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The Social Experience of Heat: Urban Life in the Indian Anthropocene

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Climate change has upset time-honed ways of coping with heat. The new way of keeping cool is impossible without dispossession, devastation, and pollution in distant regions.

This year, 2022, in north India, the heat began early and has continued without a break. The hottest March in 122 years was followed by prolonged periods when the maximum temperature was continuously above 40 °C and more than 4 degrees above normal, meeting the Indian Meteorological Department's definition of a heat wave. In the last few weeks, people have experienced some of the highest temperatures in living memory.

Scientists have warned that we can expect many more such extreme events: "Because of climate change, the probability of an event such as that in 2022 has increased by a factor of about 30."

North India's ongoing battle with unprecedented heat is undoubtedly related to climate change. But this global phenomenon interacts with biophysical, political-economic, and social features, which are regional and local. We need place-specific analyses to understand the causes and consequences of extreme heat and to devise strategies for dealing with it.

I offer one such place-based study of the metropolis of Delhi. Like other cities and towns in north India, Delhi has lived with hot, dry summers for centuries. Have city-dwellers' experience of heat changed over time? How do they make sense of it? What do they do to deal with it? Participant observation and extended interviews with residents who varied by income, occupation, age, gender, and length of residence in the city gave answers to these questions.

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Almost every resident I spoke to noted that Delhi had become hotter. But almost no one, not even highly educated people - an engineer, a dental surgeon, a professor of literature - attributed it to global warming. Instead, they identified proximate causes: Delhi was more populous, more crowded and congested. It was more built up. There were fewer trees. It was more polluted.

In effect, they were describing what has been called the 'urban heat island' effect. These factors do contribute to heat and to people's sense of oppression and claustrophobia. But it startled me that almost no one related their experience of rising heat to cumulative emissions from years of capitalist industry.

What the responses *did* show is that the cultural experience of heat has changed as global warming has interacted with Delhi's pollution, patterns of work, housing, travel, and with cooling technologies. These dynamic factors and forces are interdependent, entangled in ways that are hard to unravel. They create new lifestyles and habits of body and mind. They also create new inequalities and vulnerabilities, feeding vicious circles of deeper exploitation and ecological distress.

Memories of summer

Long-time residents of Delhi agree that summer in the city has always been brutal. From May to July, the sky would pour down heat and the air and earth would store it. That baking stillness would be briefly broken by an *aandhi* (dust storm) whipping through, swirling dust and bringing a spatter of rain. But the next day, the heat would be back. Middle-class people looked forward to summer vacations when families would retreat to hometowns and villages. Many well-off Punjabi families would holiday in hill stations: Shimla, Nainital, and Mussoorie. But for everyone else, who could not escape, summer had to be suffered and endured.

> For everyone except the poorest, dealing with the heat meant adopting specific micro-practices, many of which are still in use.

Yet, looking back on summer as it used to be, a surprising number of older people said how much they enjoyed it. There were special summer treats: mangoes, melons, and litchis. Summer drinks: *aam panna*, *jal jeera*, *bel ka sharbat*, Rooh Afza. Summer smells: the damp fragrance of *khus* (vetiver) mats that hung on doors and windows and were sprayed with water, creating dim perfumed rooms. The wet-earth scent of water from a *surahi* or *matka* (clay pot). People remembered how courtyards or terraces would be washed each evening with buckets of water and *charpai*s (string beds) and mattresses laid out for sleeping under the stars, everyone together. Yes, it was hot but there was no point in complaining. You just had to deal with it.

For everyone except the poorest, dealing with the heat meant adopting specific micro-practices, many of which are still in use: waking up earlier to take advantage of the cooler hours; retiring indoors in the afternoons for a snooze. Wearing loose cotton clothes, open slippers or sandals on your feet, covering your head when going out. Bathing twice a day. Eating light food. Drinking a lot of water.

Underlying these common-sense, taken-for-granted techniques for staying cool, is an elaborately worked out theory of the body as needing to be in harmony with its environment. Ancient principles from Ayurveda and Unani medicine prescribe how the body and its external ecology should be balanced. Food is classified in terms of its *guna* (qualities), its effects on an individual's humours, and its physiological effects: whether it is 'heating' or 'cooling'. What one eats and how one lives have to take into account temperament and character, place and season. These precepts are underpinned by the idea of the person as intrinsically and intricately linked to her environment, always open to its influences, needing to attune herself to climate, flora and fauna, soil and water, staying healthy in body and mind by following the rules of the season.

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And summer was a *season*. It had its finite span. It would end when the rains arrived in July. One just had to wait it out. And while you did, there were small pleasures to beguile you: the golden shower of amaltas trees in flower, the flamboyant blaze of the roadside gulmohar. Sometimes, the keenest pleasures were the smallest ones. To come home grimy and sticky after a journey on a crowded bus and having a bath. That first mug of cool water on one's head: bliss!

And even those who slogged in the sun, heads covered to ward off the dreaded *loo* - hot winds from the desert that swept the city in the afternoons - could sneak a short respite in the shade. Masons on building sites, rickshaw pullers, the postman laboured on, a moist *gamchha* (scarf-towel) around their heads. 'Oh, we manage, we're tough. *Is bhatti mein pak chuke hain* [We've been baked hard in this oven]'. To live and work in the heat and to make light of it was to show mastery over one's body, disciplining the mind to rise above material discomfort, to make a virtue of necessity. And it *is* only for a season. And a season always ends.

Summers in the present

Those summers are gone. Now summers start in March, not May. They create new records in the intensity and extent of heat. Each year seems hotter than before. There seem to be more heat waves.

Around the world, climate change is caused by global warming, as greenhouse gases such as carbon dioxide accumulate in the atmosphere and trap heat. Since the Industrial Revolution, but especially since the Great Acceleration of the 1950s, the increasing rate of burning fossil fuels has made the planet hotter (McNeill 2000). Warmer air, oceans, and lands have together created longer and hotter heat waves, more frequent droughts and wildfires, heavier rainfall, and more powerful storms.

However, climate scientists do not altogether attribute the frequency of north India's heat waves to climate change (Oldenburgh et al. 2019). Instead, they point out that the full blast of solar radiation and warming from greenhouse gases has been moderated by the cloud of air pollution that sits above Delhi. We would be even hotter were it not for the insulating effect of our own emissions.

What we do have, instead, are two other effects. One, there has been a rise in summer minimum temperatures. Delhi's nights are warmer. People toss and turn on their beds, sweating and sticky. They wake up feeling unrested, sluggish, and irritable.

Two, relative humidity in May has increased strongly since the 1970s, in large part because Delhi is well-watered, its much-vaunted avenue trees and parks plentifully irrigated.

People complain, "It's not the heat; it's the humidity." And humidity does, indeed, kill (Raymond et al. 2020). When it is hot, the body cools itself down by sweating. Dry heat allows sweat to evaporate and cools the body. But when the air is itself gravid with moisture, it cannot do so. That is when the chance of getting a heatstroke goes up.

If untreated, a heatstroke can be fatal. The elderly, with their frailer bodies, are most vulnerable, as we know from the devastating heat wave that killed more than 70,000 people in Europe in the summer of 2003 (Keller 2015). In India, the people most at risk are not only the elderly and infants, but also those who work outdoors for long hours, who are malnourished and weak to start with. This includes construction workers, rickshaw pullers, street vendors, delivery men, and lakhs of others. No matter how used they are to heat, how toughened their bodies, this is too much. This is more than anyone can bear.

When higher temperatures are combined with higher humidity, most cooling methods fail. For almost a century, electric fans and desert coolers have been the chief means for actively cooling spaces in Delhi's dry heat. (The term 'active cooling' is used to distinguish these technologies from what is called 'passive cooling': architectural devices such as screens, thick earthen walls, verandas, and ventilators that prevent heat from entering a building or help to dissipate it.) Coolers throw moist air into a room and evaporation brings the temperature down. They are easy to assemble and afford. But rising humidity makes coolers useless. Then the only technology that can cool is air conditioning.

The advent of air conditioning

Until the 1990s, air conditioning was a luxury that only the elite could afford, and they too sparingly. Middle-class people experienced air conditioning only fleetingly in cinema halls or on trains. This has changed dramatically in the last 30 years with the liberalisation of the Indian economy, setting off what might be called the Indian Anthropocene.

During this period, Delhi's population has grown massively in size and density. The city has attracted migrants in search of work, better education, and opportunities. Their incomes have risen, but the rise has been far greater for already well-off sections. Wider economic inequalities divide citizens. What unites them is a shared aspiration to improve their quality of life.

A common measure of how people evaluate their improved circumstances is the ownership of consumer durables. Thanks to liberalisation, the cost of domestic appliances and private vehicles has fallen relative to middle-class incomes. For the lower middle classes, consumer loans now make it possible to buy what would otherwise have been big-ticket items beyond their reach. Those with even smaller budgets turn to the thriving market in used, second-hand appliances.

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The spread of air conditioning in Delhi since the 1990s has also been made possible because electricity is now more reliably supplied to most sections of urban society. Earlier, frequent power cuts and smaller sanctioned loads meant that power-guzzling air conditioners (ACs) could not be run regularly. Not only for homes, but even owners of shops, restaurants, and offices did not consider it worth their while to invest in ACs. Now uninterrupted power is available day and night in most neighbourhoods, even during the evening hours when there is a huge surge in electricity demand due to people going home from work and switching on their ACs.

None of this cool comfort would be possible without vastly increased coal mining and dam building in other parts of India and the world. But the dispossession of Adivasis, the devastation of forests, the pollution at the point of production, the enriching of big corporate firms at public expense - these links between the city and its resource catchment are rendered invisible, buried somewhere along with the power lines. They are not even a spectral presence when we press the remote button to switch the AC on.

The essential AC

In Michael Levien's study of a Rajasthan village where the government acquired land for a Special Economic Zone, some high-caste landowners became wealthy from land brokerage and speculation. Fellow-villagers, admiring and envious, summed up their rising fortunes by saying that now they were "sitting in the AC" (Levien 2018: 116).

That is the good life: to spend the day, not toiling in the field, but sitting in an air-conditioned room.

For a number of other people, however, an AC is not just the ultimate luxury, a symbol of having arrived. An AC is *necessary* to how they live, work and travel in the city. That is because air conditioning works in tandem with other technologies, enabling certain built forms and lifestyles such that one cannot have one without the other.

Take housing. The best example of colonial tropical architecture is the Lutyens bungalow, beautifully adapted to Delhi's climate but occupying space in a sprawling, supremely privileged way (King 1974). There is also the older vernacular architecture of Mughal-built Shahjahanabad: densely shaded, low-rise buildings where communal courtyards and rooftops afford access to cooling breezes.

But bungalows and houses with rooftop *barsatis* are not for most people. The 1BHK is. One bedroom, hall, and kitchen - that is the home that the lower middle class can hope to own, a tiny flat in a multi-storeyed apartment block, what in the old city would be called a *kabootarkhana* (pigeonhole). The BHK dream house is actually an unventilated box of brick and concrete with no usable open spaces. It would be unbearable without an AC.

So also with workplaces. Instead of buildings adapted to the local climate, there is increasing standardisation of building materials, techniques, and designs across the world, an architecture of steel and glass and concrete, materials that signal modernity but that absorb much more heat. In these closed-up offices labour workers who cannot function without air conditioning.

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The idea of air conditioning as essential to the workplace was most enthusiastically taken up in Singapore. Lee Kuan Yew, its long-serving prime minister who propelled the island to prosperity, would claim that air conditioning "changed the nature of civilization by making development possible in the tropics," and installed air conditioners in government offices to increase "public efficiency." (George 2000: 14)

In Lee's words one sees how the notion of the productive citizen is combined with "deeper colonial ideas about forms of embodied civilization and the degenerative effects of living somewhere hot" (Hitchings 2011: 175). These ideas inform global business architecture's "new regime of 'thermal monotony', which has spread rapidly […] between countries with very different climatic conditions." (Winter 2013: 518). An air-conditioned office lets one inhabit a 'professional' style - synonymous with a Western dress code: business suits and closed shoes for men and women. Bodies are groomed to a standardised aesthetic. No one sweats.

To reach this air-conditioned office, one must travel. And there again, an AC interposes itself as a necessity. To travel in a car is to sit in a metal box on tarmac that radiates heat, surrounded by the reflective glare from glass and metal, breathing exhaust fumes. What can one do, but roll up the windows, switch on the AC, and join everyone else in heating up the planet?

Thermal comfort and discomfort

More and more people spend longer hours in air-conditioned spaces - an everyday experience that, while profoundly skewed by income and occupation, enfolds a fair share of the precariat. Yet there are many in Delhi who are ambivalent about it, and even critical.

Older people, especially, said that it created an unnatural coolness. Many, old and middle-aged, complained that sleeping in an airconditioned room made their joints pain. They got coughs and colds. Prolonged exposure would make one fall sick. To go in and out of airconditioned spaces was to experience two seasons - summer *and* winter - in the same day. The body could not cope.

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Several people also pointed out that air conditioning has an insidious effect. Exposure to air conditioning recalibrated one's internal thermostat. Temperatures that were tolerable earlier now feel uncomfortable. "Like the internet, air conditioning inserts itself into your life so that once you've used it, you can't imagine life without it. Earlier it wasn't like this; when the *bijli* (power) would keep going off, you knew that you couldn't rely on the AC. So you learned to bear the heat. Now I've been spoiled by the AC. When I'm without it, I feel its absence actively and acutely. I feel deprived," said a 56-year-old businesswoman.

Some people expressed wariness about such dependence. Many limit their AC use because it is expensive but several others do so because they *do not* want to be sequestered from the heat. They want to feel that they can deal with the heat, that their bodies and minds are disciplined enough to prevail over their environment. Such an attitude is informed by a spartan ethic, the belief that denying oneself comfort and ease makes one stronger. Austerities are still respected in a country where fasting is a regular part of religious observance. Others simply believe that there is a rightness to experiencing a season and adapting to it.

For a younger generation that has grown up with ACs, there is no such ambivalence about the technology. It is what they want: not only for being productive but for being social, for relaxing with family and friends.

Older middle-class people may regard this dependence on the AC as the younger generation having become 'soft', 'loose' and self-indulgent, a physical as well as moral decline. But youth do subject their bodies to self-discipline: the exacting regimen of working out in the gym, of dieting and grooming. It's just that they do not see braving heat as a worthwhile physical or psychic challenge. They would rather stay indoors with their friends in climate-controlled environments. Tim Winters calls it "a subtle, yet discernible, form of agoraphobia, […] a growing fear about the outdoor environment [as] a space of contamination and risk," from pollution, crime, diseases, bodily discomfort and impurity (Winter 2013: 527).

So increasingly, upper-class sociality turns indoors, leaving the streets and other public places more segregated than ever.

Outside

What is it like outside, outside the cool confines of air-conditioned spaces? It is a lot hotter. ACs throw out heat, blasting hot air outside and making it hotter for everyone else. They have also contributed to global warming, not only because they run on fossil fuels, but because they use chemicals: first freon that depleted the ozone layer and then HFCs, whose global warming potential can be hundreds to thousands of times that of carbon dioxide. And, finally, they make life hotter by having redefined people's sense of thermal comfort.

The social experience of heat has been redistributed. Caught in the middle are those working-class people whose jobs place them in air-conditioned environments - security guards at ATM kiosks, shop assistants in malls, cleaners in corporate offices - who move between cool comfort in their workplace and suffocating heat in their homes. As several of them told me, their bodies and minds are conflicted.

> In seeking cool comfort, the well-off are warming the planet as well as their fellow-city-dwellers.

As more people extend their use of ACs and others aspire to do so, the demand for power is reaching new heights. The spectre of power breakdowns is truly frightening. Even as there is growing political pressure to generate more power - most of it from burning coal, there are power cuts, inevitably targeting poorer neighbourhoods first, even though they do not consume as much electricity. That is what happened in Chicago during the horrific heatwave of 1995, leading to disproportionate deaths among poor, elderly African-Americans, social vulnerability mapped onto the city's spatial geography (Klinenberg 2002).

Now imagine a night in July in Delhi, temperatures above 30 °C and 60% humidity, mosquitoes whining around your ears, and not even a fan or a whiff of breeze to relieve the heat. In seeking cool comfort, the well-off are warming the planet as well as their fellow-city-dwellers.

We who use ACs often forget that we are kept cool by extracting services and resources from other people and places, even as we make life less liveable for others. And yet, so neatly is the logic of air conditioning nestled into all other aspects of the life we desire, or the life we are compelled to live, that it is impossible to imagine walking out. These are the deep structural binds that hold us captive.

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