

Notes on the Third Ecology

Sanford Kwinter

"Ecological Urbanism" might refer to Cities and Nature, but it also might mean something larger than this. The habitual way we understand the relationship between these two entities was imprinted on us largely by the Anglo-Saxon culture of the Industrial Revolution, when immense upheavals in social, economic, and political life transformed the very landscape around us and our relationship to it irreversibly and in depth. The dyad of City and Country was the imaginary axis within which progress and modernization were conceived, not only then, but perhaps implicitly forever thereafter.

The modern transformations of territory—of which even today's most recent economic and biospheric crises are direct results—are rooted in this archaic and false opposition. To speak of transformations of territory today, especially if we are to take seriously our historical task to begin to "think ecologically," we cannot exclude the "existential" territories, that is, the existential ecologies, that define our ways of inhabiting the worlds we have made. For if there is an ecological crisis at hand, it is one that as much concerns the deterioration and deformation of human experience (and the infinite improvisations that make up its history) as it does that of the physical habitat on which we rely to provide the overabundant wealth that we too often use to hide from ourselves this uncomfortable fact.¹ It is here that some new thinking about cities, or better, about the culture of cities, comes to the fore.

Cities arose as direct products of the (once) new means of concentrating wealth, a development that exploded once wealth was able to be detached or abstracted from its moorings within the natural (or should we say "empirical" so as not unduly to dilute the term "nature") world. Once motive force or power, for example, could be detached from its fixed mooring "at the river" where it is extracted in situ by means of a waterwheel, and transposed, say, to an upper-story manufactory site in the heart of a densely populated urban environment like London—a process made possible by the invention of the detachable heat or expansion engine—there immediately arrived to meet it the administrative and banking innovations that permitted accumulations of both wealth and population that both simply came to forget that this is what

they were: abstractions only, and not true emancipations, from the obdurate, finite facts of nature.

The heat engine's "emancipation" from nature—both temporal-spatially and in terms of the balance sheet of energy, matter, and order—was of course no more than a willful illusion, despite the formally stated principles of the thermodynamic science that gave rise to the heat engine in the first place. This was a lesson that occupants of cities ironically began to relearn in the 1960s with respects to fossil fuel limits, acid rain, famine, and the effects of phosphate, pesticide, and industrial chemistry use on a wide range of causally networked systems. Then, a neo-agrarianism began to flourish, sometimes taking the tenor of neo-Malthusianism. The publication of the Club of Rome's "Limits to Growth" (1972) became the linchpin by which most of us still recall this period. But the once-famous work of Yale Law professor Charles A. Reich, *The Greening of America* (1970), provided the most comprehensive popular synthesis of how the concept of human liberty (and the "good life") came to be conceived within this framework. It is the stunning popularity of this work and not its depth or accuracy that earns its mention here. At any rate, several dozen works, from Norman O. Brown and Alan Watts to Kurt Vonnegut and Herbert Marcuse, could be cited to fill out the claim that a transformed view of the human relationship to nature provided the sinews of a total refashioning of the existential territories of the period, ones with profound roots in the period's political, musical, and literary culture. At the very least—and even a cursory survey of American or French popular cinema of the time would dramatically confirm this—the very concept of "life" during this period was saturated with a sense of open-endedness and an experimentalist ethos at every level. Clearly even the predominant psychedelic culture of the period had at its core the concept of a fluidity and relativism of consciousness, not the static and universalist notion that came to replace it during the ensuing yuppie revolution. Drugs, particularly with their roots in botanical (and ethnobotanical) cultures, were seen as means by which the human nervous system's possibilities could be relearned and reexperienced as a profound return to natur(e)l states. Pathological formations, to wit schizophrenia and other florid psychic "refusals" to conform to models of State obedience, were frequently presented as new forms of "sanity" and instances of an embrace of natural states, or at least of natural resistance (R.D. Laing, Timothy Leary, David Cooper, Felix Guattari, etc.). Nature's abundance and creativity was often presented as a form of invention not greatly different from psychic and social "pathology." While

> The garden in the machine: Mumbai's Sanjay Gandhi National Park is a natural wildlife—and especially panther—habitat situated in the heart of what will soon be the world's largest metropolis. In addition to dozens of resident panthers, tiger spoor were found there in 2003. Mumbai is also home to hundreds of vultures whose feeding behaviors are still relied on to dispose of the deceased bodies of the city's large and prosperous Parsi population.



a great deal of this particular existential formation has over time been shown to have been based in errors, a considerable portion that was profound and fertile and especially liberatory was lodged permanently into history and represents an asset—albeit buried today—to which a future moment might yet return to profitably reclaim. The aim of the foregoing reflection is to demonstrate the centrality of the human/nature dyad in the production of actual reality, of the actual territories in which social and natural processes are experienced and expressed.

Three billion of earth's citizens today live in cities, and virtually all of the exponential growth in population anticipated over the next fifty years will be urban. A significant number of those who do not live in physical urban environments increasing live in psychic ones, however, as even the proliferation of communal mobile telephones in the remotest rural environments connect local artisans not only to global markets but to

Corridors of waste:
In Dharavi disposal gives way
whenever possible to circulation
and transformation.



the rhetorics and representations through which their logics and operations are expressed; the imagery and associated effects of global cinema have also penetrated the remotest societies on earth, making the arrival of "output" communications within a society (phones, internet, or even market-price-adjusted goods) into an immediate completion of a circuit of exchange. Current ameliorative development in cities targets the archaic physical structures and the archaic social life-forms that adhere to them. Two examples among hundreds are the destruction of Beijing's Hutongs and the proposed redevelopment of the Dharavi slum quarter in Mumbai. It is an unexamined and possibly dangerous supposition that the solution to the new demographic and economic pressures is to fully rationalize and modernize our existing urban habitats; indeed the opposite may be the case. Take for example the proposed Dharavi redevelopment (as a model for very rapid capital-intensive development taking place in India, China, Brazil, and other giant economic territories). Among the great singularities of India is the intensity of its local commerce, the vastness and ubiquity of its social markets, which are virtually coextensive with its metropolitan fabrics. Within this fascinating urban tapestry there exist myriad networks of social processing of social goods. One example is the astoundingly exhaustive system of recycling that takes place in Indian cities, in which newsprint, copper wire, rubber, plastics, metals, rags, and even dung gets gathered, sorted, sold, resold, and recovered for reuse. (One resident in a hundred in Delhi is engaged in recycling, and up to 15 percent of all solid waste generated in Indian cities is recovered. Some materials will gain up to 700 percent in value as they move through the recycling chain, even before reprocessing.) Another well-stud-

Woman sorting plastic in resupply
chain



ied but ill-understood network phenomenon, particularly in Mumbai but now virtually anywhere in the world where there is an Indian community, is the system of midday meal delivery known as the Dabba or "tiffin" system. Tens or even hundreds of thousands of meals are accurately gathered up at Mumbai households and delivered to remote locations of work within hours, with a precision and efficiency unmatched in perhaps any reticulated distribution network in the world. (The tiffins are also recovered after use and returned to their household of origin with similar efficiency and accuracy.) The networks of tiffin walas, their agents, brokers, relays, and physical and administrative infrastructures (from the community kitchens in which the meals are prepared to the cart, bicycle, and rail connections that take place repeatedly across the urban web, to the system of color coding that specifies from where the lunches come and to where they are to be delivered) are old and rooted in archaic networks. To separate these networks of distribution and recovery from the more classical ones of food production and distribution, or the markets in which pharmaceuticals, jewelry, textiles, or stone, wood, metal, or electronic goods are manufactured and sold, would be impossible. The Dharavi quarter is but one such site where these activities are part of an ancient ecological and urban web. Over a million

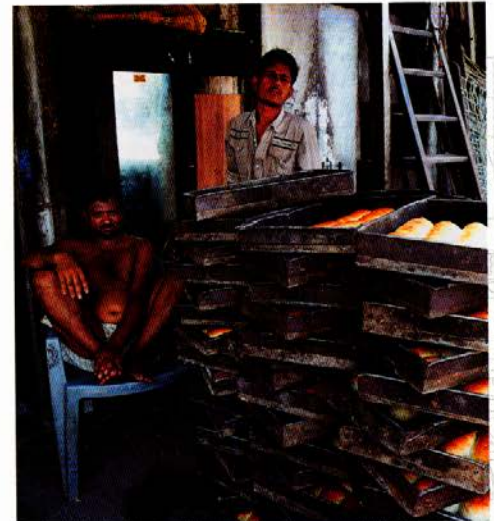
Just-in-time economics: More than 100,000 lunches are delivered (and recovered) daily in Mumbai through a largely informal system of distribution and tracking. It is said that perhaps twenty meals a year are even delivered late, let alone misplaced along their complex multi-segmented routes, displaying a level of efficiency that knows no rivals in the developed industrial world.



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people live in Dharavi's two-thirds of a square mile of territory and operate more than 15,000 one-room factories, often as small as 100 square feet. Though it may be the world's largest slum, it has 100 percent employment. But Dharavi is also a city in itself, and its streets and alleys know no distinction between work and social space or even domestic or residential functions. It is said that no manufactured object in Mumbai does not spend at least one phase of its production chain in Dharavi. Although sanitation, water, and sewerage represent acutely serious problems in Dharavi, it nonetheless represents the veritable lungs, liver, and kidneys of greater Mumbai, as it cleans, reprocesses, removes, and transforms materials—and adds value—that are endemic to the economic and material functioning of greater Mumbai and beyond. Initial projects aimed at relieving the ground congestion by relocating residents to residential towers have clearly disrupted the web of Dharavi's magical "immanence" of social market functioning. The vertical dimension simply cannot bear the density of interactions upon which its multiple economies—and synergies—are based (families and workers typically live in or just above, in lofted granges, the shops and workshops in which they spend their days). Dharavi's contribution to the local economy is currently approaching

Low overhead is itself an engine of abundance.



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\$1 billion annually, and fortunes are made within its confines. The informal nature of what takes place within it, the mind-boggling compression and mutual proximities of skills and knowledge, and the novel ways of conducting business there represent an efficiency for many sectors of the economy that could be achieved in no other way or place (I refer to efficiencies that are not simply based on low wages and lack of social benefits, etc.). Dharavi, although certainly the site of the large-scale crime of social inequity, is also a place of visible and palpable civic pride (indeed most of the fortunes made there, remain there). The social and the economic may well be spatially and modally coextensive, but they are not identical, and the fit between the two is something often referred to in historical literatures of economics, but it has by no means been explained or understood. It presents an extraordinary challenge and exercise to the imagination simply to reflect on the implications and impacts that the destruction of this social-economic habitat will have on all parts of the larger urban ecology.² Although such urban transformations are always done in the name of remediation and modernization and presented as a way to transfer prosperity to ever greater numbers of inhabitants, it is clear that the effects in this case will not only be cultural and political but will have profound ecological impacts, both existentially and in terms of the efficient means—currently at risk of being lost—by which raw materials have traditionally cycled over and over through the system. The issues presented by these examples are not new. What is new, however, is that we have effectuated a major turn in thinking; we now have the conceptual tools, the intellectual models, and increasingly the predilection to understand the role of the palimpsest of archaic and modern, formal and informal, systems of organization to the economies they support as an asset and feature of urban ecologies and hence as a bona fide form of (free) equity that could, if desired, be preserved, extended, or even reproduced as we begin to imagine and plan our future worlds.

Among the basic issues of which we must not lose sight over the next decades is that what is required to give birth to a true ecological “praxis” for our cities and our civilization cannot be found or resolved within the scope of sustainability workshops, environmentalisms, policy reforms, and technological and scientific research and their applications. The ecological question is, by its very definition, much larger and more comprehensive. As it is, the relationship between nature and economic life—for long shunned as a habit of primitive and passéist thinking—is one that is beginning to appear in the foreground again. One popular example of this recu-

Rooftops warehouse recycled goods so they can achieve the scale needed for the next transaction in the redistribution pyramid.

descence was Thomas Friedman's op-ed pieces in the *New York Times* regarding what he calls “Market to Mother Nature” accounting.³

There can be no “ecological thinking” that does not place human *social* destiny at the heart of our posture toward our environmental context. We may well learn over the next years that cities, even megacities, actually represent dramatically efficient ecological solutions, but this fact alone does not make them sustainable, especially if the forces of social invention remain trapped in tyrannies that only ecological thinking on an ecumenical scale can free us from. For ecological thinking too has its counterfeit and debased forms, and many “sustainability” discourses remain more oppressive than liberatory, more stifling than inventive, and it would be at great peril if we were to continue to assume that these two areas of approach, and especially their methods and pre-suppositions, are necessarily complementary.

We especially must not make the mistake of believing that one can detach the “human” and the “natural” from the aesthetic and still maintain that we have met the challenge of ecological thinking and ecological praxis. Similarly, it must not be assumed that by “human” we are referring to same set of qualities and potentials that are traditionally associated with these terms. For example, among the most radical and potentially fruitful conceptions of nature that have arisen in ecological circles in recent times are those from the Deep Ecology movement in the 1970s (coined 1973), whose foundational mandate was to think human being within and as part of the larger ecosphere, and not simply as an independent entity that inhabits it. This movement of thought sought to displace utilitarian approaches to the environment by refusing



to see “nature” or the environment as a mere set of resources to be placed at the service of human purposes. Without a doubt, this conception of nature and environment opens the way to juridical, moral, and even cosmological arguments that are both controversial and profoundly suggestive. The same years in which the Deep Ecology movement was forming saw the emergence into the public imagination of James Lovelock’s and Lynn Margulis’s work on the Gaia Hypothesis (1972). Interestingly, one of the Gaia Hypothesis’s most controversial features was to present the “natural” system of the self-managing biosphere as an autonomous entity, morally and theologically distinct from the interests and received purposes of the human species. Critics of the theory largely missed the deeper principles and opportunities provided by Lovelock’s (and later, Lynn Margulis’s) wager, that ecological thinking is at once scientifically sound and potentially far more “egalitarian” and accurate than much presupposition-infused orthodox science of the postwar period. Both of these developments (Deep Ecology and Gaian theory) have suggested that ethical and philosophical thought cannot be divorced from scientific creativity. This latter development defines another significant front that future design thinking will need to acknowledge and address.

Cities, on the other hand, have become the quintessential human habitat, confederacies as natural to us as were those of hunter-gatherer bands in the stone age whose optimum size of 150 members is said to have been ideal for both the easy and efficient exploitation of the resources of savannah biomes and the maintenance of the social and cultural equilibrium of these societies in all their overlapping dimensions—sexual, religious, and otherwise.

The role of what I am calling the “existential ecologies” of cities (in deference and homage to Felix Guattari), a concept intended to comprise everything that is required for the creative and dynamic inhabitation and utilization of the contemporary environment or, in a word, the cultural and social dimensions of our environment as rooted in the natural—are poorly theorized and understood, and at any rate insufficiently acknowledged. Yet they are key components of our ecology, without which none of the other parts could fit.

The challenges of ecological thinking are found principally in the deepest arenas of our imaginative and intellectual life. For example, as much promising and creative work is being made public today with respects to ultra-efficient and low-emission automobiles and novel proposals for large-scale transport, there is still relatively little evidence of a culture in which entirely new concepts and visions of “mobility” are

1 The title of former Vice President Al Gore’s recent film and campaign, “An Inconvenient Truth” alludes to this problem.

2 My thanks to Noorie Sadarangani, whose work and interest with respect to Dharavi were critical to my acquaintance with this remarkable urban phenomenon, both as an object of study and as an extraordinary world to experience.

3 Ideas preliminarily developed in Thomas L. Friedman, *Hot, Flat, and Crowded: Why We Need a Green Revolution—and How It Can Renew America* (New York: Farrar, Straus and Giroux, 2006).

emerging to challenge the received ideas, and romance, of individualism and freedom long represented by the libertarian automobilist encounter with “the open road” that decades of especially American cinema and literature from the John Ford Western to the Wim Wenders Road Movie have methodically cultivated. The supposition that there are no possible alternative myths of modern mobility is an embarrassing aspect of contemporary lack of faith in human invention. The existential components of modern mobility are inseparably connected to the “pragmatic” dimensions that will continue to emerge as our society democratizes travel, distributes wealth, and intensifies, rather than discourages and inhibits, broad and genuine interest among all peoples and classes in the marvels of a diverse multicultural world and the natural assets and places that endow it. Although these twin interests—the need to manage the increasing ecological cost of travel and the need to encourage acquaintance with and curiosity about the environment—may seem contradictory, they are not. The forms of their future marriage are simply what must be invented.

Further still, the issue of mobility itself must be seen as embedded within the system of social communication and interaction as it currently exists—despite the extraordinary transformations that have already taken place in the last two decades of computer-driven networks. A broader ecological approach will see these as intimately linked, and the need to find genuinely new forms of social connection and organization—tantamount to new mores, myths, and habits—and the implicit belief that these are evolvable, is mandatory. Likewise our relationship to objects generally, to accumulation and consumption, must change; whether this happens before or after the 2- to 6-degree increase in global temperatures, and the demographic, geographical, and economic cataclysms that will accompany anything beyond the very lowest end of this already unavoidable spectrum, is up to history itself. At every level our historical cultural relationship to our environment is poised to transform significantly over the next very short period of time, and despite the incontrovertible testimony of the hard data, we are still unable to imagine most of the changes required of us, nor even to imagine the scale of required change as possible. It is not millenarian to speak this way, but it does pose an unprecedented challenge to the design community to serve as an organizing center for the variety of disciplines and systems of knowledge whose integration is a precondition for connecting them to clear political and imaginative and, most important, formal ends.