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Book Review Writeup – The Great Smog of India (2018)

 This book details the impacts of air pollution on the Indian population and particularly where it is most intense in the northern regions of India including the capital of New Delhi. The phenomenology of this intense air pollution has numerous contributing factors and comes from various sectors of the nation including: massive economic growth in recent decades increasing energy requirements, outpacing of technological efficiency innovations, large-scale coal combustion, violations of emissions laws and regulations, meteorological/geographical circumstances, and perhaps most importantly the silence around the topic. Air pollution has been addressed in separate local legislations and some choice air acts in India in the last decade, but not much beyond that at the time of this book’s release on a larger organized scale. Thus, air pollution has gotten a reputation in Singh’s book as a real silent killer that’s seen more as local problems than is addressed in a serious manner nationally. No doubt, much of this has to do with the fact that there is so many contributing factors apart of a connected system, where even choice bannings or hard regulations would have major large and individual economic consequences; And, thus, it has been swept under the rug in the social and political spheres. I chose to study and review this book out of a sincere interest for India and in the scope of this class the broader issues that face them. I understand India is undergoing serious economic growth in the present time, which is much to the benefit of many, but this book would hopefully explain the holistic consequences of that.

 In terms of the writing style and content I am a fan of Singh’s exacting, but not too surgical approach to writing. It is obvious he is a scientist himself as an energy industry specialist and consultant with the International Energy Agency. However, he also provides great social contextualization to the large-scale problem of air pollution in India including a scholarly but quick description of how we generate electricity, India’s GW generation history, and the paired history of coal usage in India before and after their Independence in 1947. Furthermore, he connects this to the marked point of the book—the complex nature of India’s late hesitance in dealing with air pollution, as described in this passage:

The consequences of the adoption of coal were immense: the co-development of technology made possible greater production of material objects, allowed humans to travel far greater distances at faster speeds, enabling swifter trade, the spread of culture, literature, and science… India’s own journey with coal came in this backdrop. The British rule in India actually delayed India’s adoption of coal on a large scale [through British parliament bans on Indian coal usage] and therefore delayed the impending air pollution crisis. The delayed start meant that the consequences of coal adoption would be felt only much later, which is partly why action against air pollution too started much later (Singh 60).

 The depth of research done by Singh is compiled perhaps best in his demonstration of the linked medical impacts of air pollution on the Indian people. I was most impressed with the breadth of the 10,000+ sample size studies cited by organizations like the WHO showing practical causation of air pollution to trachea, bronchus, and lung cancer as well as linkages to diseases including: depressive and cognitive disorders, neuro-degenerate illness, brain ischemia, heart rate variability, heart attacks, strokes, congestive heart disease, thrombosis, lung inflammation, worsened asthma, various gene damage with biomarkers, and more. (Singh 19). Following common pollution and toxicity patterns, the children are affected most heavily. This air pollution also leads to increased mortality among infants, miscarriage, fetal growth problems and low birth weight. The carbon monoxide (CO) entering pregnant women’s bodies contributes to these issues by preventing enough oxygen from reaching the fetus. (Singh 19).

What is a bit more pleasant about Singh’s writing however is that although I am devastatingly encapsulated by these depressive statistics he is not robotic in his delivery when sharing them or wrenching my heart out past my lungs with a personal story. The impacts of this air-pollution-caused death are harrowingly portrayed in the tale of Sujata and her husband Rajesh. Rajesh was a long-hours daily market worker in New Delhi and his humble back pains and cough were pushed off as a cold and turned out to be stage four lung cancer. The treatments after this late diagnosis were long and life-draining for Rajesh who, in the care of his wife, would suffer a terrible death after reaching a point where he could no longer sit and eat on his own. Not to mention a crippling financial cost to the families involved as if such tragedy wasn’t enough. The chapter containing this story was titled “Love in the Time of Air Pollution,” and opens with a passage from Gabriel Marquez’ *Love in the Time of Cholera* which goes to show that these seemingly silent, but all too common deaths are no joke.

 In these captivating descriptions of the technical parts of the problems surrounding air pollution and the raw data of their aspects Singh is a master. It was most interesting how Singh compared air pollution problems to those of a similar type in other countries across history. As for agricultural contributions to air pollution Singh made great comparisons to the dust bowl droughts and dust storms in 1930’s United States and India’s own agricultural driven Northern regions; “As groundwater has depleted over the years, as topsoil has loosened owing to agriculture and as temperatures have risen over the years, stronger winds due to a changing climate have picked up huge amounts of dust and carried them long distances.” (Singh 41). It is also the case that India’s mountain-bound northern regions and wind patterns are meteorologically doomed to form the great smogs Singh details. It was no doubt inspiring to see Singh write regardless about solutions in the face of factors beyond human control and went straight to describing in sage guidance that we must know where particulate matter comes from in order to prevent it. He then went on to explain the classifications of particulate matter (PM), its various sizes, and the processes it originates from in what proportions in India. Somehow, he manages this in a non-dry textbook manner and which I was just a bit surprisingly delighted to learn about. Or, at the very least, if his descriptions are still too boresome despite their brevity for most readers they are at least organized in a manner that makes the mechanisms easy to understand.

 Easily the most interesting statistics for me as a medically inclined pre-professional were the aforementioned disease studies and as well the mortality linkage studies. Presenting research by the Indian Institute of Technology (IIT) Bombay, the Health Effects Institute, and the Institute for Health Metrics and Evaluation, all revealed that air pollution accounts for about 10 percent of Indian deaths each year. At 1.1 million air pollution related deaths in 2015, 75 percent of which in rural areas—to which I wondered if this was due to a lack of affluence and support, rural meteorology, and agricultural topsoil dust storms and crop residue burning. In rank-order for specific sources attributable to amounts of deaths: Residential biomass fuel burning – 268,000 deaths, coal combustion – 169,000 deaths, “dust from human activity” (dust storms?) – 100,000 deaths, agricultural burning – 66,000 deaths, transportation diesel and kilns – 65,000 deaths. Singh also used an older WHO study to show the proportions of disease types causing mortality by air pollution exposure; total of 620,000 in 2012, heart disease – 250,000 deaths, stroke – 195,000 deaths, chronic obstructive pulmonary disease – 110,000 deaths, lower respiratory infection – 39,000 deaths, trachea bronchus and lung cancer – 26,000 deaths.

 Perhaps the most fascinating point when it comes to Singh’s favored, varied, and never comprehensive enough suggestions to solving to air pollution are the difficulties of changing other people’s behavior. One example is in the sheer failure of technology alone to fight off the problem. For crop residue burning, which is an all-encompassing event beginning in October and wreaking its destruction throughout Indian winters, technology fails. All sorts of cheaper and cheaper emissions-efficient methods of disposing of crops fail in the practical face of the question: “If I can clear my farm using a one-rupee matchbox, why will I spend thousands?” (Singh 151). Thus, Singh has a distaste for those kinds of solution proposals where technology is supposed to spearhead it and must put forth the idea that social and political sectors must address it as an electoral issue. In his later passages Singh details the political and economic issues of addressing air pollution, as well as local, territorial, and corrupt political ignorance of emissions regulations. Despite the disparities of the air pollution crisis Singh is not completely unhappy with the efforts of the Indian state to address related issues, but it is not yet enough. Critic Kanika Chawla with the Indian Express news says it best:

The book presents the skewed incentive structures at play, but decisively states that the costs to inaction remain critically high. Acknowledging, and complimenting, the recent strides made by the government in addressing energy poverty through a mammoth electrification program, scaling up the deployment of renewable energy, and advancing the transition to cleaner cooking fuels, the book also calls for action. Singh writes, “The task before the government is clear: use every tool available — including legislation, regulation, financial instruments, taxes, subsidies, and diplomacy — to clean up the air, both indoors and outdoors.”

In the end he made such strong claims that I can’t help but at least sympathize with them if not agree wholeheartedly, that air pollution is an *unfreedom* in its inhibition of participation in the economy, access to education, training, and healthcare. There are still some gaps in our knowledge of air pollution, but that now shouldn’t matter in our approach to the problem, and that we have enough research that we don’t need more institutions, we need air pollution as a serious electoral issue. I also find admirable that he plainly recognizes that the meteorological positioning of Northern India is unfortunate, but that that shouldn’t stop action either. At first I disagreed with his statement; “Ask not what you can do for the government, ask what the government can do for you” (Singh 219) as a reversal of John F. Kennedy’s famous quote. However, I recognized his explanation of this as a serious call to the Indian government for action and realized that it was appropriate to the nature of the problem, where average citizens can not do enough. As critic of the text Arun Pandiyan put it: “It is clear that unless the people of India make climate change, pollution, and environmental conservation an electoral issue and demand accountability, nothing can dampen this perpetual crisis.” Furthermore, as a real selling point to policy makers and economists Singh cites a report by the Organization for Economic Cooperation and Development (OECD) that intelligent action against air pollution would be pro-economy and pro-growth in contrast to the arguments that addressing it would too greatly devastate India’s GDP.

All in all, I was simply delighted to read The Great Smog of India by Siddharth Singh. If I were to put it on a scale, I’d give it a 9.5/10, only falling short in some wordiness and technical confusions. Singh is not all-knowing in the domains relating to air pollution, but he is clearly a passionate scientist and writer. As for recommendations I would easily recommend this book to anyone who wants to accessibly learn about air pollution specifics, energy production, the basics of GHG emissions and dirty or cleaner fuels, the real medical and economic impact of Indian air pollution, the history of India’s industrial boom since before their Independence, and the troubles of environmental policy in India. Whether you were scientist, statistician, public or economic policy writer, environmental studies expert, or just your average fellow you’d get something out of reading this book. The reasoning for this is that he provides a great jumping point for deeply interested field related readers, or on the other hand really easy to follow for everyone explanations on the mechanics of anything from how we use energy sources to what makes up particulate matter to policy and social behavior.

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