Foreword

WE LIVE ON a used earth, a kind of jalopy planet. It is not just that we have depleted a lot of resources and continue to pump bad gas into the sky. This we all know. With *Sites Unseen*, Scott Frickel and James Elliott take us conceptually and topographically into new territories. The very land beneath our urban feet contains molecular bric-a-brac left behind by people, corporations, and governments. It is hard to see. They've covered it over with houses, malls, used car lots, and parks and schools. They've paved the industrial past and put up, if not a paradise, at least something that now passes as benign. This book, using archival data and innovative analysis, brings new visibility to what is left behind.

It's about time. Buildings and industries followed on from one another as technologies and chemical involvements shifted. People also came and went, but some of the stuff did not. It now seeps, migrates, and fuses into compounds, neither seen nor named. The garbage and the cast-offs, the residues of old fortune-building, human sweat, and property development remain largely interred, only occasionally resurfacing as civic trouble. To a degree and in ways we do not know, the stuff continues on in our lives. As a matter of public health, environmental restoration, and as smarter city-making, we need to know more about this.

For the four U.S. cities chosen for their special focus, Frickel and Elliott engage in a painstaking set of inventories and exhumations. They build new data sets, parcel by parcel, of people and past industrial use. They carry out on-site inspections. This effort cumulates as a new urban cartography and a new urban imaginary. They bring the people in, telling us who the populations were and providing a way to figure out specific types of exposure. We see intersections, layer upon layer, of industry and persons. This is a dynamic conception of city earth, city industries, and city peoples.

What we have, at long last, is making good on the prospect of a genuine urban *human ecology*, the term used for the variant of the Chicago School of sociology that started up in the 1920s. Becoming the most

important single paradigm for urban studies in U.S. social science, it was ecological, but only in a limited sense. It focused on interactions of social groups over time, quasi "species," in its metaphoric invocation of biological science. These scholars had people and space, but the earth itself was analytically and empirically omitted (as were nonhuman life forms). This massive oversight led generations of analysts astray. The chance for a real environmental sociology was thus "left behind in the dust," as the sociologist Robert Michelson presciently put it two generations ago.[1] Similarly thrown off the trail were legions of planners, policy analysts, officials, and nongovernmental organization leaders who reflected the humans-only thinking. In this work, Frickel and Elliott conspicuously retain the master idea of succession. But for them the social-physical nexus is fundamental—both for conducting their research and to inform an urgent call for policy remediation.

The authors discover that the great majority of suspicious sites are largely ignored in both contemporary controversies and governmental policy. Appropriately, they refer to them as *relic* sites. The term is a good one because it implies not only a history that goes back in time, but also the archaeological nature of what is needed for disinterment. Perhaps the most masterful urban history we have, William Cronon's *Nature's Metropolis*, took as its mandate showing how the city of Chicago owed its greatness to agricultural mechanization and bringing in hinterland resources for mass production.[2] We also know from other histories, like that of Grey Brechin's *Imperial San Francisco*, that there was mayhem along the way—social as well as ecological.[3]

With archaeological spirit, we have to get back to that mayhem, reconstructing exposures of particular people to particular chemicals in specific places. Rather than waiting for cancer clusters, sick children, or species die-off, Frickel and Elliott would have us see the inherited urban as a history of despoliation. The burden of proof shifts to showing that a given place *does not* have contaminants. To develop such knowledge, we need to map and know, in chemical and biological terms, the particular location, qualities, and types of deposits and processes that have been present. Rather than ad hoc and idiosyncratic investigation, past uses would be charted, year on year—for, among other things, potential chemical interaction effects. Remediation would then be based on systematic knowledge rather than hit or miss inference.

In the course of outlining such a program, Frickel and Elliott show us some substantive findings of what, at least for their four cities, has in fact gone down. Some areas are subjected to repeated toxic pounding, generation after generation, even as the content of the degradation shifts from one type of manufacture to the next, one kind of pollutant to the other. Although the mélange for each place varies, it is no surprise that

poorer people and people of color are, in general, more likely to have lived and to still live in noxious environments or in locations—we can think of Flint—where bad pipes bring poison right to their taps.

Some ironies are conspicuous. Contemporary gentrification is moving white people and affluent people into the kinds of deleterious environments that used to be reserved for the poor and disadvantaged. Urban change has thus turned some of the pollution tables, water and otherwise, around—or at least pitched them a bit off the usual angle. Portland, one of Frickel and Elliott's case cities, is an old industrial town that has become homeland for progressive people with high environmental awareness. Portland enacted an urban growth boundary line in 1979, conforming to Oregon state law, aimed at preserving farms and open space. It has been in force, albeit with expanding boundaries, since then. Its provisions guide business and population expansion into territories within an existing urban footprint. Portland gives us a strong version of "back to the city," here responding not only to shifts in taste for urban living but also to governmental action. It has encouraged industrial growth and residential development that might otherwise have spread to the suburbs to occur within existing urban boundaries. Along with enjoying the Jane Jacobs vibe of living close to one another, the better-off are locating into zones of greater proximity to toxins. The authors have evidence of this. Statistically, it means that the environmental justice correlations become a bit less strong. Socially, it means that some of the excitement of contemporary urban living has a tinge of fool's paradise.

Just as nineteenth-century factories can now be considered picturesque rather than dystopian blight, some kinds of detritus generate public calls for government action and others, more deleterious in fact, are ignored. While not brought up by Frickel and Elliott, gas stations are famously bad (bad in fact as well as in reputation). Any city parcel known to have once had a gas station likely becomes suspect. Other sites become marked as deleterious through federal Superfund designation. Sometimes awareness happens when a large enterprise, such as a factory, is left abandoned—an eyesore as well as a threatening source of contaminants. But in the majority of cases, it is likely that no one knows what went on; these are sites with too little stigma to generate demands for remediation. Typically, the real urban trouble spots, as Frickel and Elliott discover through their digging, go largely unnoticed—administratively, legislatively, or by social movements. As residents die or move away, out go even faint memories of what used to be. The pollution trail goes cold. Loft developers and city boosters are the ones left as story tellers.

Pollution sites are thus, we surmise, socially selected; complex political, economic, and attitudinal machinations go into taking notice and taking action. It is not the intrinsic or documented danger (or value) of

what is at hand that determines the process or outcome. The system is essentially passive, to be woken up by litigation from aggrieved property owners, neighbors, or environmental groups who have selected particular places for organizational priority. A general problem, and here I add in an issue not directly raised in the book, is that disproportionate attention goes to consumption waste as opposed to the *production* waste that is the concern of Frickel and Elliott. Consumption waste is a relatively small source of pollution, in terms of both volume and toxicity. But it has the advantage of having content that is visible, familiar, and directly accessible. Dealing with it is also less politically toxic, less likely to involve confrontation with powerful producers and resource extractors.[4] Hence household recycling has become a pet project of civic virtue, not the production garbage that is more out of reach.

Cities vary in how frequently and effectively their regimes at least try to grapple with a given pollution heritage. New Orleans, another of the Frickel-Elliott case study cities, is troubled because of weak institutional structures as well as the real nastiness of the pollution it collects (petroleum byproducts, chemicals). Physical reality can sometimes intervene, as when post-Katrina floods brought submerged poisons to the surface. For other places and in a more routine way, real-world intrusions also occur, such as when people cannot see through smoke from the factory or when effluents bring nausea or headache. But even then, denial or misrecognition are possible. Whatever the personal or institutional etiology, the evidence suggests only a loose coupling between actual danger (as certified from one source or another, including the authors' compilations) and provision of resources for alleviation. In this way and others, we can glimpse in this book a strong contribution to a sociology of environmental knowledge, another aspect of what Frickel and Elliott are taking on as overall remit for their work.

Beyond the obvious political and policy implications, *Sites Unseen* also advances the social science turn toward artifacts and materiality more generally. Although the authors' use of any theoretical bric-a-brac is spare, this work is very relevant to the enterprise of Actor Network Theory (ANT) and its related subfield of science and technology studies (STS)—both associated with the work of the sociologist and anthropologist Bruno Latour. In the ANT-STS perspective, to put it most radically (and, I believe, accurately), *no thing* is inert. Various critics of Latour have a hard time swallowing this. But here in Frickel and Elliott, the "acting" part is obvious and so is—and here is the surfacing of the policy implication—the consequentiality of ignoring it. The discards, covered up and ignored with ersatz finality, manage to persist—through conjoint human action and inaction. These are, in effect, runaway actants, zombie actants that come back again and again to do us in,

and through our own persistent machinations. Scholars of whatever theoretical stripe—who realize that materiality makes history—might want to pick up the agenda of following the waste.

Frickel and Elliott, characteristically down to earth, deduce and call out policy recommendations—actually a call to arms. Current practice of hodgepodge discovery and unsystematic containment is inefficient, hugely expensive, and subject to environmental injustice. Rather than moving backward from troubles that manage to surface, we need investigations—like the ones the authors conducted—that reconstruct urban industrial histories from the past to the present. Then we can really see where troubles lie. We need investigations of urban soils and their peoples that are comprehensive.

How do we bring that off? Again, Frickel and Elliott are helpful and explicit; they offer a "how to" for others to follow. They provide tactics to go beyond their work, itself accomplished through an "army" of students painstakingly going through massive heaps of annual city directories, with year by year plotting locations and categorizing by industrial sector. The arduous tasks could be, as Frickel and Elliott suggest, distributed to classrooms and activist groups. In that way, data cumulation could go far beyond the impressive base they managed to construct. It would be akin to what used to be called, in a related discourse, a "folk epidemiology." It would be conducted using comparable data categories and made readily available across sites and across activist-investigators.

Besides putting some earth into the sociological imagination, *Sites Unseen* adds sociological muscle for geographical thinking. Indeed, this work showcases what a contemporary geography could be. It is, after all, about the interaction of humans, their organizations, and place (in its many dimensions). It is in the holistic tradition of thinking of settlement as synthesis of politics, culture, and the natural world. Anthropologists well know this conceptual terrain. Historians are essential. Planning scholars can contribute skills for reconstructing the past out of general plans and land-use maps. They can help address, for particular places, appropriate future land uses given what has already occurred. Frickel and Elliott are sociologists (as am I) and so to conclude: the world needs a robust environmental sociology. Environmental sociology needs just such work as this to gain a rightful place as central to the discipline and the academy more generally. By dint of its clarity and richness of content, this book shows the way.

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