Revisiting the Air Pollution Crisis in China – a lesson on toxicity, sociality and humanity

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A Toxic Smog Crisis

In 2017, China faced a renewed smog crisis, even worse than similar situations in past years. Most of the country was affected, including southern regions previously considered 'safe' from air pollution (e.g., Guangzhou). Smog consists of a mixture of tiny but highly toxic particles, of which fine particulate matter (PM2.5) is the most hazardous to human health. While coal consumption can yield the energy and light that are important for everyday life, research has shown that coal is responsible for the majority of PM 2.5 emissions, which carry significant consequences for health. In China, more than one third of lives lost are attributable to PM 2.5 pollution. During days of heavy smog, hospital admissions due to respiratory emergencies, stroke, heart attack, cognitive impairment and some non-communicable diseases (NCDs) spike, affecting millions of people, particularly in densely populated urban areas.

A Socio-cultural Problem

Despite biomedical, epidemiological, and pharmaceutical evidence on the effects of toxic air, its social and cultural meanings are still being constructed. Beyond the stark realities of scientific evidence, the smog crisis profoundly transforms our everyday lives, both personally and in relation to others. In addition to the direct harm to our bodies and brains, these invisible but highly toxic particles can have broad indirect effects. For example, they can disrupt our eco-agricultural system and influence which places we build, live in and travel to. Through these and other relationships, the phenomenon of smog mediates our own behaviors and values and reshapes our relationships with others. Most importantly, as we begin to understand these complex chains of consequences, our imagined vision of the nexus of poverty, vulnerability, inequality, humanity and sustainability becomes yet further complicated.

Expanding the discussion around the smog crisis to encompass a larger socio-cultural realm that reconciles the living experiences of as many individuals as possible might lead us to more creative and productive solutions. Rather than providing an authoritative analysis, this short piece should be seen as an exploration of socio-cultural aspects of the air pollution crisis and some potentially productive courses of action.

Approaching the Smog Crisis through a Social Lens

Local, provincial and state governments in China have all strived to limit exposure to harmful toxins by—among other actions—closing coal mining fields and power plants and investing in clean-energy innovations, yet much work remains, both short- and long-term, if we are to fulfill the UN goal of 'leaving no one behind' as we strive to achieve a healthier environment.

First, in considering responses to the air pollution crisis, the focus should be on those who are most vulnerable to its toxic effects – such as children, elderly, coal miners, low-income households and those suffering from chronical diseases – these groups also often have low capacity to reduce their exposure or respond to threats. Among needed actions are policies to ensure an adequate supply of health service personnel and facilities to treat those who fall ill during episodes of smog. Subsidies should be promptly provided to individuals and households suffering from air pollution-induced illnesses to help ease their financial burdens and reduced labor productivity. Also, our public health system must be accountable to all, regardless of their 'hukou' status (*hukou* is a household registration system in China based on place of birth), so that both urban residents and migrants receive equitable treatment. These are just a few of the many actions that would flow from a focus on those most in need.

Second, in interpreting the role of 'place' in constructing an experience of 'toxic living,' we should be aware of not only geographic but also socio-cultural spaces, where

toxic environments and human well-being can be interlinked. For instance, the smog crisis is likely to reduce our level of outdoor activity (and thus our interactions with others); change our consumption behaviors from offline to online, and increase market demand for air-cleaning products (e.g., anti-dust masks and indoor air purifiers). It can disrupt our travel routines due to unexpected flight cancellation and closure of public services. More profoundly, it can affect our food options and dietary habits by damaging our soil and farming systems; reducing food production; and increasing vegetable prices. All of these patterns force us to reimagine our smog-related health risks in relation to the social and cultural aspects of where we choose to live, work, eat, exercise and build relationships.

Third, managing complex problems such as air pollution requires considering cascades of social consequences to avoid system failure (Chapman, 2004), where solving one problem can potentially lead to creating more. For example, in China's aggressive determination to reduce emissions of toxic pollutants, the government closed or curtailed a large amount of coal mining activities virtually overnight, leaving countless miners unemployed and their dependents with drastically reduced incomes and hopes. To make it worse, given their less privileged educational background and lack of experience outside of the coal industry, miners often have no option but to move to other mines for jobs. For those not lucky enough to be able to relocate, futures are more uncertain. Job training and financial remedies should be offered to help workers survive difficult transitions like these, reducing their suffering to a minimum. More broadly, though, it is clear that a more systematic approach to the smog crisis that accounts for cascading consequences and feedback relationships will contribute to better outcomes.

Lastly, alleviating smog requires a transdisciplinary approach that allows us to engage with various stakeholders and work across disciplines to promote greater understanding of the complexity of the challenge and our options for action. Lab-based scientific evidence should be considered alongside our findings from social reality to inform better decision-making. For instance, while we need epidemiologists to educate us about the harms of toxins in the atmosphere, we also need demographers to alert us to the characteristics of populations that might put them at risk; and sociologists to help us illuminate peoples' needs and motivations with respects to pollution in their environment. With better knowledge in hand, we can look to the emergence of strong leadership and partnerships at all levels to work out the best solutions. To curb this toxic crisis, we need concerted global actions, and the sooner the better.

Conclusion

This article calls for a reconsideration of the impact of the smog crisis from a social and humanitarian perspective, an inquiry into how the organization of our everyday lives and work is affected by the pollution we experience, and vice versa. We must begin to identify the limits and blind spots in our knowledge; to explore alternative approaches;

and eventually to work out a greater understanding of the complexity and nuance of the crisis within a broad socio-cultural framework. Only when we remove the barriers inherent in our current paradigms for knowledge and actions can we develop better solutions to this persistent toxic crisis.

Reference

Chapman, J. (2004). *System failure: why governments must learn to think differently*. London: Demos.

About the Author

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