Introduction

“Lead” is more sinister, maybe because of its color, hue or weight. Lead communicates something special to us about matter, our existence in matter. . . . And it isn’t the Grand Inquisitor’s universal anthill that we have to worry about after all, but something worse, more Titanic—universal stupefaction, a Saturnian, wild, gloomy murderously, the raging of irritated nerves, and intelligence reduced by metal poison, so that the main ideas of mankind die out, including of course the idea of freedom.

Saul Bellow, The Dean’s December (1982, 249)

Joaquín’s body trembled in pain. It hurt everywhere, from his bones and joints to his crushing migraines. The six-year-old boy was pale and weak, a shadow of the formerly vibrant and playful kid from La Teja, western Montevideo’s gritty and proud working-class neighborhood. Along with his sharp and chronic pain, he was severely anemic. His parents, Nancy and Gabriel, led him through an exhausting and frustrating battery of doctors, specialized clinics, and medical tests, but his affliction remained a mystery. When hospitalized in August 2000, one of Joaquín’s doctors considered lead poisoning for the first time and ordered x-rays and blood tests. The x-rays revealed lead embedded in Joaquín’s bones and joints. His first blood lead level analysis read 31.2 μg/dL (micrograms of lead/deciliter of blood), over three times the World Health Organization and U.S. Centers for Disease Control and Prevention (CDC) medical intervention “action threshold” at that time. No one knew for certain the cause of Joaquín’s lead poisoning, though the family and Public Health Ministry authorities suspected the many factories or clandestine workshops near their La Teja home.
Joaquín’s entire family tested positive for lead poisoning. Even the dog demonstrated lethargy and erratic behavior. Word began to spread, and other families in the neighborhood recognized a toxic slew of related symptoms among their own children: bone, joint, head, and stomach pains; tremors and convulsions; loss of appetite; stunted growth; attention deficits and learning disabilities; hearing loss; lethargy; irritability and aggression. Many parents sought in vain medical treatment and diagnoses for their children. Others attributed some of the seemingly milder symptoms to simple character traits or a “passing phase” or misdiagnosed the more serious ones. Parents later recalled the learning problems and constant disciplinary issues their hyperaggressive kids would face at school and described other kids as apagados, simply “tuned out.”

Similar testimonies circulated throughout the barrio. Shortly after moving to La Teja, a mother and her twelve-year-old boy found their tendons stiffening, their toes curling up involuntarily, frequent body tremors, and convulsions in their arms and legs. The boy, formerly an avid tae kwon do practitioner, grew weak to the point where he couldn’t even peel a fruit: “I noticed he was distant,” his mother recounted, “and he started to fall down a lot . . . and he told me he couldn’t remember a thing they were teaching him in school” (Amorín 2001, 33). Nicolás, an eight-year-old from another part of La Teja, suffered from terrible head- and stomachaches, vomiting, and joint pain. A pediatrician, in tune to growing public concern, suggested a blood lead analysis, but his mother, a maid with poor medical coverage, could not afford the test. Nicolás’s grandmother declared, “we, because we’re poor, [they treat us like] we just have to die” (Morales 2001, 46).

Stories such as these exemplify the alarming and sudden afflictions that struck the neighborhood’s children and the difficulty families faced not only in getting proper diagnoses but in affording medical care. Lead poisoning was discovered against the backdrop of growing poverty and a looming economic crisis, with the working class and poor experiencing the real and perceived devaluation of their lives and bodies. While some residents maintained faith in medical professionals and Public Health authorities, many others felt abandoned, particularly as officials seemed to display more concern with avoiding a public panic or denied the scope and severity of the problem altogether.

Families were also troubled that they could not determine the sources of contamination. In the early days, most residents and authorities focused on a single potential cause. Suspicions ranged from clandestine smelting and
battery-recycling plants, to the noxious black smoke emitted from the BAO soap and detergent factory in the heart of La Teja, to the iconic state-owned ANCAP oil refinery along Montevideo Bay in La Teja’s southern edge, to the leather tanneries and wool dyers upstream from La Teja’s crisscrossing rivers and canals, to the ubiquitous leaded gasoline combustion in this densely populated area, or to the leaded water pipes and connections found in its many old homes. Only later did the full scope of the contamination become clear. Many of those identified sources played a role in contamination, but the causes and pathways were multiple and cumulative. Lead contamination emanated from industrial pollution, urban vehicular emissions of tetraethyl leaded gasoline, an increasingly elaborate informal economy, consumer products, urban infrastructure, and landfill laced with heavy metals and toxics. Rather than a sudden and acute burst of exposure, lead contamination had been accumulating slowly and surreptitiously through the multiple pathways of air, soil, and water. La Teja would become only the tip of the iceberg of a geographically dispersed and devastating urban epidemic.

Joaquin’s illness signaled the beginning of a long and dramatic story, one with a mostly occluded history, establishing Uruguay as another recognized site in lead poisoning’s 2,500-year global trail of silent suffering (Hernberg 2000). Originating through the lonely and desperate efforts of a few concerned parents and seemingly emerging out of nowhere, awareness of lead poisoning quickly captured the popular imagination. Neighbors of La Teja first organized collectively through popular assemblies. In early 2001, the assemblies coalesced into an environmental justice–style movement dubbed the Live without Lead Commission (Comisión Vivir sin Plomo, or CVSP), with lifelong La Teja resident Carlos Pilo as its informal leader. The same year, the state established the Inter-Institutional Commission on lead under the orbit of the Public Health Ministry to direct interventions and set regulatory norms and policies. In addition to commissioning blood and environmental lead testing, soil remediation, and housing relocations, one of the Inter-Institutional Commission’s most notable actions was to open the nation’s first health clinic for pregnant women and children exposed to environmental toxics (known widely as the Lead Clinic). By 2003 the CVSP turned from ad hoc activism responding to unfolding events and became a loosely affiliated activist group engaged in public outreach and social movement building. Its organizing power largely dissipated by 2006, however, coinciding with the rise to national power of the center-left Frente Amplio coalition. Since then, the CVSP turned back to ad hoc actions as new developments arose, while the
Lead Clinic continued to treat hundreds of children. The lead issue would fade in and out of the media’s fickle spotlight.

Nevertheless, Joaquin was the index case of what would become Uruguay’s first mass contamination event, affecting upward of tens of thousands of children in neighborhoods across Montevideo and cities of the interior. It was the first environmental problem to reach mass popular awareness, gain extensive media coverage, and mobilize all three branches of state power. Carrying along a deep sense of urgency, the discovery and unfolding of lead contamination raised broad-ranging questions about the nature of urban environmental risk, the fraught and changing relationship between citizens and the state, and the transformative social, economic, and political landscape of a country in crisis.

My research follows anthropological approaches to environmental and industrial disasters in analyzing how public concern about lead poisoning constituted a “totalizing phenomenon[on] . . . subsuming culture, society, and environment together” (Oliver-Smith and Hoffman 2002, 6). I argue that lead poisoning took on the status of a publicly conscious, media-propelled event by linking up with larger stories affecting Uruguay and in this sense acted as a “prism” and “social surrogate” for broader social and political concerns (Fortun 2001, 78, 195; see also Button 2010). I approach disasters as dynamic and processual phenomena that reinforce place attachments while revealing the inner workings of society. Lead contamination, like other forms of toxic exposure, is deeply expressive of and constituted by material processes and effects, but it is equally pregnant with symbolism and meaning. It is to the “deeper social grammar” revealed through the “material and social worlds” (Oliver-Smith and Hoffman 2002, 6, 24) of lead contamination that Life without Lead is dedicated.

SATURN’S NIGHTMARE

Once the cause of the quintessential “disease of antiquity,” lead became the twentieth century’s “mother of all industrial poisons” (Markowitz and Rosner 2002, 137) and has now been reinvented and transformed yet again through globalization. Humans have mined and used lead, a versatile heavy metal, for over six thousand years (Hernberg 2000, 244). Through lead-silver mining, lead poisoning became “one of the earliest occupational diseases contracted” by humanity (Nriagu 1983, 309). Hippocrates described lead colic in 370 B.C., and by the first century A.D., Dioscorides recognized a con-
connection between lead exposure and toxicity (Hernberg 2000, 244). Leaden pipes for transporting water were used in ancient Ur, Mesopotamia, and Persia, and they were the “mainstay of the Roman water-distribution system” through its vast network of aqueducts (Nriagu 1983, 240). Roman architect Vitruvius, writing two thousand years ago, advocated for the use of clay rather than lead pipes out of concern for the effects of leaching white lead on human health (Blanc 2009, xviii). In addition to piping, the Romans used large quantities of lead in pottery, writing tablets, and weights, and they used lead as a sweetener to neutralize the acidity of wine tannins (Nriagu 1983, 399), producing a yearly average of sixty thousand tons of lead for over four hundred years (Hernberg 2000, 244). Lead poisoning reached pandemic proportions in ancient Rome, particularly affecting the patrician class, and resulted in widespread stillbirths, miscarriages, sterility, and infant mortality, leading some historians to hypothesize a link between lead poisoning and the fall of Rome (Gilfillan 1965; Nriagu 1983, 402).

_Saturnismo_, the old Spanish term for lead poisoning, is derived from Saturn, the Father of the Gods, who was associated with lead, the first of the “seven metals of antiquity” (Nriagu 1983, 35). In pre-Columbian America, lead had a name in Quechua and Náhuatl, and the chronicler Sahagún referred to it as the “excrement of the moon” (Nriagu 1983, 183). Lead was used in mortuary practices across the ancient world and is linked to the history and origins of writing (Warren 2000, 19). For over 2,500 years, lead was used in body and face painting in places such as Greece, West Africa, and China, and it is still used in East Asian cosmetics and medications, for ceramic glazes in Mexican pottery (Pérez 2007; Warren 2000, 21), and in South Asian herbal remedies (Frith et al. 2005). A wide range of consumer and household products have utilized lead for centuries, including interior plasters and paints, soaps, glass and crystal, tooth fillings, medications, munitions, and fishing weights (Warren 2000, 21–23). Art historians have linked lead exposure to the “genius, madness and art” of great painters such as Goya and Van Gogh, who ate the sweet leaded paint straight off the brush (Warren 2000, 23). Among the first public health–related laws of the American colonies was the prohibition in 1723 of the use of lead in the distillation of molasses for rum (Bellinger and Matthews 1998). In the nascent United States, Benjamin Franklin referred to the “mischievous Effect” of lead in a letter to a friend in 1786 (Warren 2000, 8).

Environmental lead levels increased exponentially through industrialization. Studies have correlated peaks in environmental lead levels and the rise
of medieval metallurgy, the industrial revolution, the postwar period of industrial production, and increased tetraethyl leaded gasoline use (Patterson 1965; Renberg, Bindler, and Brännvall 2001). A measurement of the bones of preindustrial humans revealed a “natural background” level of lead in human blood of 0.016 μg/dL (Flegal and Smith 1992, 129). The current U.S. level of concern of 5 μg/dL, therefore, would represent 1,250 times the “natural” lead level in humans.

What does it mean to live with lead? At low doses of exposure, lead interferes with various biochemical processes and impairs psychological and neurobehavioral functioning. At high levels, lead damages almost all organs and organ systems. Lead exposure in adults has been linked to renal dysfunction, hypertension, dementia and other psychiatric disorders, cardiovascular disease, reproductive disorders, and possibly cancer (Gulson et al. 2004; NIOSH-CDC 2001; Rhodes et al. 2003). Extreme levels of exposure may result in coma and death.

Children and adults differ in terms of exposure pathways, how the body metabolizes lead, and the ways toxicity is expressed. A child exhibits more hand-to-mouth activity than an adult, and children’s gastrointestinal absorption rates are up to five times that of adults (NIOSH-CDC 2001; UNICEF-UNEP 1997). At the fetal and newborn stages, the child is already at a disadvantage through the transfer of the mother’s blood lead through the placenta and by means of a burst of lead through pregnancy and birth-related bone mobilization. Children born with elevated lead levels commonly have lower birth weights, and their growth and stature are inhibited.

Clinical intoxication in children occurs at around 60 μg/dL, at which point manifested symptoms may include abdominal pain, colic, arthralgia, headaches, clumsiness and staggering, stupor, alterations of consciousness, convulsions, and early encephalopathy (Needleman 2004, 212). Severe cognitive, attention, and behavioral impairments are common at this stage, and anemia may develop. Studies have shown behavioral and attention deficits among lead-exposed children at subclinical or asymptomatic levels, as well as difficulties in language processing, auditory capability, fine motor skills, neuropsychological and cognitive functioning, and nerve conduction (Canfield, Gendle, and Cory-Slechta 2004; Needleman 2004). Subclinical lead exposure is also associated with various forms of antisocial behavior, including depression disorders, aggression, violent crime, and delinquency (Bellinger 2004; Bouchard et al. 2009; Dietrich et al. 2001; Montague 2004; Needleman et al. 1979; Needleman 1998; Nevin 2000). In the past fifteen
years, there has been a sea change in scientific understandings of the negative impacts of low-dose lead exposure (Canfield et al. 2003), suggesting that “there may be no threshold for the adverse consequences of lead exposure, and that lead-associated impairments may be both persistent and irreversible” (Koller et al. 2004).\(^4\) In response to these new developments, in 2012 the U.S. CDC lowered its official “level of concern” to 5 μg/dL.

Individual harm from lead exposure is compounded at the population level. In the diminishing of IQ, for instance, a loss of a few IQ points may be detrimental to an individual child, depending on his or her rearing, environment, or individual biopsychological responses. The loss of a few IQ points on a society-wide scale, however, has potentially devastating effects. As Rogan and Ware (2003, 1516) put it: “Relatively small changes in the mean IQ of a large number of children will dramatically increase the proportion of children below any fixed level of concern, such as an IQ of 80, and decrease the proportion above any ‘gifted’ level, such as 120.”

By consequence, the intellectual bell curve at chronic low-level lead exposure is collectively shifted to the left, with more resources needed for remedial education and other services. If we also take into account the collective costs of the increase in antisocial and delinquent behavior, the benefits of primary prevention and a widespread lead phaseout become paramount.

Recognition of the negative effects of environmental and pediatric exposure began only during the past century, though medical knowledge of occupational exposure has a longer history. In each case, the tangled web of science and politics worked to progressively revise officially recognized levels of safety and hazard in different national contexts and internationally through the World Health Organization (Markowitz and Rosner 2002, 2013). Despite its long global history, lead poisoning has alternated between recognition and silencing, made visible or invisible depending on a complex set of factors largely unrelated to the status of medical and scientific knowledge at any given time. Bellinger and Matthews (1998, 310) note the “curious pattern” of the past two thousand years, “whereby the toxicity of lead was seemingly discovered, forgotten, then rediscovered in a different context or with respect to a different risk group.” The factors involved in these recurrent “discoveries” include the relative power of economic actors and interests, including their influence over public health decision-making or the funding of scientific research; cost/benefit calculations in relation to an identified risk group; broader sociopolitical contexts that are more or less sensitive to issues of individual and collective suffering; prevailing medical theories of disease
etiology; social theories of the relationship between bodies, culture, and poverty and/or race; and the comparative strength of social movements or scientific advocacy groups on behalf of lead’s victims (Bellinger and Matthews 1998; Fassin and Naudé 2004; Markowitz and Rosner 2002, 2013; McGee 1999; Moore 2003; Richardson 2005; Sullivan 2013; Warren 2000). As I discuss throughout the book, all of these factors played a role in defining the scope and nature of the epidemic and ultimately in breaking the silence surrounding lead poisoning in Uruguay.

By the late twentieth century, roughly one million tons of lead were “dispersed into the biosphere” each year (Bellinger and Matthews 1998, 308). Lead consumption in the global South had almost tripled, while increasing only slightly and being phased out in many industries, products, and infrastructure in countries of the global North (Tong, von Schirnding, and Prapamontol 2000, 1069). For these reasons, researchers often treat lead contamination as a “legacy pollutant” in the global North (Schell and Denham 2003), found in peeling and flaking old house paints, in urban sediment layers from decades of tetraethyl leaded gasoline use, or in the leaded water pipes and connections of decaying deindustrialized cities like Flint, Michigan. In the global South, meanwhile, lead exposure is most often associated with either traditional folk practices like the use of lead ceramic glazes or with cottage industries of the informal economy such as battery, metals, or e-waste recycling (Hernández-Avila et al. 1999).

While true to an extent, treating processes of lead contamination in the global North and South as responding to fundamentally different social and political-economic dynamics obscures the far-reaching interconnections between North and South and between formal and informal that characterize the globalized economic system today (Nordstrom 2007; Tsing 2005). As transnational corporations outsource production and pressure suppliers to provide ever-cheaper labor and resources, lead mining and recycling operations have proliferated across the world, with devastating and sometimes deadly consequences. To offer one well-known example, in the severely polluted town of Guiyu in southern China’s Guangdong Province, the world’s preeminent electronic waste recycling center, recycled lead was used in the paints of millions of toys shipped around the world and was later subject to mass recalls in the United States (Blanc 2009, xiii; Huo et al. 2007; Lipton and Barbosa 2007). Cases such as these underline the progressive transfer of toxic industries to the global South to satisfy the consumer needs of the middle and upper classes of the global North and South alike (Little and Lucier
2017), leaving a toxic trail of contamination that laces the far-flung corners of the global commodity system.

Ethnographic research is well positioned to grasp these global articulations. Understanding lead poisoning’s broader effects among individuals, communities, and societies provides an important complement to conventional biomedical and environmental studies. And compared to the voluminous medical, toxicological, and epidemiological literatures on lead poisoning, perhaps the world’s most studied environmental pollutant (Bellinger 2004), the disease has received comparatively little attention from the social sciences.5

Life without Lead addresses the broad-ranging social, political, and environmental dimensions and consequences of a multimodal and multisited lead-poisoning epidemic in the global South. My research situates the Uruguayan lead case in relation to major regional and global processes involving globalization, neoliberal reform, the restructuring of the state, and the resurgence of the political Left in Latin America. It is grounded through an ethnographic analysis of grassroots social-movement formation and in relation to transformational experiences related to class, space, and place in barrios like La Teja. The book examines the social and material consequences of lead contamination through the productive entanglements of large-scale transnational capital and public enterprises, small-scale domestic formal industry, and informal or “backyard” cottage industries. It ties together the material effects and symbolic dimensions involved in the “slow violence” (Nixon 2011) of environmental health exposures and “chronicity” (Manderson and Smith-Morris 2010) and individual and “social suffering” (Kleinman, Das, and Lock 1997). The book also follows the local and transnational circulation of environmental ideologies and paradigms, and of contested scientific expertise. Throughout, it traces the dynamics of power and agency within and across the social and political spectra of victims, activists, industrialists, state bureaucrats, health providers, and scientists. In short, Life without Lead traverses the realms of material reality and experience, of disputed claims to “truth,” and of the symbolic and power-laden terrain of collective identities, meaning, and action.

A POLITICAL ECOLOGY OF LEAD

My work draws broadly from a political ecological perspective on urban environmental health and justice. Political ecology combines neo-Marxist and
poststructuralist approaches to the human-nature nexus, bringing political economy to bear on environmental processes, with careful attention to issues of power and inequality, as well as the discursive constructions of nature (cf. Escobar 1996, 2008; Harvey 1996; Heynen et al. 2007; McCarthy and Prudham 2004). In this way it is a “fluid and ambivalent space that lies among political economy, culture theory, history, and biology” (Biersack 2006, 5). The structural changes and effects associated with neoliberal reform and the subsequent crisis of the neoliberal model make up the principal historical and political economic context of this study.

Neoliberalism constitutes a set of government policies and principles that aim to privatize and deregulate the economy, encourage foreign investment, and intensify export production (Harvey 2005). Lead contamination as a material and embodied threat was closely tied to the crisis of the neoliberal order that had dominated Uruguayan political economy in the latter decades of the twentieth century. The crisis reflected a failure of the economic system itself, evidenced graphically by soaring poverty rates, social exclusion, and unemployment, as well as macroeconomic instability (Olesker 2001). As in other Latin American contexts, the state, acting for years as neoliberalism’s booster, faced a profound “crisis of representation and accountability” (Sawyer 2004, 13; see also Edelman 1999; Goldstein 2004; Gregory 2007; Petras 1999; Wolford 2010). In many ways, however, Uruguay’s economy was the least neoliberal and an exception to other Latin American regimes’ wholehearted embrace of the model during the 1990s (cf. Babb 2001; Gill 2000; Paley 2001). While the Uruguayan state followed neoliberal precepts during the 1980s and 1990s by promoting privatization, labor “flexibilization,” and industry deregulation (Finch 2005; Moreira 2004), full-scale neoliberal reform was resisted by an entrenched state-centered political culture and was repeatedly defeated at the polls by a series of popular referenda and plebiscites in the 1990s and 2000s that reversed privatization measures and protected public enterprises (Moreira 2004, 107–13; Santos et al. 2006; Taks 2008). The crisis of legitimacy of the established order gave rise in 2005 to the center-left Frente Amplio coalition, part of Latin America’s so-called Pink Tide of anti-neoliberal leftist governance. Uruguayan neoliberalism then, similar to what Shever (2012) argues in the case of Argentina, has taken on a hybrid character and should be understood through its local inflections and dynamics rather than as a carbon copy of an idealist model.

The lead issue in Uruguay unfolded within the political and historical juncture of the deep long-term social effects of neoliberal economic restruc-
turing and reform, the economic and political crisis of the neoliberal model, and the rise of the “post-neoliberal” Left to national power. Starting from this political economic context and the political ecological approach outlined above, *Life without Lead* engages with the crosscutting themes of environmental justice, knowledge and power, and governance and resistance.

*Environmental Justice*

The toxic environments that create environmental injustices carry both “disabling” and “enabling” tendencies (Edelstein 2004). They are disabling for individuals and communities through processes of environmental suffering and the stigmatization of victims, and because the causes of environmental risk and harm often remain uncertain (Auyero and Swistun 2009; Checker 2007; Goldstein 2017; Nixon 2011). Toxic exposure can also become “enabling,” however, when it fosters a sense of community and collective solidarity that turns into political action (Little 2014; Mah 2012). Environmental justice movements draw media attention and gain political traction if they emerge from meaningful and “morally charged” realms of symbolic violence—for instance, when children, mothers, neighborhoods, or socially vulnerable groups are threatened (Harvey 1996, 386). These movements, Schlosberg (2003) argues, advocate for a robust understanding of justice oriented around equity, recognition, and participation. Justice is conceived of as the fair and equitable distribution of social goods; as the recognition of collective identity, group needs, and difference; and as procedural equity that promotes “more authentic public participation” (Schlosberg 2003, 79–84).

In Uruguay, the antilied movement pushed an already pervasive social and political critique of neoliberalism in new directions by redefining popular understandings of urban environmental health and risk and by linking the socioeconomic crises of deindustrialization, poverty, and social exclusion to the environmental degradation and embodied suffering borne of toxic exposure. The movement was strongly rooted in La Teja’s combative histories of militancy and solidarity, building from and contributing to its formidable working class and place identity. As Carruthers notes in the case of Latin America, environmental justice struggles there tend to fuse environmental issues with broader community struggles, thereby linking up with rich and dense networks of popular movements often working “beneath the surface” (2008a, 2, 8). Studies of urban-based environmental justice movements in Latin America and the global South remain rare, however (Auyero and
Swistun 2009; Carruthers 2008b; Sabatini 1998). Most environmental justice research continues to focus on the dynamics of grassroots responses to environmental racism in the urban global North, with some attention to rural ethnic or indigenous responses to hazardous-waste siting or industrial dumping (Allen 2003; Bryant 1995; Bullard 1994; Checker 2005; Cole and Foster 2001; Di Chiro 1998; Kuletz 1998). Studies of environmental justice or “environmentalism of the poor” in the global South, meanwhile, are mostly centered on rural and ethnic-related movements linked to “toxic imperialism,” land and resource struggles, and transnational corporate industrial, agribusiness, or resource extraction operations (Bebbington et al. 2008; Doane 2012; Escobar 2008; Faber 1993; Grandia 2012; Johnston 1994, 1997; Martinez-Alier 1998; Perrault 2008; Sawyer 2004; Wolford 2010). In tracing the coming together of Uruguay’s first significant environmental justice movement, *Life without Lead* fills an important gap by examining how environmental justice struggles emerge in response to broad-ranging and everyday forms of pollution and contamination in the urban global South.

As environmental justice scholars have argued, culture and place become symbolic anchors of environmental justice movements: “To the extent that we construct our identities in place, whenever the bio-physical conditions of a place are threatened, undermined, or radically transformed, we also see those changes as attacks on our identity and personal integrity” (Devon Peña, quoted in Schlosberg 2003, 91). Places are powerful sites of memory and identity, as they encompass the sensorial dimensions of sight, sound, smell, touch, and taste, making place attachments simultaneously material, social, and imaginative in character (Hayden 1995, 18, 43). Place, then, is central to environmental justice movements that define the environment fundamentally as places “where we live, work and play” (Novotny 2000). As critical theorists point out, however, places are neither homogeneous nor entirely self-referential. Places are created through social relations, with differing and contested identities and meanings for the subjects that identity with them, and are also formed in articulation with wider societal and global structuring forces (Massey 1994; Zukin 1991).

La Teja presents a fascinating case study of the social dynamics of place construction and its articulation with wider structuring forces that enhance or threaten place attachment and identity. La Teja’s foundational identity is rooted in early twentieth-century waves of European immigration, established as a vibrant industrial working-class neighborhood with strong traditions of militancy and solidarity. While *tejano* identity was always vulnerable
to the boom-and-bust cycles of industrial production, it was systematically assaulted during Uruguay’s military dictatorship (1973–85), which unleashed state terror through the repression, torture, and exile of thousands of political militants, labor leaders, students, artists, and working-class youth. The military regime heavily targeted radical strongholds like La Teja. Nevertheless, the neighborhood has always remained a fount of resistance and cultural and political creativity. As I discuss in chapters 1–4, La Teja’s environmental justice movement reenacted and performed social memory of the barrio’s collective struggles, defeats, and promises, reflecting and contributing to changing popular understandings of class, place, nation, and state. La Teja’s activists used the material and symbolic violence of lead contamination as a mechanism of reaffirming class and place identity. They denounced the neoliberal order while evoking and reclaiming the foundational centrality of the working class and the welfarist social state. Both were rooted in a “moral act of imagination” of place constructed through the interweaving of collective memory, urban landscape, and identity (Harvey 1996, 305; Hayden 1995).6

Knowledge and Power

Knowledge and expertise are among the most pivotal and contested axes of environmental disputes. Knowledge can be academic, accredited, and “universal,” or it can be experiential and embodied, “situated within social circumstance” (Allen 2003, 19). Activists in environmental disputes rely heavily on scientific expertise to add persuasiveness to their accounts of environmental problems. Rather than being characterized by the so-called “lay/expert divide,” we should instead recognize environmental disputes as fundamentally the opposition between “two groups of experts” (Tesh 2000, 93). On all sides of a given controversy, in other words, advocates hide “behind the protective veil of science” (Bocking 2004, 23). Social movements rely on forms of “counterexpertise” derived from both scientifically based counterclaims to official science and policy and from experientially based understandings of social and environmental reality. Experiential understandings of environmental disease often counter epidemiological and environmental risk assessment’s high standards of proof and statistical significance, with victims-turned-activists pleading, “But I know it’s true!” in the face of scientific and bureaucratic denial (Checker 2007; Dietrich 2013; Little 2014).

As with other environmental diseases and as I detail in chapters 1, 4, and 6, science in Uruguay became central to deeply contested political claims and
social theories regarding the origins and pathways of exposure, the delimitation and distribution of risk, and the character of the suffering poor (Briggs 2004; Petryna 2002; Rajan 2002; Stephens 2002). I approach science and scientific production as a socially constituted and politically nested enterprise, with scientists understood as social and moral actors as well as interlocutors within broader social, political, and knowledge fields (Bocking 2004; Callon, Lascournes, and Barthe 2009; Collins and Pinch 2012; Helmreich 2009; Jasanoff 1990, 2007; Latour 1987; Marks 2009; Tesh 2000; Wynne 1996).

Lead poisoning, one of the most researched and “settled” domains of medical science, operated in Uruguay across three overlapping registers: as an invisible and silenced epidemic; as an objective and universal “matter of fact”; and as a socially contested and unsettled “matter of concern” (Latour 2004, 23). That is, medical authorities and practitioners as well as the broader public had long ignored lead poisoning as a biomedical reality, and many continued to dismiss the disease following the La Teja discoveries. When the lead threat was acknowledged, the state-sanctioned science of lead contamination often resembled what Bruno Latour (1987, 1991, 2004) refers to as one of science’s impenetrable “black boxes,” characterized by established and uncontested truth claims divorced and “purified” of social context and political influence and thereby presented as objective “matters of fact.” The problem, as I explain in this book, is that these truth claims often rested on outdated scientific research and protocols that were challengeable through a simple Internet search.

Activists, maverick scientists, and others thereby contested established science and public-health policy by calling into question the supposedly universal and “asocial” character of state-sanctioned scientific claims, or what Haraway (1988) calls science’s “view from nowhere.” They drew attention to the political and social influences determining official claims of risk and harm and thus reframed official science as “localized” and “situated” knowledge (Haraway 1988), turning what had operated as a “matter of fact” into what Latour refers to as a “matter of concern.” Activists and others thus “problematized” (Rabinow 2003, 49) lead as a power-laden object of thought, moral reflection, scientific knowledge, and political analysis. I follow science and technology studies by tracing the scientific networks and citizen-science alliances at work in the entangled matrix and “conflict zones” (Marks 2009, 53) of science, politics, and society. This book also draws inspiration from postcolonial science studies in pushing science and technology studies into
less explored domains, by focusing on the sociopolitical processes by which “settled” science became “unsettled,” and how it was translated, localized, and reworked by different social actors operating at multiple registers and at the intersection between centers and margins of global expertise and power (W. Anderson 2002; W. Anderson and Adams 2008; Harding 2011; Lahsen 2009; McCook 2013).

**Governance and Resistance**

The Uruguayan lead discoveries brought into being a novel array of social actors and “environmental subjects” (Agrawal 2005; Escobar 2008). These included environmental justice activists, specialized pediatricians and toxicologists, environmental lawyers and scientists, and the lead-poisoned poor. In chapters 1, 4, 5, and 6, I examine the instrumental ways lead poisoning demanded the creation or putting into practice of previously inchoate social, medical, and scientific protocols, legislation, and policy. Some of these new institutional and intellectual spaces were made possible by globalization and what I refer to as the “greening” of Uruguayan society since the 1990s, or the progressive extension of an environmental frame across social, cultural, academic, and political realms. Lead, in other words, called forth novel ways of *thinking*, including new paradigms of expertise, and new ways to strategize political action and make claims to fundamental rights and citizenship. A central focus of *Life without Lead* examines how the destructive power of this disease of antiquity also took on “productive” (Comaroff 2007, 203) and generative qualities in twenty-first-century Uruguay.

Accompanying the creation of new environmental subjects was the enactment of new forms of environmental governance and biopower that used nature, both biophysical and human, as a means to extend the domains of state and biomedical surveillance as well as calculative and administrative rationality onto previously silenced, ignored, and marginalized urban landscapes and bodies (Agrawal 2005). I draw here from the Foucauldian-derived concept of “biopower” as a modern form of power that works directly on the body through modern disciplines and technologies in order to administer life and assert sociopolitical control over individuals and groups. The “biopolitical,” in turn, constitutes the social fields and processes by which biopower is enacted upon or contested by groups and populations (Foucault 1978). Following this logic, bodies are more than static and ontologically given vessels or expressions of categorical states of health or illness. They become
central, dynamic, and malleable sites of modern power and governance (Lock 2002; Martin 1995; Mol 2003; Shapiro 2015). In the Uruguayan case, the state’s public health, housing, environmental, and municipal apparatuses intervened directly in the bodies and worlds of lead-poisoned individuals in order to both control a disease riddled with uncertainty and manage the mostly uncounted and potentially “dangerous” (to the dominant social order) slum dwellers of the urban margins. The “bureaucratization” of lead poisoning, or the state-managed definition of the parameters of victimization, risk, and intervention, became an exercise in biopower that threatened to turn the disease “into banality” (Fortun 2001, 192) by reducing its complexity and moral urgency into “cold” facts and statistics for broader state designs.

These state interventions conditioned the ways people understood the nature and origins of lead poisoning and its patterns of victimization. The epidemic unleashed and channeled social and political debates about culture whereby pollution was used as an analogy of the broader social order (Douglas 1966). Persistent theories of the “culture of poverty” (Lewis 1966) and marginality (Nun 1969) reemerged through reinvented forms of “practical culturalism” (Fassin and Naudé 2004) that causally linked and blamed contamination on the suspected behaviors, values, and qualities of the urban poor. On the other hand, bureaucratic incursions also facilitated the creation of new subjectivities or “biosocialities” (Fischer 2003) acting potentially as a source of citizen empowerment and resistance to biopower and governmentality. The biopolitical dynamics of lead poisoning opened new spaces for rights claims and unsuspecting forms of agency that resembled what anthropologists have referred to alternately as “sanitary citizenship” in the case of a Venezuelan cholera epidemic (Briggs 2004; Briggs and Mantini-Briggs 2003), “biological citizenship” for Chernobyl victims (Petryna 2002), or “health citizenship” for HIV/AIDS sufferers in South Africa (Comaroff 2007, 204). In other words, lead poisoning became a vehicle for largely disempowered citizens to make demands of accountability and presence on a state generally characterized by neoliberal retrenchment and absence. Activists navigated the symbolically and morally charged domains of motherhood, childhood, work, poverty, and indignant suffering to assert a “counterbiopolitics” centered on “life itself” (Agamben 1998; Comaroff 2007, 211; Giroux 2008; Pearson 2013; Petryna 2002). In contesting the biopolitical mechanisms of the state, activists pursued expanded citizenship rights to health, housing, labor, a clean environment, and ultimately, as I was often told, a life with dignity.