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The Smell of Petroleum: Sensing Toxic Infrastructures

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On 5 February 2010, a photo appeared in the Ecuadorian newspaper *La Hora* captioned "Gas Causes Alarm." The previous day the smell of petroleum had inundated the city of Esmeraldas on Ecuador's northwest coast, setting off concerns about a gas leak. The image focused on the hill between the city center and the State Petroleum Refinery, the country's largest oil-processing plant. Curiously, the photo shows no smoke or other sign of a perceivable problem. There is no indication of what the content of the photo actually is, except for the presence of a blurred man in the foreground, holding his nose in an attempt to ward off a smell, presumably from the refinery. Yet while the heart of Esmeraldas was exposed to toxic gas, as suggested by the caption, the national oil company PetroEcuador remained conspicuously silent about the leak. Smell here served as proof of its lack of accountability.

Silence about toxicity was not out of character for PetroEcuador. Closer to the refinery – in an area of the city known as the Southern Neighborhoods – this odor is not a newsworthy event but an everyday norm. Gritty, humid, acrid and sulphureous, the smell of petroleum is a clear sign of residents' close proximity to toxic infrastructure. The PetroEcuador installation dominates the landscape here; its pipelines and smokestacks

dwarf the small concrete homes that dot its perimeter. At night the plant's torch – the flare that burns away the gases and particulate matter that enter the ambient air – bathes the surrounding area in petrochemical light. Opened in 1976, the state once claimed that petroleum from this plant would radically transform Esmeraldas, improving urban life for the city's Afro-Ecuadorian majority by generating thousands

A mural in front of the city's Catholic cathedral representing fumes and smoke emanating from the refinery.
Photo: Nicholas Welcome, 2009.

of jobs in the oil industry. Mirroring the aspirations of other emergent petro-states, petroleum promised rapid development and inclusive citizenship (Apter 2005), though the industry soon became a monument to ambivalence (Cepek 2018: 9). While oil has provided good jobs for a privileged few, much of the population remains mired in poverty and the plant itself has decayed due to a lack of maintenance, sickening those most exposed to industrial fumes.

While leaking infrastructure and harmful pollution are points of serious concern for urban residents, PetroEcuador downplays their environmental and health impacts by asserting that only those working inside the facility are at risk. In effect, they gaslight residents by pushing them to question their own sensory encounters – including exposure to toxic odors apprehended through smell and other sensations. While the community understands smell as a kind of sentinel experience, warning them of environmental hazards and potential health risks (Davis-Jackson 2011; Keck and Lakoff 2013), the petro-state responds by suppressing information and dismissing sensory experiences of racialized infrastructural violence. In what follows I explore how the smell of airborne contaminants offers novel ways for urban residents to contest the unaccountability of PetroEcuador and its techniques of "toxic gaslighting" (Grandia 2020; see also Waldman 2016).

Sensing and denying danger

In anthropology's turn toward thinking about atmospheres (Choy 2011; Ahmann and Kenner 2020), Choy and Zee (2015) have called attention to conditions of "suspension" to look past the material breakdown of particles in air and toward the processes we use to make sense of them. This pushes us to think about how we sense pollution and how that sensing is politicized (Choy and Zee 2015: 213). On the one hand, smell is a bodily reaction that acts as a warning to some (Davis-Jackson 2011; Keck and Lakoff 2013). On the other, as a cultural response, smell can be mobilized or dismissed as gases and dust become points of interpretation. Smell is a cultural phenomenon that becomes a locus of power where people can define and impose meaning, mark difference and create sites of contestation (Corbin 1986). Infrastructures like the refinery evoke a multiplicity of embodied sensations, with smell often being seen as a sign of productivity or disrepair (Schwenkel 2015).

When addressing pollution in Esmeraldas, residents of the Southern Neighborhoods – the largely impoverished Afro-Ecuadorian districts that stretch four kilometers east of the refinery – and PetroEcuador's unionized, permanent workers often focus on different qualities of the air as they either assert or deny the presence of danger. Pollution is both a 'thing' and an assemblage of matter (Bennet 2010: 21). Locals talk about air pollutants holistically, experienced in multi-sensory ways as a mixture of tangible dust and noxious odors and gases, where the olfactory senses are particularly powerful signifiers of decay and danger. This atmosphere, perceived through smell, is unstable: it condenses, stills and dissipates through the day. The Southern Neighborhoods are particularly associated with the smell of petroleum.

The refinery's torch as seen in the Southern Neighborhoods. The flames make visible the pollution one smells in this sector of the city. Photo: Nicholas Welcome, 2009.

Maria's experience is useful for thinking how these tensions around smell work in practice. A thirty-year-old Black woman, Maria was a self-supporting mother of one, who lived in a neighborhood directly abutting the refinery. Maria worked as an interim secretary at the plant and, through a series of conversations, she often mentioned how the smell at work was overwhelming. She was eventually forced to leave her position because she developed what she described as an "allergy" to the refinery. The smell of oil processing was inescapable at work, causing bouts of sneezing and coughing fits. Medical personnel at the refinery diagnosed her with irritation from exposure to fumes and dust and suggested she wear a mask. Doctors thus framed her affliction as an individual work matter, rather than part of a larger environmental issue.

This diagnosis was deeply problematic as Maria also lived near the refinery. At night when the wind died down, the smell of gas spread through her neighborhood and into her house, even though her doors and windows were closed tight to keep out the fumes. Neighbors remarked that the toxic atmosphere was overpowering, burning their eyes and making it difficult to breathe – much like Maria's experience at work. A European Union-funded study confirmed that wind patterns concentrated and circulated pollutants through these neighborhoods (Jurado 2006). Some residents claimed that the effects were so strong that children would reportedly faint or vomit, which caused a Catholic school to leave the neighborhood in 2006. Whether at work or home, it was hard to escape the reach of the refinery's toxic atmosphere.

In contrast to Maria, PetroEcuador's permanent workers, whose union jobs were secured by having stayed for at least three years in technical or maintenance positions, were acculturated to downplay the hazards of smells. While they did not deny the existence of contamination, they asserted that pollution only posed a danger to those who worked at the plant itself. According to this logic, toxicity was considered an acceptable risk because the trade-off was well-compensated employment. In a work setting marked by a strict gendered division of labor, where most low-level employees like Maria faced precarity without a long-term contract, the ability to put up with the smell of petroleum was considered a masculine virtue. Male operations workers largely lived outside of the zone of influence of the refinery – residing either in the city center or in the PetroEcuador Villas, an isolated community that prevailing winds and distance kept free of air pollution. This division between permanent workers and the community at large generated a discursive field where the discrepancy between the groups allowed for denial and misrecognition by PetroEcuador.

Toxic infrastructure by gaslight

These quotidian situations forefront the question of how PetroEcuador comes to know smell. While managers at the refinery carry an air of expertise, their own strategies of sensing are questionable. In 2011 Ecuador's Comptroller, the state agency responsible for monitoring spending and the management of government resources, released an audit showing that the refinery has had no operational air-monitoring infrastructure since 2006. Rather than using sentinel devices – technologies that mimic the senses to measure pollutants – the refinery used security cameras to visually monitor for leaks. The report also revealed that PetroEcuador had commissioned but suppressed numerous health studies on the industry (DAPA 2010). PetroEcuador used its power of approval to filter information, impeding this knowledge from becoming public.

In this environment where the olfactory senses are called into question and where the environmental sciences have been corrupted by corporate aims, it is worth considering again the photo of smell discussed at the beginning. In this "smell event," most residents would look at the hill to see if there is any sign of danger. In the absence of a visible sign of breakdown like smoke or a fire, holding the nose is a means to convey awareness of the dangerous presence and persistence of noxious chemicals in the air. This simple act is actually a powerful critique that pushes for accountability from PetroEcuador.

A refinery fire as seen from the center of Esmeraldas: when confronted with a petrochemical odor locals look for a sign of activity from the facility.
Photo: Nicholas Welcome, 2010.

The stink of toxic infrastructure can be fleeting, an issue that makes ethnographic explorations of smell particularly challenging. Smell events are unpredictable, while everyday contamination and its odors are written off as inevitable and thus tolerable. In highlighting a bodily response to an unwelcome olfactory experience, the photographer attempted to give visibility not only to the violence and risk of toxic infrastructure but also to PetroEcuador's practices of gaslighting through its manipulation of reality and denial of responsibility.

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