

**DEEP TIME EXPOSURES: TO BE SICK WITH MEXICO CITY'S
TERMINAL SUDDENNESS**

Lachlan Summers
Department of Anthropology,
University of California, Santa Cruz

lrsommer@ucsc.edu

DEEP TIME EXPOSURES: TO BE SICK WITH MEXICO CITY'S TERMINAL SUDDENNESS

In the middle of 2018, nine months after Mexico City had last shaken with a major earthquake, Elena lay in the bed of her apartment in Doctores, wide awake for perhaps the fourth night in a row. “It was as if I could hear the walls,” she would later tell me, noting that such sleepless nights had become routine since the earthquake of September 19, 2017. While the 7.1M earthquake had frightened her, she was fine, as were her friends and family. Her building, too, was ostensibly unharmed. And yet, as time passed, cracks began appearing in the walls of her apartment; deep, alarming fissures that wrapped silently around the room. Still more troubling was that these cracks were mirrored in the apartments above and below hers, suggesting not isolated, superficial damage, but some hidden thing gone wrong in the building itself. As if its slow disintegration were too loud, Elena leaves her apartment, drives to the office where she works, puts her head on her desk, and falls asleep until her colleagues arrive.

Elena, by her admission, is *tocada*. *Tocado/tocada* translates as “touched”, but it is often used to mean “crazy”, like the English phrase “touched in the head”. In her 50s, Elena has lived in Mexico City all her life, and has experienced many of the city’s tremors. But during the minute that she lay on the floor on September 19, 2017, arms wrapped tightly around her head, something changed in her. Since then, she has been affected by a peculiar range of health issues: she has lost 15kgs, is plagued by dizzy spells, and suffers long bouts of insomnia. Though years have now passed, she tells me that the earthquake never really ended for her. Over the last four years in Mexico City, I have met dozens like Elena: people who describe themselves as *tocado* and present a broad range of symptoms. Alongside migraines, insomnia, loss of appetite, weakness, dizziness, diarrhea and

diabetes, they include psychological responses: a persistent sense of dread; generalised listlessness; pronounced feelings of claustrophobia; panic, for instance, when a passing truck shakes a building; and outbursts of terror. With varying degrees of embarrassment, they hang cutlery from their ceiling so they are warned of light tremors, pay close attention to their pet's behaviour, sleep with their shoes on, refuse to shower if they are alone in the apartment, and leave their front doors unlocked whenever they are home. Across these diverse symptoms and responses, there is one constant: the 2017 earthquake made them sick.

When a tremor strikes Mexico, people make the same joke: *un bolillo pal susto* [a *bolillo* for the fright]. A *bolillo* is a small, crusty bun, the foundation of a *torta* or, (my favourite) a *guajolota*—a *tamal* stuffed inside a *bolillo*. When *chilangos*¹ explain why you should eat a *bolillo* after an earthquake, they say that a shock [*susto*] can make you weak and, if unmanaged, give you diabetes. Often, they refer to their grandparents, who either explicitly taught them that they must eat a *bolillo* to avoid shock-induced diabetes, or who attributed their own diabetes to an experience of acute stress. After each earthquake during the COVID-19 pandemic, memes circulated my WhatsApp group chats that made light of the clash between the pandemic-induced demands to stay inside an apartment and the geological demands to leave it. One memorably shows a young man who has fixed the top of a *bolillo* over his mouth as if it were a mask [Figure 1].

¹ I use the slang "*chilangos*" to refer to residents of Mexico City.



Figure 1: Pandemic earthquake meme. Original author unknown.

The sense that people are sickened by an earthquake's shock resonates with medical anthropology work on *susto* [fright sickness]. *Susto* is a "culture-bound syndrome" throughout Mexico and Central America, which describes a person who experiences such a fright that their soul rushes from their body, causing a range of negative health outcomes like anxiety, depression, weakness, insomnia, wasting, bodily aches, diarrhea, and diabetes. *Susto*'s peculiar connection of acute moments of stress to negative health outcomes, alongside the breadth of its symptomology, has produced a range of interpretations. Critical medical anthropologists note the structural conditions of deprivation that produce illness, foregrounding the role of socioeconomic factors in a physiological cause like hypoglycaemia (Bolton 1981), malnutrition (Burleigh 1986) or internal parasites (Signorini 1982). Other works have understood *susto* as a culturally-specific variation of post-traumatic stress disorder (Bourbonnais-Spear *et al* 2007; Weller *et al* 2008). More commonly, *susto* is understood as an idiom of distress, rather than an illness, a means of reinforcing social norms (Aramoni 1990; Greenway 1998; Rubel *et al* 1984), disputing sexist expectations (O'Neil and Selby 1968), or protesting economic insecurity (Mysyk 1998). While divergent, these interpretations share the understanding that *susto* is a physiological expression of an individual's maladaptation to societal

expectations (Green 1994:121). This view has transcended medical anthropology, with *susto* included in a list of nine “cultural concepts of distress” in the American Psychiatric Association’s DSM 2013 (APA 2013).

The *susto* literature generally focuses on unmasking the ‘real’ cause underneath *susto*’s cultural expression of illness. Often, this approach explains away what people afflicted by *susto* say by appeal to the universal body of biomedicine, an overarching social structure, or Euro-American metrics of human psychology (Jacobo Herrera and Orr 2020). Despite there being one constant across the variegated illness—the experience of an acute moment of terror—fear is rarely examined as a causal factor (Jacobo Herrera and Orr 2020). But when “fear [is] a way of life”, as Green (1994) describes Xe’ca at the end of the Guatemalan Civil War, individualised pathologisations miss the political conditions that give rise to fear, how that fear is socialised, and how embodying that fear affects a person. Like a structure of feeling, fear is “not recognised as social, but taken to be private, idiosyncratic, even isolating” (Williams 1977:132), but in situations where fear is chronic, understanding that fear is central to understanding their illness.

In Mexico City, this fear is induced by earthquakes and associated geophysical processes. Particularly since the advent of the Anthropocene, geology has entered social sciences as an object of analysis. Alongside critical histories of the earth sciences (Braun 2000; Yusoff 2018), recent works have sought to engage *the geological* rather than geology. Povinelli (2016) offers a helpful framework for understanding the distinct trajectories of this emergent literature. Like many others (Irvine 2020; Højrup and Swanson 2018; Palsson and Swanson 2016), Povinelli notes that life, the *bios* of biopolitics, is contingent on earth, *geos*. But Povinelli argues that biopolitics is not governance of (and through)

life, but rather the management of the distinction between life and nonlife. She uses the term “geontopolitics” to denote the analytic architecture through which Anthropocene concerns register, offering three figures that characterise late liberal thought about the earth: ‘desert’ denotes work that understands life by examining its absence; ‘animist’ names strategies that declare everything alive with potentiality; and ‘virus’ labels the work that ignores existing distinctions between life and nonlife.

The figure of the animist, flagging a more-than-human approach (cf. Tsing 2013) to the study of culture, marks perhaps the most popular form of anthropological engagement with geology. Zee’s (2017, 2022) examination of China’s dust management frames the meeting point between political and geo-atmospheric processes as an “experiment” in which each reproduces the other. For Zee, these technopolitical works are not projects of control, in which sand is a passive object of management; rather, sand enters state strategies as an unstable, shifting participant, such that the state itself becomes sand-like. This symmetrical approach is used to examine the unsteady synchronisation of geological times and capitalist rhythms (Limbert 2020; Weszkalnys 2014), or how tectonic plates exceed—or, perhaps, refuse—incorporation into national political projects (Oguz 2021). In an early work, De Landa (1997) frames cities as the “mineralization of humanity”, in which the exoskeletons of early invertebrates were internalised as bones and spines, then later re-externalised as the “urban exoskeleton” of the city. While there are differences across these works, the focus is on continuities between the geological and the human, and the stakes, conditions, and outcomes of their embroilments with one another. In so doing, the animist line understands minerals, sand, and tectonic plates as *agents*. Through their attention to the liveliness of geology, and to the technopolitical projects that engage this liveliness, these scholars help me understand Mexico City as a geo-social formation,

rather than only an assortment of human things superimposed on a geological foundation—offering a means of noticing continuity between the endless creep of tectonic plates below and the muted unravelling of buildings and lives above.

While animist scholarship usefully theorises relations between the human and the geological, what exceeds this interface tends to disappear. Another thread of geological humanities scholarship foregrounds this excess, examining how geology demands redefinition of existing categories of life, nature, time, and the human (Chakrabarty 2012)—and so, might be understood as operating within Povinelli’s “desert” paradigm. Morton (2013) uses the term “hyperobject” to name those processes and entities whose scale defies comprehension, while Harmon (2018:10) uses “withdrawnness” to discuss those aspects of objects that always escape perception. Such works describe geology as the “meeting of incompatible scales” (Cohen 2015:20); to this end, Clark’s (2010:xvii) work on climate change rejects actor-network approaches to humans-environment interactions, imploring the humanities to study those “regions where we are absent” and the “worlds beyond us”. Working with Finnish nuclear waste disposal engineers Ialenti (2020:2) argues that “[g]azing into deep time... is our collective responsibility” to overcome the short-term thinking that produced the Anthropocene. Not only more-than-human, these works foreground the utterly inhuman to better understand how people live through changes in planetary history.

However, in “desert” works, geology often marks a frame of analysis, rather than concrete processes with which people live. I aim for a mode of engaging geology without either downplaying disparities in scale, like the animist, or surrendering to them, like the desert. Some recent works find a through-line by examining the imaginative, emotional, and

social work of living within abyssal scalar difference. Raffles' (2020) instructively uses the geological concept "unconformity" to think about (among other things) the deaths of his sisters. Denoting a stratigraphic irregularity that at once marks the loss of in-between layers and the fusion of unrelated things, "unconformities" speak to a geology that is "pre, post, necessary for, indifferent to, and transcendent of culture" (Raffles 2012:258). Relatedly, Tironi (2019:294) theorises geo-affective relations of Chilean geophysicists as a form of enskillment in a context of "relentless abjection and indifference", where rocky things "always exert an inhospitable resistance". These works point toward the geological as both present and absent, neither collapsed into the human nor utterly transcendent of it—and so, like Povinelli's "virus", indifferent to existing distinctions between human and inhuman, life and nonlife. Moreover, these works show that its capacity to shift in and out of focus makes geology an enduring practical, social, and material concern.

To better examine a geology that shifts capriciously between acute presence and chronic absence, between liveliness and withdrawnness, I have learned from scholars of toxicity. Toxicity is a "potency," as Chen (2012:203) argues, whose latency compounds via its inconspicuousness. This capacity to become present "directly implicate[s] the vulnerability of a living body" (Chen 2012:203) and shifts bodily orientations to the world. Writing about formaldehyde exposure, Shapiro (2017:368) argues that "indistinct and distributed harms are sublimated into an embodied apprehension of human vulnerability to and entanglements with ordinary toxicity". Unlike the desert, the knowability of latent things is a material, embodied process, rather than only an analytic problem (Murphy 2006). Moreover, unlike the animist, toxicity examines the interface between the human and the environmental without a normative sense of relationality; writing of pollution in Mexico City, Roberts (2017) reminds us (and I'm paraphrasing)

that “becoming-with” (cf. Haraway 2008) is sometimes “becoming-with shit”. Shapiro’s (2017) use of “exposure” helpfully frames human relationships with absent presences, those processes that register on the body without being unequivocally known. As uncertain exposure registers, it can be debilitating, and its indeterminacy both induces fear and demands new forms of embodied knowledge.

This essay examines the geological knowledge that fear assembles in the form of being *tocado*. Central here is that, for buildings in Mexico City, destruction is only a relative condition. They might be okay. But if they’re on the right side of livable now, no-one can be sure for how long. Soft soils, earthly motions, lax legislations, and corrupt developers conspire a city full of buildings that might be slowly falling, only perceptible if you know how to notice. After an acute experience of an earthquake, people who are *tocado* attune themselves to the signs that populate the spectrum between absolute and relative destruction. In this article, I follow these signs. Outlining what might be considered a geological sensorium, I show how people who are *tocado* develop sensitivity to the barely-perceptible kinaesthetics of the city’s materiality. This sensitivity to ongoing geological processes induces an embodied apprehension of human vulnerability to earthly processes and a sense of having been enveloped by forces far exceeding the human. Rather than an individual pathology or cultural expression of a human universal, I theorise *tocado* as an earthly seasickness, provoked by attunement to how deep time has become present in Mexico City.

1. Ungrounding Earths

As I fall onto the street, my eyes are fixed on the skyline. I had been looking where Fernanda was pointing—where, a few blocks away, a building was leaning perilously over

the street in-front—when my foot caught a crack that had until then kept itself hidden. The first time I fell over on a transect walk with an interlocutor, I was embarrassed; by now I am used to it. At the time, I was walking with Fernanda in the working-class neighbourhood of Doctores, visiting the buildings she expected would fall, but I could have been anywhere. I could have been careening groundward during any one of the dozens of memory walks (Bonilla 2011) I undertook with residents across central and eastern Mexico City, as I listened to their descriptions of where the earth was moving and which buildings seemed to be on their way down. I might have been slotting the front tyre of my bike into a new crack on the road's surface as I rode to a meeting of earthquake victims. I could have been sprawling, arms flailing, while accompanying the victim advocacy group *Los Damnificados Unidos* on their regular protest walks from Tlalpan to Zócalo, as they reminded the city that, for them, the 2017 earthquake was still ongoing. The gravity of the situation mattered little; if I was walking, I would at some point end up on my face, the permutations of the city's surface catching me off-guard.

This is unsurprising. Although the basin in which Mexico City sits is (currently) 2,240m above sea level, it has spent most of its history underwater. Completely submerged under the sea until the end of the Tertiary Period, the region began to rise around 30 million years ago as the subduction of the Cocos tectonic plate beneath the North American plate caused vertical fractures through the continental crust. As the plate lifted, magma poured upward through these discontinuities to form the Trans-Mexican Volcanic Belt, a 998km-long east-west oriented arc that cuts across Mexico from Nayarit to Veracruz. The Valley of Mexico was then still a valley, hemmed by mountains to the west (Sierra de las Cruces), east (Sierra Nevada) and north (Sierra Pachuca), with the river Rio Balsas flowing south to the Pacific Ocean. In the Late Pliocene, these volcanos began erupting, sealing the

southern reaches of the valley and forming a basin 5,960km² in size. Melting snow on nearby peaks and summer rainfall poured down the mountains, pooling eventually into five connected lakes, saltwater in the north, freshwater in the south. Recognising the security offered by the environment, the Mexica arrived in the 14th century, constructing a vast system of dams to keep these waters separated, and founding the city-state Tenochtitlan. Two hundred years later, the Spanish conquistador Hernán Cortés saw Tenochtitlan, and described with wonder an immense city “built on a salt lake” that “rises and falls with its tides as does the sea” (Mundy 2015:11). The colonists found the city’s environment so unfamiliar that they demolished the infrastructure that managed the lakes, draining the basin (Candiani 2014; Vitz 2018), establishing what would become one of the largest cities in the world on the soft soil of a lakebed, and setting into motion a half-millennium-long struggle to manage the surface of Mexico City (Hoberman 1974).

The Mexican soil scientist Carmen Gutiérrez-Castorena (2005) and her colleagues demonstrate what an impossible megacity Mexico City is with a thought experiment: imagine a rectangular prism of soil, they tell us, whose face is one metre by one metre, and is 70 metres long, the length of the deepest point of the clay layer beneath the city. That’s 70 cubic metres of ground, cubic metre by cubic metre. Were this imaginary column put into an oven at 105 degrees Celsius for four days, its water would evaporate, and we’d have less than seven cubic metres of soil. Then, once the air pockets that held the water collapsed, there would be just over half a cubic meter of solid material remaining. Although the lakes are gone, the city still floats. Sort of. As the city grew, it burrowed into the soft soil beneath it (Zeevaert 1953). Sinking on average of 20-30cm per year, surface fissures emerge around the city, particularly in the eastern regions of Iztapalapa and Tláhuac, and especially during earthquakes (Osmanoglu *et al* 2011). 15 of

the city’s 16 delegations are considered subject to earthly disturbance, with Benito Juárez, Iztapalapa, Cuauhtémoc and Tláhuac especially prone (Avilés and Pérez-Rocha 2010; see Figure 2). Throughout Cuauhtémoc and Tláhuac, where I conducted most of my research, *grietas* or fractures emerge at the intersection of soils with different rates of subsidence, appearing in writhing concrete, subsiding roads, and deep cracks. The city’s peculiarly empty underground generates an intensely present surface.

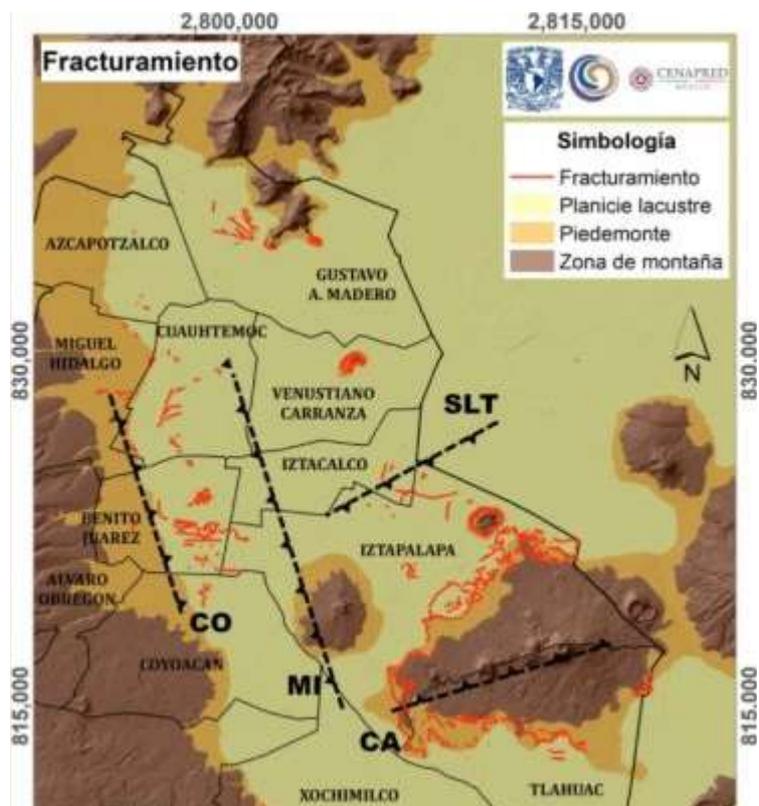


Figure 2: Macro-fractures across Mexico City. From Carreón Freyre (2020).

So, while I wouldn’t recommend tripping over as method, it did prompt conversation about what was happening beneath us. As I dust myself off, people would say, “*Es un desmadre, este paso* [This path is a mess]”, or words to that effect, with some sympathy and a stifled smile. Then they reflect upon the motion of the earth beneath us, branching easily from “*¡Aguas!* [Watch out!]” to a meditation on the crack that I tripped over. We were never short of material, either to trip over or to discuss. Concrete cracks; gutters that might once have stood a foot above street level sink down, dragging the road with them;

the camber of the streets swing from side to side along their length; holes emerge along these swinging streets that gradually swallow the road itself. Sometimes a fissure emerges as one part of a street shears away from another, creating a step where on a level surface. As I fall with Fernanda, on our walk in Doctores, she says, “You can’t trust it, *pinche*² ground.” With two fingers, she follows as it splinters into discrete but connected cracks: one that passes from the footpath to the road adjacent—a patch of subsidence undermining the road, perhaps—and another that digs its way underneath a nearby building to do unseen work to its foundations. “It’s not only the cracks,” she tells me, “It’s whatever else is happening down there”.

Whatever’s happening down there is an ongoing object of concern for people who describe themselves as *tocado*. Their fearfulness of future seismicity makes them hypersensitive to these cues of ongoing earthly motion. There are many things that bring a building down in Mexico City, but the hollow earth is central, slowly giving away for years, such that a standing building might just be hovering. Alongside cracks and subsidence in the earth’s surface, residents track where water pools after summer rains to see if they might follow the ancient waterways to future seismic risk. But more often, they use buildings to understand the action of the earth beneath them, as if buildings were antennae that caught signal of hidden geophysical motion.

2. Angles of Uncertainty

When I tell Jose Enrique that I cannot see what he is seeing, he clicks his tongue. “I think it gets a little wider at the top,” I say, “but I couldn’t tell you for sure.” As I look out

² *Pinche* is a difficult slang to translate; it literally means ‘trickster’, but it’s used like the adjectival ‘fucking’.

across the two-metre atrium outside his bedroom window to the apartment opposite, he tells me, with more than a little impatience, “It’s getting bigger. You think I’m crazy, but I see it every day. I know it’s getting bigger.” I squint out the window again, take a photo, then squint at that [Figure 3]. It does seem to be getting smaller toward the base of the building, but I can’t tell if my eyes are tricking me, the perspective of the camera distorting the angle. But since he noticed the gap, a year or so after the earthquake, Jose Enrique struggles to sleep, has higher blood pressure, and is occasionally “seized by terror”. Though he experienced several of the city’s major earthquakes, he tells me that he feels different after 2017’s. “Anyway, there’s a gap, and that’s not good,” he tells me, and I nod. In apartments like Jose Enrique’s, on the fourth storey of a mid-century building, in central *colonias* like Guerrero, where numerous buildings have fallen, gaps take on great importance.



Figure 3: Jose Enrique’s uncertain angle. Colonia Guerrero.

People know the stories of buildings that suddenly collapse in Mexico City. They know stories of people like the architect Max Tenenbaum, who designed numerous buildings

throughout Mexico City, one of which fell in 1985 (the city’s largest earthquake) and two of which fell in 2017. They know how figures like him became obscured in the institutional flurry to reform architectural codes post-1985 (Alcocer and Castaño 2008), and that despite his fallen building, and despite his fleeing the country in 1986 (Stockton 1986), he could become a *Corresponsable en Seguridad Estructural* [CSE] in new institutional bodies charged with verifying the structural security of buildings throughout the city. They know that while the government might describe *Directores Responsables de Obra* [DRO] and *Corresponsable en Seguridad Estructural* as separate “assistants of public authority” (Gaceta Oficial 2019), architects like Max Tenenbaum can be the DRO who designs and oversees a building’s construction *and* the CSE who reviews how it fulfils architectural codes. People know the stories that, because developers will fire CSEs and DROs that require them to use, for instance, more durable, and so more costly, construction material, a market has developed in Mexico City for what is known colloquially as “*firmones* [signers]”—DROs and CSEs who can be paid to sign blueprints without verifying them. And residents know that, despite the increased attention that DROs and CSEs were receiving after the 2017 earthquake, and despite the notoriety of his three fallen buildings, Tenenbaum renewed his DRO licence in November 2017.

DIRECTOR RESPONSABLE DE OBRA

	Número	0501
	Tipo de Registro	DRO
	Nombre	MAX TENENBAUM ROSENFELD
	Profesión	INGENIERO CIVIL
	Domicilio Profesional	Delegación: MIGUEL HIDALGO Colonia: Polanco Calle: ARISTOTELES Número Ext: 47 Número Int: 302 Código Postal: 11560
	Teléfono Profesional	5532225813
	Correo Electrónico	mtrconstruccion@gmail.com
Vigente Al	17-05-2019	

Figure 4: DRO licence [*carnet*] of Max Tenenbaum, renewed in 2017, after three of his buildings collapsed. Obtained via open-source intelligence search of SEDUVI’s website.

But this story is not about Max Tenenbaum. Rather, it's about the widespread fear residents have of the impossibility of knowing if the slippery hands of someone like him pocketed the money and drew the designs for the building that's unravelling around them. While, in June 2016, then-jefe del Gobierno³ Miguel Ángel Mancera promulgated a decree that would curtail the loopholes that let people like Tenenbaum to design and verify buildings, residents knew that even if it were to result in legislation—and it didn't; Mancera suspended this decree in November 2016—it would never result in a meaningful procedure of enforcement. For instance, *chilangos* point out billboards that sit atop residential housing. In 2004, the Mexico City Government decreed that, because of the risk they posed in strong winds and earthquakes, all billboards be removed from residential buildings. Eventually, the Mexico City government promulgated a law that prohibited billboards on residential housing and set into a motion a plan for their removal (Gaceta Oficial 2010). And yet, in the 2017 earthquake, Viaducto Miguel Aleman 106 collapsed under the extra weight and resonance a billboard had furnished the building, killing 11 people, its billboard scheduled for removal since 2014 (INVEA 2015). Billboards still sit atop residential buildings throughout the city, prominent markers of the state's inability to enforce the laws it promulgates.

³ I haven't translated jefe de Gobierno because I don't really know how: it's more than a mayor, but not a governor, reflecting Mexico City's status as a Federal District, rather than a state or a city.



Figure 5: Illegal billboard, on Insurgentes, Roma Norte.

It is for these suspicions that seemingly innocuous angles, like that which might be widening outside Jose Enrique's bedroom, are so unsettling. Cracks, gaps, and angles are uncertain markers of a process having initiated, signs that invite scepticism toward a building's permanence. But the attention *chilangos* pay to a building's ongoing motion makes them sick. I accompany Ana on the route she walks to take the *pesero* (minibus) to the salon where she works, and pass a perilous building she hurries under each morning acutely. At first, I can't make it out, but she grabs my arm and says, "Ay it gives me *vertigo*, even from here." Ana has told me she suffers from two types of vertigo. One is a light-headed dizzy feeling, induced by being in high buildings—though this has only come to affect her after the 2017 earthquake. The other is what she feels when she passes this building each day, and buildings like it: "It makes me dizzy when I'm underneath it, it's as if I feel it pressing onto me." I don't understand until we reach the base of the building, and then I feel it too, as if the top of the buildings were rushing down on top of us. At the base of the two buildings, there's a gap of a few millimetres; five stories above,

it spreads to about half a metre [Figure 6]. They're not condemned, and they seem occupied, but the buildings have splayed away from another, only upright for the buildings on their opposing sides. Ana begins breathing heavily, and we walk quickly away from the buildings to watch them from a safe distance.



Figure 6: Splaying buildings, Tlalpan.

After catching her breath, Ana says angrily, “Every day I pass it, and it looks bigger. Like it has suddenly grown. I don’t know if there was a little tremor, if something underneath has given way, but they’re moving. How long until they come down?” I nod. It is truly horrifying to stand underneath them, and I feel dizzy too, like a reverse vertigo, induced by the proximity of tall thing so unsteady. “When they come down, those buildings come down with them,” she continues, waving her arm laterally, “Why the fuck are they still allowed to be up?!” As I walk home, I’m tripping over again, but this time because I’m trying to calculate what an admissible incline for these buildings might be. Mexico City’s

Government's *Normas Técnicas Complementarias para Diseño y Construcción de Estructuras de Concreto* denotes the “coefficients of seismic design” required by Article 181 of Mexico City's *Reglamento de Construcciones Para el Distrito Federal*, specifying that a building may only lean 0.43% of its height. If they're 20m tall, which is my impression, they should only lean 8.6cm. This doesn't help me. How far is 8.6cm? How would 8.6cm appear from 20m below? Would it really be safe if it were only 8cm? If it isn't yet 8.6cm, how long until it would be?

3. Internalising Inhuman Times

Mexico City is littered with markers of its seismic history. Across the city, there are gaps in the skyline, awkward, angry openings that register the building that had once been there. Carparks in central parts of the city—particularly Roma Sur, Guerrero, and Doctores, working class districts that hem touristic zones—correspond with the registry of buildings damaged in 1985, making these gaps perhaps the most prominent markers of seismicity throughout the city. They commonly appear on street corners, where buildings are exposed to two shearing forces, rather than only one. While a few parking lots emerged after the 2017 earthquake, most sites of fallen buildings remain boarded up. I commonly pass these sites and see someone standing silently, looking into the void that has been left in the skyline [Figure 7]. Sometimes, parts of the building remain, a seemingly normal structure at eye-level that is busily collapsing overhead, as if the city were a surrealist landscape intended to confuse the senses [Figure 8].

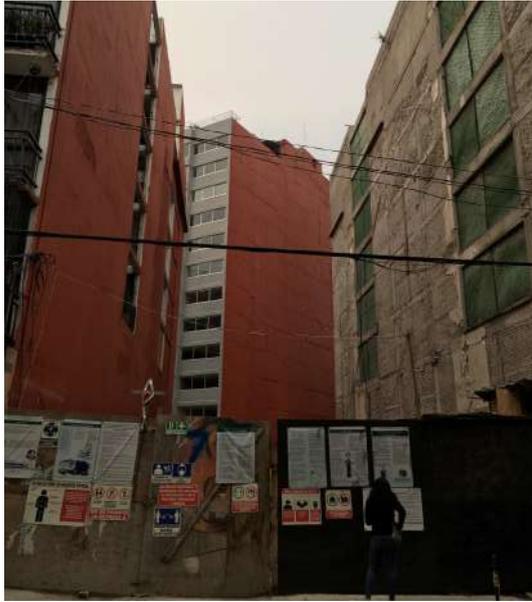


Figure 7: Navarte, 2021.



Figure 8: Juarez, 2019.

But the duration of geophysical motion troubles simple modes of thinking about history, causality, and time. Calzada Tlalpan 1171 is one such building [Figures 9-15]. I couldn't understand why it would be condemned until I met Gloria, a former resident with whom I visited the building, who showed me photos of the fractures spiralling up its internal atrium. Calzada Tlalpan 1171 was finished in 1979, and was by all accounts damaged severely during the 1985 earthquake. Gloria herself moved into the building in 2003, when a large fissure hung over the central stairwell and cracks were still appearing inside apartments. Even then, prior to the 2017 earthquake, the cracks seemed to spread. She joined her neighbours in paying for occasional repairs, becoming accustomed to chunks of wall suddenly crashing to the ground and debris piling up in common areas until someone bagged it up and took it out. "I can't believe it now," she told me, "but we thought we had done what we needed to make the it safe. The walls and roof falling somehow didn't bother us".

After the 2017 earthquake, these cracks spread with ferocity. “They appeared in new places, *bien cabrón*⁴”, she tells me, and she and the neighbours felt these new cracks were different. They asked the DRO to check the building, and his assessment, finalised in May 2018, confirmed their fears: the building was at a “medium risk of collapse” because a reinforcement beam the residents themselves had installed in the mid-1990s had so damaged the first floor of the building. The earthquakes had compounded one another through their attempts to manage the city’s seismicity. While the shearing effects of that beam in the 2017 earthquake did significant damage to the building, the assessment showed that the building had long been unsafe [Figures 9-15]. Residents were forced out; Gloria moved in with her cousin. But she hasn’t been the same since:

When we received that notice, the ‘medium risk of collapse’ – what the fuck is that, a *medium* risk of collapse? – it all changed for me. It wasn’t just the earthquake. It’s that we were so lucky... It was falling the whole time, and we had no idea. The earthquake just aggravated what was always happening there. It was happening all the time, all the time, all the time.

Gloria and I stand in front of her former home [Figure 13], its dark windows like open mouths, the peeling grey façade flashing occasionally through a black veil that billows around the building, barely attached, the debris it is intended to catch littering the footpath around us. “It’s still falling, but it’s still here”, Gloria says to me, motioning to the debris on the footpath. The rubble around us, which she had once casually swept into piles, was now a marker of something that had long gone wrong in the building.

Now when I see rubble like this, or cracks, I panic. I can’t do it. I see it and my heart goes *pum pum* and I can’t breathe. I know that I was living in a building that was waiting to come down, and it could have done that at any point in those 14 years... I mean, yes, it didn’t fall on me. But I don’t feel like I escaped it. Wherever I am, I still feel unpleasant [*inagusto*], like I’m still here.

⁴ In this context, this slang means ‘with great intensity’.

I look from her building to the storefront on the ground floor next door, a computer repair store, where two young guys are bullying each other. Gloria meets my gaze and shakes her head, eyes wide.



Figure 9: December 2008
[All images from Google Maps]



Figure 10: April 2011



Figure 11: January 2015



Figure 12: September 2017



Figure 13: December 2018



Figure 14: July 2019



Figure 15: November 2021

Across the city, people worry if the cracks in their walls are markers of unseen forces in their buildings. When Elena, with whom I began this essay, opened the door to her apartment, the crack is the first thing I see. It snakes its way from the kitchen, through the wall that separates the bedroom from the kitchen, around the bedroom, then peters out. She's aware that diagonal cracks are more worrisome than horizontal ones, so we pay attention to where the crack seems to pivot at an angle, and where it intersects with support beams [Figure 16]. This crack appeared a few weeks after the earthquake, a new chink [*resquicio*] that was deeper than what she was familiar with. A few months pass, the cracks spread, and Elena's neighbours reported similar cracks, as if a connected column had been damaged, so they decided to contact the building's DRO. He told them that the cracks were superficial, and could be repaired by resurfacing the walls; Elena, gesturing around her, says, "But I had doubts".



Figure 16: The beam from which Elena suspects the cracks emerged.

By the point of contacting the DRO, Elena was finding it impossible to hold food down. A problem that returns periodically, she estimates to me that she has lost 15 kilograms since the 2017 earthquake. "I'm nauseous all the time, but there's nothing wrong with me," she tells me, "I've been to check-ups, the doctors don't know what's happening."

The earthquake had struck while she was alone in her third-floor apartment, shaking her so violently that she fell to the ground. She lay on her side, arms wrapped around her head, praying. “The headaches began immediately”, she says, “and I haven’t felt right since”. After a few sleepless weeks, she left for her brother’s house in Texas. “But when I got back it was so awful. The crack was *feísimo* [extremely ugly], like *angry*, it had jumped across the wall in two weeks, as if it were taking advantage of me not being here. It wasn’t my home when I returned.” Neighbours leasing their apartments left the building, but Elena, who bought the apartment with her now-deceased husband, felt like she couldn’t move. “Where would I go?” she asks me, “And who would want to buy this place from me? I’m trapped.”

A few months after contacting the DRO, Elena takes a pencil and, “as if it were a growing child”, draws a line across the crack and writes the date. She notices a few weeks later that the crack had splintered beyond where she had drawn the line. She begins marking the various cracks around her apartment at several-week intervals, confirming to herself that they were all ongoing. She tells her neighbours, who do the same thing, or who take photos of the cracks for provenance, corroborating that their cracks are in motion. When I visit Elena’s her apartment, the various cracks are all dated several times, and patches of the wall’s surface are ripped out between dates that are close to one another, checking if a crack on the surface was a fissure underneath. “When do you decide to date them again?”, I ask her, “Do you do it on the same day each month, do you set an alarm?” and she tells me no, “Just sometimes I see it and it tells me that it is worse”.



Figure 17: Section of a dated fissure passing behind a shelf in Elena's living room.

Government guidances recommend verifying individual cracks, but not measuring their movement. However, Elena's attention to her cracks' speed suggests that the problem is not just the damage, but the fact that an indeterminate process might have taken root within her apartment. A one-off check is insufficient. Elena dates the crack when it seems to have sped up; similarly, she leaves the apartment when she "gets the feeling" or when her cat behaves strangely, rather her own schedule. While not everyone dates their apartment's cracks, residents regularly have a sense for their movements, knowing when particular splinters occurred, and whether it was caused by a tremor, or some hidden movement in the earth or their building. This attunement to a buildings' ongoing motion transforms homes into indifferent geophysical entities; Elena tells me, "We're all marking these cracks, but really it's just one crack. They all connect, I'm nearly certain, just somewhere we can't see anything. It is one crack, wrapping itself around all of us."

4. Deep Time Exposures

As the fissures of the city's surface widen, as the gap in Jose Enrique's neighbouring building widens, as the buildings near Ana continue splaying, as cracks writhe their way

through Elena's apartment, Julia stares absently out the window toward the abandoned building adjacent hers and says to me, "*Se acerca el día en el que se cae encima de mí* [The day is coming in which it falls on top of me]". Julia, who had by then described to me a few times her ongoing post-earthquake symptoms—insomnia, persistent headache, dizziness, claustrophobia, and sensitivity to loud noises. However, what interests me is in her language itself. Her phrasing uses the reflexive verbs *acercarse* (to approach) and *caerse* (to fall), articulating her worry in a passive voice. Such a grammatical formulation is not uncommon, and perhaps was intended to convey her sense that the neighbouring building is an agentic subject and she its passive object. But in the phrasing *se acerca el día* [the day approaches], Julia herself is not approaching the day in which the building falls; the day in which the building falls is approaching her. Time, in her rendering, is not organised around her position in the world, in what might be understood as a sense of temporality that orients itself around the experience of a central individual, but rather, time is *happening to her*, something that becomes apparent through the presence of the slowly falling building next-door. It—and so she—is still within the time of the earthquake.

Within the first minute of the 2017 earthquake, 40 buildings collapsed in Mexico City; at the final count, 24,581 were damaged and over 3,300 destroyed. I have concrete data of 33 of those first 40 buildings and, ranging in age from a few months to 74 years, those buildings that immediately collapsed collectively spent 1,205 years upright in the city. But, where we might be inclined to understand a building as a process, as literally *building*—by resisting weathering, holding itself erect against gravity, constantly working against those forces that would bring it back down to earth—in Mexico City, subsidence, graft, seismicity, and decay convert buildings into *builts*: past tense, overwhelmed by greater forces and no longer under their own powers. We might ask, then, how many of

those 1,205 upright years were spent falling? And, since the 2017 earthquake, and the earthquakes and subsidence since then, how many other buildings have initiated their slow collapse?

These questions, and the buildings that impel them, hang heavily over residents of Mexico City. Rather than their affliction being induced by a traumatic experience and a fear of future earthquake events, *los tocados* fear the processes that were initiated within the earthquake: the fractures that fracture, the fissuring fissures, the buildings that stop building and suddenly fall decades after they were damaged. This fear compels them to notice the ongoing signs of a building's decline; of imminent danger that is barely distinguishable from no danger at all. For this reason, we might understand being *tocado* as an earthly seasickness, induced by an embodied apprehension of ongoing geophysical motion. And while the signs they notice are worrying, the fear comes from the future to which their motion points: the sense of having been in a process that happens *all the time, all the time, all the time*, and the inevitable end toward which this process of decline moves. Its inevitability inflects the indeterminate markers of change with an uncertain urgency, impelling temporal questions like "Is this new?" and "How long has it been like that?", but also questions like "How long do we have left?" and "When could we be certain?" This is a form of seismic time that is not only knowable through the seismic event; it is a time that is introduced through an earthquake, but carried forth by ongoing geophysical and political processes. Rather than a pathological individual response or a culture-bound form of expression, we might understand being *tocado* as a mode of noticing how deep time has become present in Mexico City.

5. References

- Alcocer, S.M. and Castaño, V.M. 2008. Evolution of Codes for Structural Design in Mexico. *Structural Survey* 26(1):17-28.
- American Psychiatric Association. 2013. *Diagnostic and Statistical Manual of Mental Disorders: DSM-5*. 5th ed. Washington, DC: American Psychiatric Association.
- Aramoni, M.E. 1990. *Talokan tata, talokan nana: Nuestras raíces: Hierofanías y testimonios de un mundo indígena*. Mexico City: Consejo Nacional para la Cultura y las Artes.
- Avilés, J., and Pérez-Rocha, L.E. 2010. Regional subsidence of Mexico City and effects on seismic response. *Soil Dynamics and Earthquake Engineering* 30(10):981-989.
- Bolton, R. 1981. Susto, Hostility, and Hypoglycemia. *Ethnology* 20(4):261-76.
- Bonilla, Y. 2011. The Past Is Made by Walking: Labour Activism and Historical Production in Postcolonial Guadeloupe. *Cultural Anthropology* 26(3): 313-39.
- Bourbonnais-Spear, N., Awad, R., Merali, z., Maquin, P., Cal, V., and Arnason, J.T.. 2007 Ethnopharmacological Investigation of Plants Used to Treat *Susto*, a Folk Illness. *Journal of Ethnopharmacology* 109(3):380-87.
- Braun, B. 2000. Producing vertical territory: Geology and governmentality in late Victorian Canada. *Ecumene* 7(1):7-46.
- Burleigh, E. Patterns of Childhood Malnutrition in San José Poaquil, Guatemala. Unpublished Ph.D. dissertation, University of California, Los Angeles.
- Candiani, V.S. 2014. *Dreaming of Dry Land: Environmental Transformation in Colonial Mexico City*. Stanford University Press: California.
- Carreón Freyre, D. 2020. UNAM realiza mapa digital sobre fracturas en el suelo de la CDMX. *Fundación Ciudad de México*.
- Chakrabarty, D. 2012. Postcolonial Studies and the Challenge of Climate Change. *New Literary History* 43(1):1-18.
- Chen, M.Y. 2012 *Animacies: Biopolitics, Racial Mattering, and Queer Affect*. Durham, N.C.: Duke University Press.
- Clark N. 2011. *Inhuman Nature: Sociable Life on a Dynamic Planet*. London: Sage.
- Cohen, J. 2015. *Stone: An Ecology of the Inhuman*. Minneapolis: University of Minnesota.
- De Landa, M. 1997. *A Thousand Years of Nonlinear History*. New York: Zone Books.
- Gaceta Oficial. 2019. *Lineamientos Para la Acreditación de las Actividades de Actualización Profesional de los Corresponsables en Seguridad Estructural*.
- Gaceta Oficial. 2010. *Ley de Publicidad Exterior de la Ciudad de México*. CDMX.
- Green, L. 1994. Fear as a Way of Life. *Cultural Anthropology* 9(2):227-56.
- Greenway, C. 1998. Hungry Earth and Vengeful Stars: Soul Loss and Identity in the Peruvian Andes. *Social Science and Medicine* 47(8):993-1004.
- Gutiérrez-Castorena, M. d. C., Stoops, G. C., Ortiz Solorio, A., & López Avila, G. 2005. Amorphous silica materials in soils and sediments of the ex-Lago de Texcoco, Mexico: An explanation for its subsidence. *CATENA* 60: 205-226.
- Haraway, D. 2008. *When Species Meet*. Minneapolis: University of Minnesota Press.
- Harmon, G. 2018. *Object-Oriented Ontology: A New Theory of Everything*. Pelican.
- Hoberman, L. 1974. Bureaucracy and Disaster: Mexico City and the Flood of 1629. *Journal of Latin American Studies* 6:211-230.
- Højrup, M. and Swanson, H.A. 2018. The making of unstable ground: The anthropogenic geologies of Søby, Denmark. *Journal of Ethnobiology* (38)1:24-38.
- Ialenti, V. 2020. *Deep Time Reckoning: How Future Thinking Can Help Earth Now*. Cambridge, Massachusetts: MIT Press.
- INVEA. 2015. *INVEADF/OV/A/440/2015*.
- Irvine, R.D.G. 2020. *An Anthropology of Deep Time: Geological Temporality and Social Life*. Cambridge: Cambridge University Press.

- Jacobo Herrera, F. and Orr, D. 2020. *Susto*, the anthropology of fear and critical medical anthropology in Mexico and Peru. In J. Gamlin, S. Gibbon, P.M. Sesia, and L. Berrio [eds.] *Critical Medical Anthropology: Perspectives In and From Latin America*. London: University College London Press.
- Limbert, M. 2020. Making Mountains. Fieldsights, *Society for Cultural Anthropology* website. Available from: <https://culanth.org/fieldsights/making-mountains>. Accessed September 15, 2022.
- Morton, T. 2013. *Hyperobjects: Philosophy and Ecology after the End of the World*. Minneapolis: University of Minnesota Press.
- Mundy, B. E. 2015. *The Death of Aztec Tenochtitlan, the Life of Mexico City*. Austin: University of Texas Press.
- Murphy, M. 2006. *Sick Building Syndrome and the Problem of Uncertainty: Environmental Politics, Technoscience, and Women Workers*. Durham: Duke University Press.
- Mysyk, A. 1998. Susto: An Illness of the Poor. *Dialectical Anthropology* 23(2):187–202.
- Oguz, Z. 2020. Cavernous Politics: Geopower, Territory, and the Kurdish Question in Turkey. *Political Geography* 85:
- O’Neill, C. W. and Selby, H.A. 1968. Sex Differences in the Incidence of *Susto* in Two Zapotec Pueblos: An Analysis of the Relationships between Sex Role Expectations and a Folk Illness. *Ethnology* 7(1):95–105.
- Osmanoglu, B., Dixon, T.H., Wdowinski, S., Cabral-Cano, E., and Jiang, Y. 2011. Mexico City subsidence observed with persistent scatterer InSAR. *International Journal of Applied Earth Observation and Geoinformation* 13:1-12.
- Palsson, G. and Swanson, H. 2016. Down to Earth: Geosocialities and Geopolitics. *Environmental Humanities* 8(2):149-171.
- Povinelli, E. A. 2016. *Geontologies: A Requiem to Late Liberalism*. Durham: Duke University Press.
- Raffles, H. 2020. Speculations on Lost Time by Hugh Raffles New York: Pantheon Books.
- Raffles, H. 2012. Twenty-Five Years is a Long Time. *Cultural Anthropology* 27(3):526-534.
- Roberts, E.F.S. 2017. What Gets Inside: Violent Entanglements and Toxic Boundaries in Mexico City. *Cultural Anthropology* 32(4):592-619.
- Rubel, Arthur J., O’Neill, C.W., and Collado-Ardón, R. 1984. *Susto: A Folk Illness*. Berkeley: University of California Press.
- Shapiro, N. 2017. Attuning to the Chemosphere: Domestic Formaldehyde, Bodily Reasoning, and the Chemical Sublime. *Cultural Anthropology* 30(3):368-393.
- Signorini, I. 1982. Patterns of Fright: Multiple Concepts of Susto in a Nahua-Ladino Community of the Sierra de Puebla (Mexico). *Ethnology* 21(4):313–23.
- Stockton, W. 1986. Seeking the Killer Quake’s Architects. *New York Times*, Nov. 29.
- Tironi, M. 2019. Lithic Abstractions: Geophysical Operations Against the Anthropocene. *Distinktion: Journal of Social Theory* 20(3):284-300.
- Tsing, A. 2013. More-Than-Human Sociality: A Call for Critical Description. In K. Hastrup [ed.] *Anthropology and Nature*. Routledge: New York and London.
- Vitz, M. 2018. *A City on a Lake: Urban Political Ecology and the Growth of Mexico City*. Duke University Press: Durham and London.
- Weller, S C., Baer, R.D., Garcia de Alba Garcia, J. and Salcedo Rocha, A.L. 2008. Susto and Nervios: Expressions for Stress and Depression. *Culture, Medicine, and Psychiatry* 32(3):406–20.
- Williams, R. 1977. *Marxism and Literature*. Oxford: Oxford University Press.
- Weszkalyns, G. 2014. Anticipating Oil: Temporal Politics of a Disaster Yet to Come. *The Sociological Review* 62(S1):211–35.
- Yusoff, K. 2018. *A Billion Black Anthropocenes or None*. Minneapolis: University of Minnesota Press.
- Zee, J.C. 2022. *Continent in Dust: Experiments in a Chinese Weather System*. Oakland: University of California Press.

- Zee, J.C. 2017. Holding patterns: Sand and political time at China's desert shores. *Cultural Anthropology* 32(2):215-241.
- Zeevaert, I. 1953. Pore pressure measurements to investigate the main source of surface subsidence in Mexico City. In *Proceedings of the 3rd International Conference of Soil Mechanics and Foundation Engineering* (Vol. 2, pp.299-304). Mexico City.