

BEHAVIOR & SOCIETY

# Darker Skies, Darker Behaviors

Why air pollution may increase crime



By Jackson Lu, Julia Lee, Francesca Gino, Adam Galinsky on January 16, 2018

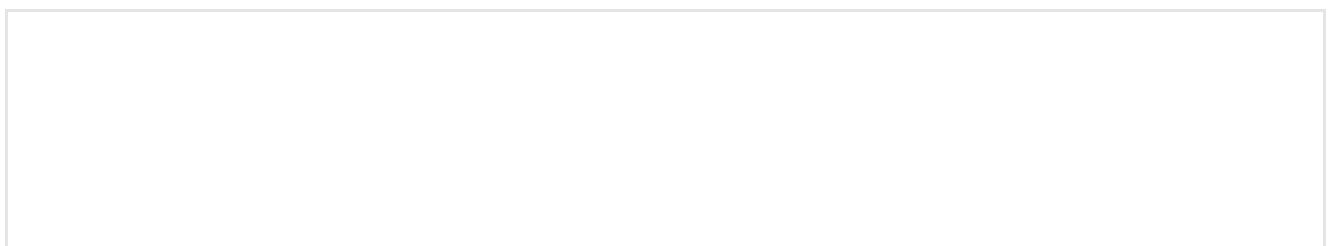


*Credit: Bart Valkenburg Getty Images*

Air pollution costs the world approximately \$5 trillion a year, or about 7 percent of global GDP, according to the World Bank. This cost is measured in a range of metrics, including lives lost and declines in health and productivity. Such pollution can be seen, felt, smelled, and even tasted. It stings and blurs the eyes, blackens the lungs, and shortens the breath. Even in the United States, about 142 million Americans still reside in counties with dangerously polluted air. Yet air pollution affects more than just our health and our natural environment: Our research shows that air pollution also has a *moral* cost.

Without even realizing it, people around the world may be affected, morally, by air pollution. Recent data on daily changes in wind direction in Chicago and Los Angeles suggest that air pollution increases violent crime. Using both archival and lab data, we took a closer look at the link between air pollution and unethical behavior, finding that the experience of air pollution increased unethical behavior.

In our research, we first analyzed nine years of data on nearly 10,000 U.S. cities to examine how air pollution influences different crime categories, including murder, robbery, aggravated assault, and burglary. We ruled out many important factors that might explain the relationship between air pollution and unethical behavior, such as a city's population, law enforcement, demographic composition (e.g., median age, gender, race, education), income, poverty, and unemployment. Over and above these other factors, we found that high levels of air pollution were linked to increases in six crime categories, including murder, robbery, aggravated assault and burglary.



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To ascertain the causal relationship between air pollution and unethical behavior, we subsequently ran three controlled experiments in both less and more polluted countries (the United States and India, respectively) to examine the causal effect of experiencing air pollution on unethical behavior, including non-criminal dishonest behavior. Our experiments also tackled the “why” question: Why does pollution increase unethical behavior? We theorized that the experience of air pollution might make people anxious and thus more likely to behave unethically. Indeed, prior research has found that anxiety can lead to more violent unethical behavior (such as aggression) and non-violent unethical behavior (such as cheating on a test to earn more money). The anxiety triggered by an economic crisis has been found to make people more hostile and aggressive.

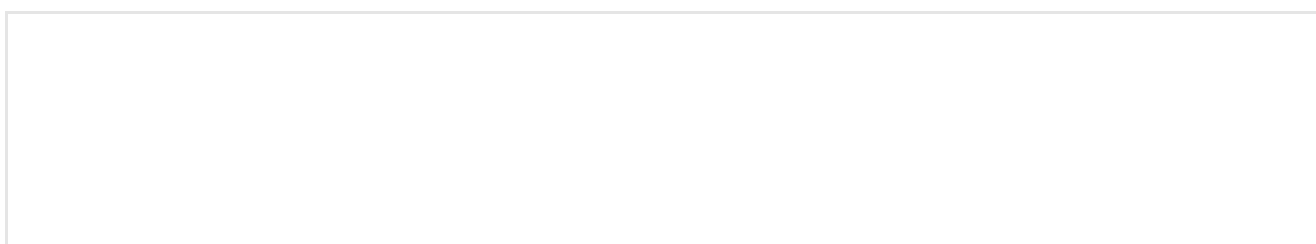
In one study, we recruited a group of American adults and showed them a series of 15 photos of contemporary Beijing on a computer screen. Some participants were randomly assigned to view photos of various locations taken on a polluted day, with a gray, smoggy sky. Others were randomly assigned to view photos of the same locations taken on a clean day, showing a blue, clear sky. We asked participants to imagine living in that city. Next, we asked them to write a detailed diary entry of a day lived in this city—“taking a bus, riding a bike, breathing the air, talking with friends, exploring the city”—to have them experience being in a polluted or clean environment.

Once they were done writing, participants moved on to another task that was ostensibly a test of luck. In reality, it assessed their cheating behavior. Participants were asked to roll a die once and report the outcome, which determined how much they would be paid (\$1 for a 1, \$2 for 2, and so on). We also wanted to assess the participants’ level of anxiety, so we asked two coders to rate each participant’s diary on various dimensions, including some that measured anxiety: “distressed,” “irritable,” “nervous,” and “scared.”

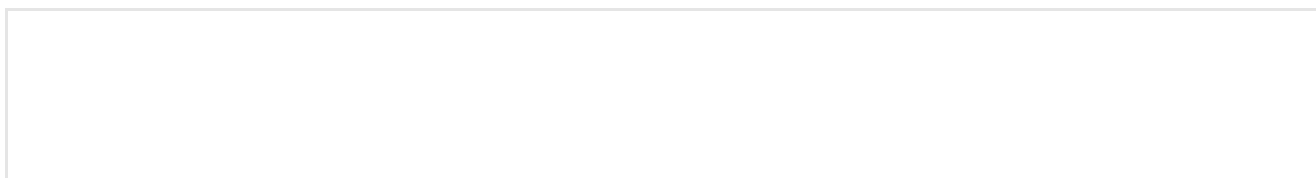
The participants who viewed photos of a polluted Beijing cheated more by self-reporting higher die-roll outcomes than did those who viewed photos of a clean Beijing.

The diaries of those in the pollution condition also showed more anxiety. And finally, their heightened anxiety explained the effect of experiencing air pollution on cheating. We found the same pattern of results in a similar study with adults living in India.

Our research offers another compelling reason for to work on reducing air pollution. When environments are less polluted, they are not only healthier, but also safer. The marginal dollar invested in cleaning our collective skies appear to have larger effects than policymakers thought. And these effects are not just felt in our health and in our economic lives, but in our moral lives as well. The purer our air, the purer our actions.



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## ABOUT THE AUTHOR(S)

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## Francesca Gino

Francesca Gino is a behavioral scientist and the Tandon Family Professor of Business Administration at Harvard Business School. She is the author of *Sidetracked: Why Our Decisions Get Derailed, and How We Can Stick to the Plan* (Harvard Business Review Press, 2013) and *Rebel Talent: Why It Pays To Break The Rules At Work And In Life*(Dey Street, 2018).

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## Adam Galinsky

Adan Galinsky is a behavioral scientist and Chair of the Management Division at Columbia Business School. He is co-author of the best-selling book (*Friend & Foe*, 2015) and a popular Ted talk speaker (*How to Speak up for Yourself*, 2016).

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