

“We want to Know what we’re Breathing”: Cement Factories and Contested Environmental Illness in Minas, Uruguay

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In 2011 residents of the small Uruguayan city of Minas (pop: 40,000) identified a disturbing trend. Loved ones, neighbors, and above all, children, adolescents and young adults, were coming down at seemingly alarming rates with various kinds of cancer- “strange cancers,” as more than one resident put it- like Hodgkins lymphoma and leukemia. Citizens of this valley community also suffered from a toxic slew of other maladies including asthma, nasal polyps, allergies, celiac disease, skin rashes, and high incidences of hypothyroidism. Alarmed by what they suspected was an environmental cause, residents started organizing and demanding information from public health officials and regulatory agencies. Their main targets of suspicion were the two large cement factories looming over the city’s edge, one of private [Spanish and Chilean capital](#) and the other of the state petroleum company [ANCAP](#), the nearby limestone quarries that supply the factories with raw material, and the municipal dump where illegally incinerated garbage has more than once blazed out of control.

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In the past few years, Minas’ burgeoning activist movement has successfully drawn [national media attention](#), and in response some limited governmental and academic studies have been conducted. But for activists and concerned residents, too many questions remain while people keep getting sick and dying. Public access to information is a central and recurrent theme in this struggle. “We want to know what we’re breathing,” activist Valeria Uriarte has repeatedly stated. At issue too are competing claims of causation. Activists are convinced the cement factories and quarries are primarily responsible for the city’s environmental health problems. The industries deny responsibility altogether, and government regulators and officials are reticent to acknowledge whether an epidemic of cancer even exists. They point to a

lack of “statistical significance” of existing data, or suggest perhaps there is only a “public sensation” of a problem.

Confounding the link of industrial emissions to environmental illnesses in Minas is the fact that Uruguay already has the [highest cancer rate in Latin America](#) and ranks among the [highest in the world](#). President Tabaré Vázquez of the Frente Amplio (Broad Front) coalition, an oncologist by profession, has led ambitious and successful anti-tobacco measures that have simultaneously drawn the country into a [protracted legal battle with tobacco giant Philip Morris](#). Until recently Uruguay had one of the highest incidences of tobacco use in the Americas, and most recently the typical “Uruguayan diet” of red and processed meat was “attacked” by a World Health Organization report linking consumption of these foods to [elevated risks for cancer](#). The Uruguayan government has been proactive in the struggle against cancer not only through its fight against tobacco but also through the establishment of an expert interdisciplinary [Honorary Commission in the Struggle against Cancer](#), which monitors epidemiological data and directs research and policy interventions. Despite cancer’s long proven links to air pollution and other [environmental toxic exposures](#), however, public health prevention strategies and research funding in Uruguay, as in most of the world, continue to be driven by epidemiological theories of individualized and behavioral etiologies related to lifestyle, diet and genetics. As the Public Health Ministry’s departmental director [Pablo Leiva argued](#), there is “no scientific basis” linking cement factories to environmental illness. “Any emitting source is suspicious [of producing cancer and illness],” he insisted, “but the principal suspect is the cigarette.”

‘Dangerous Air’ over Minas



As any resident can attest, however, if you live in Minas you breathe dangerous air. The wind patterns and geographic depressions of this valley town trap into a cloud of smog circulating dust, wood fire smoke, exhaust, and other air toxicants. In neighborhoods across the city, residents wake up every day to find a film of dust covering their patios, cars, and drying clothes. Activists recognize the health dangers posed by cement

factory emissions, including increased exposure to heavy metals like mercury and lead, [persistent organic pollutants](#) (POPs) including dioxins, furans and PCBs, and ground level ozone producing gases such as [sulfur dioxide, nitrogen oxide, and carbon](#)

monoxide. The dangers of cement factory emissions are compounded by the nonexistent or dated filtering technology used until recently at the Uruguayan plants. This is true of the ANCAP facility in particular, which from 1956–2014 had made virtually no investments to improve environmental safety technology and infrastructure. A 2013 occupational health study found “**alarming**” levels of dust of up to seven times the internationally recommended norm within the ANCAP plant. Both factories primarily use petroleum coke and recycled fuel oil as fuel sources, in addition to biomass such as rice husks. The combustion of all of these substances, if not properly controlled, may result in highly toxic and **cancer-causing emissions**. Widespread rumors and speculation about “what else” the factories burn or have burned in the past, added to industrial and governmental secrecy surrounding the cement industry, have fueled **confusion and mistrust on the part of citizens**.

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While the dated ANCAP factory has operated on the outskirts of Minas since the 1950s, the private Cementos Artigas relocated its plant to Minas in 1997 from its previously site in a Montevideo working class neighborhood. An anti-toxics movement developed there in the 1980s, part of an early and piecemeal wave of environmental struggles in Uruguay. The citizens group mobilized memorably through a March of the Umbrellas that symbolized the “rain of dust” to which the neighborhood was constantly subjected. Their success in forcing the factory to shut down and eventually move to Minas represents one of the ironic consequences of NIMBY struggles the world over. The move left Minas with two cement factories in close proximity to each other and both within the city limits. In addition to years of exposure to unknown quantities of smokestack pollutants, large piles of petroleum coke lie within and surrounding the plants in open air mounds exposed to crisscrossing winds. In the nearby quarries, workers detonate explosives, transport the mineral by open bed trucks, and pulverize limestone all day long, releasing **high volumes of dust that spread throughout the valley**. The wind-carried dust first passes through Minas’ modest working class neighborhood of Garolini and its elementary school, located a mere 250 meters from one of the massive quarries.

The Honorary Commission monitors cancer morbidity rates across the Uruguayan territory. When Minas residents first suspected a cancer epidemic, data was only available through 2010. The Public Health Ministry charged the Commission to conduct a thorough investigation. What they finally released publicly in 2015 was a terse and cautious report based on international scientific literature and updated

secondary data, rather than the primary field-based epidemiological study activists had demanded. According to [the report](#), Minas has cancer rates “in line with national averages” while some specific types “may be higher.” In this report as well as in public declarations, officials have presented a perplexing argument: there is enough data to determine overall cancer rates in Minas represent “average” numbers, while specific types such as uterine, Hodgkins lymphoma, and intestinal cancer that express more than twice the national average do not constitute enough data to be “statistically significant.”

Activists have raised many questions regarding the reliability of official claims and data. As a small city of the country’s interior, medical facilities and treatment options in Minas are not as extensive as in the capital Montevideo. Only a one and a half hour bus ride away, an unknown number of cancer patients are treated in Montevideo hospitals, thus registering as Montevideo rather than Minas patients. Children under the age of 15 are also routinely sent to Montevideo’s main children’s and maternity hospital for treatment. Finally, cancer is only registered according to morbidity rather than mortality rates, potentially limiting data. Uruguayan physicians and hospitals usually list “cardiorespiratory failure” as an individual’s cause of death rather than the underlying illness that precipitated death.



Pollution over Minas

When the national environmental directorate DINAMA finally initiated more systematic environmental air monitoring in 2014, the ANCAP plant had built a new kiln and filtering system but it was not yet operational. Recent air samples then only include emissions from one of the cement plants. Regulators and scientists will thus be unable to ever capture the actual emissions coming from the outmoded system of operation that had been in place for over five decades at ANCAP, or the cumulative effects of the almost two decades of ANCAP's old system operating alongside the newer Cementos Artigas plant. While residents will hopefully soon be able to know what exactly they are breathing, the question "What *were* we breathing?" appears far more difficult to answer.

When officials and industry representatives dismiss public concerns, residents counter: "But I can't breathe in the winter," "Why does my three-year old child have hypothyroidism?" or "When I travel up the hillside I see a cloud of smog blanketing my city." What happens to public trust when officials explain to the families who live on that "fateful block" (*la cuadra fatídica*) in downtown Minas, named so because every household suffers from at least one case of cancer including several pediatric cases, that their concerns only respond to a "public sensation" or their illnesses are "statistically insignificant"? Some of this lack of trust related to the cement industry stems from experiences a decade ago following a community outbreak of hypothyroidism. Local environmental groups in partnership with a Czech lab analyzed chicken eggs in rural areas surrounding Minas and discovered [elevated levels of dioxins and PCBs](#). While this research suggested a possible [environmental cause of hypothyroidism](#) in Minas, the Public Health Ministry challenged the study's scientific credentials. The Ministry instead re-diagnosed the more than 50 cases as acute thyroiditis stemming from consumption of tainted meat from a local butcher. The fact that several of the sufferers had not recently eaten meat from this butcher and one was a vegetarian contributed to a legacy of citizen mistrust and helped sow the seeds of activism that would flourish a decade later.

Several lessons and recommendations may be gleaned from this case study. At the government level, there is an urgent need for more industrial regulation and oversight. This should include establishing a baseline and regular monitoring of air, water, occupational and public health conditions, as well as conducting field-based epidemiological studies. Government regulators need to synchronize data on industrial emissions, environmental quality, and health outcomes, and this information should be made transparent and public. Public and environmental health should be de-politicized. Officials need to worry less about creating "public panics" and instead take "lay expertise" seriously while recognizing the maturity of the public

to assimilate knowledge. None of this is possible of course without prioritizing public funding for health and environmental protection.

At the industry level, factories must comply with existing regulations and employ “first world” standards of technology and environmental mitigation throughout the full cycle of extraction, production, distribution and disposal. On the part of academia, scientists need to continue to develop expertise in environmental health and toxicology in order to recognize the environmental etiologies of disease and to be able to study the synergistic effects of multiple chemical exposures in relation to individual genetic and behavioral factors. For activists and concerned residents, they should take heart that none of their problems would have come to light without their persistent organization and advocacy. They understand more than anyone, however, the moral urgency of continued mobilization and the need to obtain real answers. Although access to resources is a serious limitation, they might consider employing some of the tools of [popular epidemiology](#) and [citizen science](#), for instance by developing their own [community health surveys](#) or organizing a “[bucket brigade](#)” to conduct environmental air monitoring. At the very least these would provide an additional set of tools to maintain pressure on the government to honor its mandate to responsibly veil for the health and the environment of all citizens.

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(Featured images: credit Daniel Renfrew)