hu, X., Zhan, Y., Yao, X., & Garden, R.C. (2017). Picture this: The effects of subtle active stimuli in organizations. *Journal of Organizational Behavior*. doi: 10.1002/job.2177
- Hülshager, U. R., Alberts, H. J., Feinholdt, A., & Lang, J. W. (2013). Benefits of mindfulness at work: The role of mindfulness in emotion regulation, emotional exhaustion, and job

- satisfaction. *Journal of Applied Psychology*, 98, 310-325.
<http://dx.doi.org/10.1037/a0031313>
- Idleman, L. (2003, April). *Comparing responses to web and mail-based surveys*. Poster presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Ilies, R., Scott, B. A., & Judge, T. A. (2006). The interactive effects of personal traits and experienced states on intraindividual patterns of citizenship behavior. *Academy of Management Journal*, 49, 561-575. doi:10.5465/AMJ.2006.21794672
- Izard, C. E. (1977). *Human emotions*. New York, NY: Plenum Press.
- Judge, T. A., Scott, B. A., & Ilies, R. (2006). Hostility, job attitudes, and workplace deviance: Test of a multilevel model. *Journal of Applied Psychology*, 91, 126-138.
<http://dx.doi.org.proxy.lib.odu.edu/10.1037/0021-9010.91.1.126>
- Kals, E., & Müller, M. (2012). Emotions and environment. In S. D. Clayton (Ed.), *The Oxford Handbook of Environmental and Conservation Psychology* (pp. 128-147). Oxford, UK: Oxford University Press. <http://edoc.ku-eichstaett.de/9628/>
- Kaplan, S., Bradley-Geist, J. C., Ahmad, A., Anderson, A., Hargrove, A. K., & Lindsey, A. (2014). A test of two positive psychology interventions to increase employee well-being. *Journal of Business and Psychology*, 29, 367-380. doi: 10.1007/s10869-013-9319-4
- Kumar, K., Bakhshi, A., & Rani, E. (2009). Linking the 'Big Five' personality domains to organizational citizenship behavior. *International Journal of Psychological Studies*, 1, 73-81.

- Lamm, E., Tosti-Kharas, J., & Williams, E. G. (2013). Read this article, but don't print it: Organizational citizenship behavior toward the environment. *Group & Organization Management, 38*, 163-197. <https://doi.org/10.1177/1059601112475210>
- Landy, F. J., & Conte, J. M. (2016). *Work in the 21st century: An introduction to Industrial and Organizational Psychology*. New York, NY: John Wiley & Sons.
- LePine, J. A., Colquitt, J. A., & Erez, A. (2000). Adaptability to changing task contexts: Effects of general cognitive ability, conscientiousness, and openness to experience. *Personnel Psychology, 53*, 563-593. <https://doi.org/10.1111/j.1744-6570.2000.tb00214.x>
- Lo, S. H. (2015). Individual determinants of workplace pro-environmental behaviors. In J. L. Robertson, & J. B. Barling (Eds.), *The psychology of green organizations* (pp. 119-140). Oxford, United Kingdom: Oxford University Press.
- Loria, K. (2015). One graphic shows exactly who is responsible for climate change. *Business Insider*. Retrieved from <http://www.businessinsider.com/who-is-responsible-for-climate-change-2015-7>
- Markowitz, E. M., Goldberg, L. R., Ashton, M. C., & Lee, K. (2012). Profiling the “pro-environmental individual”: A personality perspective. *Journal of Personality, 80*, 81-111. <https://doi.org/10.1111/j.1467-6494.2011.00721.x>
- Mauss, I. B., & Robinson, M. D. (2009). Measures of emotion: A review. *Cognition and Emotion, 23*, 209-247. doi: 10.1080/02699930802204677
- McCrae, R. R., & Costa, P. T. (2003). *Personality in adulthood: A five-factor theory perspective*. New York: Guilford Press.
- Mesmer-Magnus, J., Viswesvaran, C., & Wiernik, B. M. (2012). The role of commitment in bridging the gap between organizational sustainability and environmental sustainability.

- In S. E. Jackson, D. S. Ones, & S. Dilchert (Eds.), *Managing HR for environmental sustainability* (pp.155–186). San Francisco, CA: Jossey-Bass/Wiley.
- Milfont, T. L., & Sibley, C. G. (2012). The big five personality traits and environmental engagement: Associations at the individual and societal level. *Journal of Environmental Psychology, 32*, 187-195. <https://doi.org/10.1016/j.jenvp.2011.12.006>
- Motowidlo, S.J., & Kell, H.J. (2012). Job Performance. In I.B. Weiner (Ed.), *Handbook of psychology, second edition*. New York, NY: John Wiley & Sons, Inc.
- Ones, D., & Dilchert, S. (2012). Environmental sustainability at work: A call to action. *Industrial and Organizational Psychology, 5*, 444-466. doi:10.1111/j.1754-9434.2012.01478.x
- Ones, D. S., & Dilchert, S. (2012a). Employee green behaviors. In S. E. Jackson, D. S. Ones & S. Dilchert (Eds.), *Managing HR for environmental sustainability* (pp. 85–116). San Francisco, CA: Jossey Bass/Wiley.
- Organ, D. W. (1988). *Organizational citizenship behavior: The good soldier syndrome*. Lexington, MA: Lexington Books.
- Organ, D. W., & Ryan, K. (1995). A meta-analytic review of attitudinal and dispositional predictors of organizational citizenship behavior. *Personnel Psychology, 48*, 775-802. <https://doi.org/10.1111/j.1744-6570.1995.tb01781.x>
- Podsakoff, P. M., MacKenzie, S. B., Paine, J. B., & Bachrach, D. G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journal of Management, 26*, 513-563. <https://doi.org/10.1177/014920630002600307>

- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, *12*, 531–544.
- Priyankara, H. P. R., Luo, F., Saeed, A., Nubuor, S. A., & Jayasuriya, M. P. F. (2018). How does leader's support for environment promote organizational citizenship behaviour for environment? A multi-theory perspective. *Sustainability*, *10*, 271-291.
<https://doi.org/10.3390/su10010271>
- Renwick, D. W., Jabbour, C. J., Muller-Camen, M., Redman, T., & Wilkinson, A. (2016). *Contemporary Developments in Green (Environmental) HRM scholarship*, *2*, 114-128.
<https://doi.org/10.1080/09585192.2015.1105844>
- Russell, J. A., & Carroll, J. M. (1999). On the bipolarity of positive and negative affect. *Psychological Bulletin*, *125*, 3-30.
<http://dx.doi.org.proxy.lib.odu.edu/10.1037/0033-2909.125.1.3>
- Ruys, K. I., & Stapel, D. A. (2008). Emotion Elicitor or Emotion Messenger? Subliminal priming reveals two faces of facial expressions. *Psychological Science*, *19*, 593-600.
<https://doi.org/10.1111/j.1467-9280.2008.02128.x>
- Seligman, M. E., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist*, *60*, 410-421.
- Shantz, A., & Latham, G. (2011). The effect of primed goals on employee performance: Implications for human resource management. *Human Resource Management*, *50*, 289-299. <https://doi.org/10.1002/hrm.20418>
- Terrier, L., Kim, S., & Fernandez, S. (2016). Who are the good organizational citizens for the environment? An examination of the predictive validity of personality traits. *Journal of Environmental Psychology*, *48*, 185-190. <https://doi.org/10.1016/j.jenvp.2016.10.005>

- Smith, A. M., & O'Sullivan, T. (2012). Environmentally responsible behaviour in the workplace: An internal social marketing approach. *Journal of Marketing Management*, 28, 469-493. <https://doi.org/10.1080/0267257X.2012.658837>
- Spector, P. E., & Fox, S. (2002). An emotion-centered model of voluntary work behavior: Some parallels between counterproductive work behavior and organizational citizenship behavior. *Human Resource Management Review*, 12, 269-292. [https://doi.org/10.1016/S1053-4822\(02\)00049-9](https://doi.org/10.1016/S1053-4822(02)00049-9)
- Unsworth, K., Dmitrieva, A., & Adriasola, E. (2013). Changing behavior: Increasing the effectiveness of workplace interventions in creating pro-environmental behavior change. *Journal of Organizational Behavior*, 34, 211–229. <https://doi.org/10.1002/job.1837>
- Veitch, L., Dulvy, N. K., Koldewey, H., Lieberman, S., Pauly, D., Roberts, C. M., & Baillie, J. E. (2012). Avoiding empty ocean commitments at Rio+ 20. *Science*, 336, 1383-1385. doi: 10.1126/science.1223009
- Verdugo, V. C. (2012). The positive psychology of sustainability. *Environment, Development and Sustainability*, 14, 651-666. <https://doi.org/10.1007/s10668-012-9346-8>
- Wang, G., He, Q., Meng, X., Locatelli, G., Yu, T., & Yan, X. (2017). Exploring the impact of megaproject environmental responsibility on organizational citizenship behaviors for the environment: A social identity perspective. *International Journal of Project Management*, 35, 1402-1414. <https://doi.org/10.1016/j.ijproman.2017.04.008>
- Watson, D. (2000). Basic problems in positive mood regulation. *Psychological Inquiry*, 11, 205-209. <https://www.jstor.org/stable/1449806>

- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063-1070. <http://dx.doi.org/10.1037/0022-3514.54.6.1063>
- Watson, D., & Pennebaker, J. W. (1989). Health complaints, stress, and distress: Exploring the central role of negative affectivity. *Psychological Review*, *96*, 234-254. doi: [10.1037/0033-295X.96.2.234](http://dx.doi.org/10.1037/0033-295X.96.2.234)
- Watson, D., Wiese, D., Vaidya, J., & Tellegen, A. (1999). The two general activation systems of affect: Structural findings, evolutionary considerations, and psychobiological evidence. *Journal of Personality and Social Psychology*, *76*, 820-838. <http://dx.doi.org.proxy.lib.odu.edu/10.1037/0022-3514.76.5.820>
- Weiss, H. M., & Cropanzano, R. (1996). Affective events theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In L.L. Cummings & B.M. Staw (Eds.). *Research in organizational behavior: An annual series of analytical essays and critical reviews* (Vol. 18, pp. 1-74). US: Elsevier Science/JAI Press.
- Wilson, E. O. (2017). Biophilia and the conservation ethic. In I. Myerud (Ed.) *Evolutionary perspectives on environmental problems* (pp. 263-272). US: Routledge.
- Winkielman, P., Berridge, K. C., & Wilbarger, J. L. (2005). Unconscious affective reactions to masked happy versus angry faces influence consumption behavior and judgments of value. *Personality and Social Psychology Bulletin*, *31*, 121-135. <https://doi.org/10.1177/0146167204271309>
- Zacher, H., & Bissing-Olson, M. J. (2018). Between-and within-person variability in employee pro-environmental behaviour. In H. Zacher & M.J. Bissing-Olson (Eds.) *Research*

Handbook on Employee Pro-Environmental Behaviour, (pp. 128-147). Northampton, USA: Edward Elgar Publishing. <https://doi.org/10.4337/9781786432834.00013>

Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35, 151-175. <http://dx.doi.org/10.1037/0003-066X.35.2.151>

Zajonc, R. B. (2000). Feeling and thinking: Closing the debate over the independence of affect. In J. P. Forgas, (Ed.), *Studies in emotion and social interaction, second series* (pp. 31-58). New York, NY: Cambridge University Press.

APPENDIX A
PRE-MANIPULATION ANNOUNCEMENT

Would you like to be entered to win a \$70 gift card to the coffee shop of your choice and support a Booz Allen colleague at the same time? I am currently seeking employees to participate in dissertation research, focusing on workplace experiences. Here's what's involved:

- A baseline survey (est. time for completion: 5-7 minutes).
- In 1-2 business days after you complete the survey in the above link, you'll receive emails on the half hour (between 8:30-4:30 EST) for one day. Each email should only require 10-20 seconds of your time. For each message you respond to, you'll be entered to win a \$70 gift card to the coffee shop of your choice.
- At the end of the day, I'll send you a final survey (est. time for completion: 10-15 minutes).

APPENDIX B EXPERIMENTAL MANIPULATION

Hello,

Have you dialed in to at least one conference call in the last half hour for work purposes? Please respond using the voting option at the top of this email.



APPENDIX C
POST-MANIPULATION EMAIL

Hello,

THANK YOU for sharing your day with us! We would like to quickly ask you a few more questions about your day. Remember, by completing this survey you will be automatically entered to win a \$70 gift card to the coffee shop of your choice for EACH email to which you submitted a response!

Again, we greatly appreciate your time and thank you for your participation.

Sincerely,

APPENDIX D
POSITIVE AND NEGATIVE AFFECT SCHEDULE (PANAS)

Items

This scale consists of a number of words that describe different feelings and emotions. Indicate the extent to which these words describe how you generally/currently feel on a scale from (1) not at all to (5) extremely.

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

Note. From Watson, Tellegen, and Clark (1988). Items 1, 3, 5, 9, 10, 12, 14, 16, 17, 19 refer to positive affect, items 2, 4, 6, 7, 8, 11, 13, 15, 18, 20 refer to negative affect. Responses range from 1 (*not at all*) to 5 (*extremely*).

APPENDIX E
INTERNATIONAL PERSONALITY ITEM POOL (IPIP)

Items

Please indicate how well each of the following statements describes you on a scale from (1) strongly disagree to (5) strongly agree.

Openness

1. Have difficulty understanding abstract ideas (R)
2. Am not interested in abstract ideas (R)
3. Do not have a good imagination (R)
4. Spend time reflecting on things
5. Am quick to understand things
6. Have a vivid imagination
7. Use difficult words
8. Have a rich vocabulary
9. Have excellent ideas
10. Am full of ideas

Conscientiousness

1. Leave my belongings around (R)
 2. Often forget to put things back in their proper place (R)
 3. Make a mess of things (R)
 4. Shirk my duties (R)
 5. Pay attention to details
 6. Am exacting in my work
 7. Am always prepared
 8. Like order
 9. Follow a schedule
 10. Get chores done right away
-

Note. From Goldberg (1999). Responses range from 1 (*not at all*) to 5 (*extremely*). Items marked (R) are reverse scored.

APPENDIX F
OCB-E MEASURE

Items

In the past month, how often have you engaged in the following behaviors on a scale from (1) less than once per month to (5) daily?

Eco-initiative

1. In my work, I weigh the consequences of my actions before doing something that could affect the environment.
2. I voluntarily carry out environmental actions and initiatives in my daily work activities
OCBE
3. I make suggestions to my colleagues about ways to protect the environment more effectively, even when it is not my direct responsibility

Eco-civic engagement

4. I actively participate in environmental events organized in and/or by my company
5. I undertake environmental actions that contribute positively to the image of my organization
6. I stay informed of my company's environmental initiatives
7. I volunteer for projects, endeavors or events that address environmental issues in my organization

Eco-helping

8. I spontaneously give my time to help my colleagues take the environment into account in everything they do at work
9. I encourage my colleagues to adopt more environmentally conscious behavior
10. I encourage my colleagues to express their ideas and opinions on environmental issues

Note. From Boiral and Paille (2012). Responses range from 1 (*completely disagree*) to 5 (*completely agree*).

APPENDIX G
DEBRIEFING MEASURE

Items

1. What do you think is the purpose of this experiment?
 2. What do you think this experiment was trying to uncover?
 3. Did you think that the information sheet you were given at the beginning of [the day] was related in any way to your performance during your work day?
 - 3a. If so, how?
 4. Did anything in the emails you received affect what you did?
-

Note. From Bargh and Chartrand (2000).

**APPENDIX H
STUDY HYPOTHESES**

Hypothesis
H1 The subtle stimulus positively influences employees' positive affect.
H2a The subtle stimulus positively influences employees' eco-initiative via its effects on positive affect.
H2b The subtle stimulus positively influences employees' eco-civic engagement via its effects on positive affect.
H2c The subtle stimulus positively influences employees' eco-helping OCB-Es via its effects on positive affect.
H3a Openness has a positive relationship with eco-initiative OCB-Es.
H3b Openness has a positive relationship with eco-civic engagement OCB-Es.
H3c Openness has a positive relationship with eco-helping OCB-Es.
H4a Openness to experience moderates the effect of positive affect on eco-initiative such that the positive relationship between positive affect and OCB-Es is enhanced when individuals have higher levels of openness.
H4b Openness to experience moderates the effect of positive affect on eco-civic engagement such that the positive relationship between positive affect and OCB-Es is enhanced when individuals have higher levels of openness.
H4c Openness to experience moderates the effect of positive affect on eco-helping behaviors such that the positive relationship between positive affect and OCB-Es is enhanced when individuals have higher levels of openness.
H5a Conscientiousness has a positive relationship with eco-initiative OCB-Es.
H5b Conscientiousness has a positive relationship with eco-civic engagement OCB-Es.
H5c Conscientiousness has a positive relationship with eco-helping OCB-Es.
H6a Conscientiousness moderates the effect of positive affect on eco-initiative OCB-Es such that the positive relationship between positive affect and OCB-Es is enhanced when individuals have higher levels of conscientiousness.

- H6b Conscientiousness moderates the effect of positive affect on eco-civic engagement OCB-Es such that the positive relationship between positive affect and OCB-Es is enhanced when individuals have higher levels of conscientiousness.
- H6c Conscientiousness moderates the effect of positive affect on eco-helping OCB-Es such that the positive relationship between positive affect and OCB-Es is enhanced when individuals have higher levels of conscientiousness.
- H7 The indirect effect of the subtle stimulus on OCB-Es via positive affect is more strongly positive for employees with higher levels of openness to experience.
- H8 The indirect effect of the subtle stimulus on OCB-Es via positive affect is more strongly positive for employees with higher levels of conscientiousness.
-

APPENDIX I

Table 4.

Additional Indirect Effect Analyses for Reverse Causality

Indirect Effect	Indirect Effect	90% Confidence Interval
Affective stimulus → Eco-Initiative → Positive Affect	.1092	[-.1315, .1455]
Affective stimulus → Eco-civic engagement → Positive Affect	.0368	[-.0383, .1276]
Affective stimulus → Eco-helping → Positive Affect	.0210	[-.0744, .1141]

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Hu, X., Jimenez, W., **Garden, R.C.**, Xie, X., (August, 2019) Job performance and the PERMA framework of Subjective Well-Being: U.S.-China Multi-Group Comparisons. Submitted to the 80th Annual Meeting of the Academy of Management. Vancouver, Canada.

Garden, R. C., Hu, X., Jimenez, W. P., & Kenneally, C. (2018, April). Predicting intraindividual patterns of OCB-Es: Development of a cross-level model. Paper presented at the 33rd Annual Conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Hu, X. (PI), Jimenez, W. P. (Co-PI), & **Garden, R.C.**(Co-PI), & Xie, X. (Co-PI). (2018). The Influence of Culture on the Relationship between Employees' Subjective Well-Being and Job Performance. The Bruce and Jane Walsh Grant in Memory of John Holland, *American Psychological Foundation*, \$7,663.

Garden, R. C., Hu, X., Jimenez, W. P., & Kenneally, C. (2018, April). Relationships between employee well-being and performance: A PERMA approach. Paper presented at the 33rd Annual Conference of the Society for Industrial and Organizational Psychology, Chicago, IL.

Garden, R.C., Hu, X., Zhan, Y., & Wei, F. (2017). The role of workplace popularity: Links to employee characteristics and supervisor-rated outcomes. *Journal of Leadership and Organizational Studies*.

Garden, R.C., Hu, X., Zhan, Y., Yao, X. (2017). Popularity procurement and pay off: Antecedents and consequences of popularity in the workplace. *Journal of Business and Psychology*. doi: 10.1007/s10869-017-9494-9

Cabrera-Caban, E.L., **Garden, R.C.**, Litano, M.L., Landers, R.L. (2017). A meta-analysis of Appreciative Inquiry interventions. Poster to be presented at the 29th American Psychological Society Annual Convention, Boston, MA.

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Hu, X., Zhan, Y., & **Garden, R.C.** (2017, April). *Chandler's work laugh: Surface acting in interactions with leaders*. Poster to be presented at the 32st Annual Conference of the Society for Industrial and Organizational Psychology, Orlando, FL.

Hu, X., White, A., **Garden, R.C.**, & Kenneally, C. (2017, April). *The "dark side" of mindfulness in the workplace*. Poster to be presented at the 32st Annual Conference of the Society for Industrial and Organizational Psychology, Orlando, FL.
