

# Polluted work: A self-control perspective on air pollution appraisals, organizational citizenship, and counterproductive work behavior



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## ABSTRACT

In rapidly developing nations such as China, air pollution is a growing concern. Nonetheless, theory and data on the impact of air pollution on employee behavior are essentially nonexistent. In this paper we employ a diary methodology to examine the within-individual effects of air pollution appraisals on employees' daily self-control resources and behavior. Multilevel data collected across two weeks from 155 employees located in urban China indicate that appraisals of air pollution severity deplete employees' self-control resources. This depletion in turn mediates the effects of air pollution appraisals on employee behavior, resulting in decreased organizational citizenship behavior and increased counterproductive work behavior. In support of the depletion perspective, the effects of air pollution appraisals are moderated by employees' trait self-control, and hold even after controlling for employees' daily negative affectivity and objective levels of air pollution. Implications for future research and practice are discussed.

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## 1. Introduction

Over the past several decades, industrialization has spread rapidly throughout the world. In China, the transition to an industrialized economy has been particularly dramatic (Johnson, 2013). Industrialization and urbanization have improved access to education, healthcare, and jobs, lifting millions of people out of poverty. Yet these trends have also brought many challenges, one of the most acute of which is air pollution. According to air quality standards issued by the European Union, only 1% of China's 560 million city dwellers breathe the air that is safe (Kahn & Yardley, 2007). China's Prime Minister has since vowed to "declare war against pollution" (Tatlow, 2014).

Empirical research has primarily focused on air pollution's health effects. Studies show that air pollution causes breathing difficulties, damages the lungs, and strains the cardiovascular system (Dockery & Pope, 1994; Gurgueira, Lawrence, Coull, Murthy, & Gonzalez-Flecha, 2002; Seaton, Godden, MacNee, & Donaldson, 1995). Data from the World Health Organization suggest that air

pollution accounts for millions of deaths each year, 88% of which occur in developing countries (World Health Organization, 2014). In China, 1.6 million people die from air pollution every year (Amos, 2016). Organizations such as the United Nations have in turn identified air pollution as a critical threat to global health (United Nations, 2014).

Although scholars have effectively demonstrated the health implications of air pollution in China and beyond, the literature is limited in important ways. First, scholars have tended to focus on objective air pollution metrics while ignoring the psychological experience of air pollution (i.e. individuals' appraisals of air pollution severity at a given point in time). Past research has demonstrated the unique importance of cognitive appraisals of potentially threatening stimuli, initiated by but distinct from the stimuli themselves (Lazarus, 1968; Lazarus & Folkman, 1984). This suggests a need to study how individuals appraise the pollution in the air on a daily basis and the unique effects of these appraisals. Second, scholars have tended to focus on air pollution's health effects while ignoring its psychological effects. Initial evidence suggests that air pollution is not only a problem for physical health, but can also act as a potent psychological stressor, with implications that are in need of study (Kondo et al., 2014). Finally, scholars have tended to ignore the implications of air pollution for the

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workplace, overlooking air pollution's effects on employees' daily behaviors as well as the processes underlying them.

Here, we address these issues by developing a model that integrates ego depletion theory (Baumeister, Bratslavsky, Muraven, & Tice, 1998) and cognitive appraisal theory (Lazarus, 1968) with the literature on the psychology of the natural environment (Herzog, Black, Fountaine, & Knotts, 1997; Kaplan & Kaplan, 1989). Specifically, we argue that daily appraisals of air pollution severity deplete employees' self-control resources, resulting in decreased organizational citizenship behavior (OCB) and increased counterproductive work behavior (CWB). Furthermore, we argue that the relationships among air pollution appraisals, self-control resource depletion, and employees' OCBs and CWBs hinge on employees' trait self-control, such that employees with low trait self-control should be particularly vulnerable to the depleting effects of air pollution appraisals. We test these relationships with a diary study of 155 workers in urban China conducted over the course of ten work days. In this way, we avoid the methodological limitations of cross-sectional surveys and directly model daily fluctuations at the within-individual level (Alliger & Williams, 1993).

In total, we make several key contributions. First, we contribute to research on organizations and the natural environment by demonstrating how air pollution appraisals shape employee outcomes. Second, we contribute to the literatures on depletion, OCBs and CWBs by demonstrating that appraisals of the natural environment can meaningfully affect these phenomena on a daily basis, and by shifting focus from between-level sources of variance to daily, within-level variation (Cortina & Landis, 2009). Finally, we contribute to the management literature in general by answering calls for a more global approach to management research and greater attention to the unique challenges of rapid industrialization and urbanization in China and the developing world (Gelfand, Leslie, & Fehr, 2008; Howard-Grenville, Buckle, Hoskins, & George, 2014; Tsui, 2007). Fig. 1 presents a summary of the theoretical model.

## 2. Theory and hypotheses

Self-control refers to an individual's capacity to volitionally override, modify, or suppress immediately desirable behavior in the pursuit of long-term goals (DeWall, Baumeister, Galliot, & Maner, 2008). According to ego depletion theory, acts of self-control draw from a common, global energy resource (Baumeister et al., 1998). Unfortunately, these resources are finite and many different forces can impinge upon them. Examples include thought suppression, attentional control, and impulse control (Hagger, Wood, Stiff, & Chatzisarantis, 2010). In the absence of sufficient recovery opportunities individuals become drained of their capacity for self-control, a state which Baumeister and Vohs (2007) refer to as depletion.

Within the workplace, scholars have shown that employees' self-control resources are depleted by factors such as emotional

labor (Trougakos, Beal, Cheng, Hideg, & Zweig, 2015; Yam, Fehr, Keng-Highberger, Klotz, & Reynolds, 2016), feelings of anxiety (McCarthy, Trougakos, & Cheng, 2016) and perceptions of unkind treatment (Rosen, Koopman, Gabriel, & Johnson, 2016). However, depletion research has mirrored the organizational literature writ large in its tendency to overlook the role of broad contextual forces such as economic conditions, labor markets, time, global events, and political stability (Johns, 2006). Drawing from this contextual perspective, we argue that employees' self-control resources may be depleted by their appraisals of the natural environment that surrounds them.

### 2.1. The impact of air pollution appraisals

Existing research on the link between self-control resources and the natural environment primarily focuses on the restorative potential of one's surroundings. Most notably, attention restoration theory argues that natural settings (parks, gardens, etc.) restore individuals' capacities for top-down information processing by allowing them to shift to a less intensive, bottom-up processing mode for a period of time (Kaplan & Kaplan, 1989). Put differently, attention restoration theory argues that the natural environment provides "a sense of psychological escape from the demands of directed attention" (Ratcliffe, Gatersleben, & Sowden, 2013, p. 222). Empirical support for this perspective is extensive. Both within and beyond the workplace, studies have demonstrated the restorative effects of nature walks (Berman, Jonides, & Kaplan, 2008), work that is conducted outside, and even the simple ability to view trees and parks through a window (Leather, Pyrgas, Beale, & Lawrence, 1998). Shifting from the positive effects of the natural environment to its potential negative effects, we argue that perceptions of polluted surroundings can facilitate resource depletion.

In focusing on perceptions of polluted surroundings, we move beyond scholars' tendency to focus solely on objective pollution levels. China's Ministry of Environmental Protection, mirroring other government agencies such as the United States' Environmental Protection Agency, measures air pollution according to the concentration of airborne contaminants in a given area. These include particulate matter, ozone, and carbon monoxide. However, consistent with Lazarus's (1968) cognitive appraisal theory, we argue that the psychological effects of air pollution should more closely relate to how a person appraises the air pollution at a given point in time. As noted by Honold, Beyer, Lakes, and van der Meer (2012), appraisals of the natural environment are complex and multifaceted. They are influenced not only by the physical properties of the environment, but also by personal attributes and situational forces. For example, attention restoration theory argues that natural environments are only restorative when they match an individual's desired range of stimulation (Amérigo, 2002; Francescato, 2002). An extensive set of factors is likely to contribute to an individual's appraisals of air pollution severity on a given day. Examples include the visibility of pollution in the air, amount of time

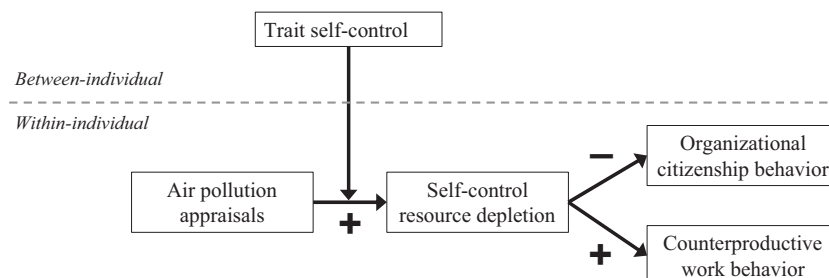


Fig. 1. A summary of the hypothesized effects of air pollution appraisals.

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